



Annual Report and  
Financial Results  
December 2019



Steadily executing  
**our strategy**

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Building a scalable, low cost,  
vertically-integrated  
primary vanadium  
producer



# Steadily executing our strategy

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This report is also available at  
[www.bushveldminerals.com/financial-reports](http://www.bushveldminerals.com/financial-reports)

Throughout this publication, the Boards are referred to collectively as the Board. In this Annual Report, the terms 'Bushveld Minerals Group', 'Bushveld', 'Company', 'Group', 'we', 'us', 'our' and 'ourselves' are used to refer to Bushveld Minerals Limited. The terms 'Vametco Mine and Processing Plant', 'Vametco Vanadium mine' and 'Vametco' are used to refer to 'Bushveld Vametco Alloys (Proprietary) Limited'. The terms 'Vanchem plant' and 'Vanchem' are used to refer to 'Bushveld Vanchem Proprietary Limited'.

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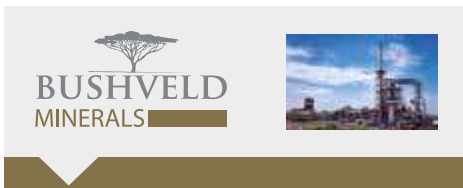
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## Who We Are

# Bushveld Minerals is a low-cost, vertically-integrated primary vanadium producer.

It is one of only three operating primary vanadium producers, owning two of the world's four operating primary vanadium processing facilities.



In 2019, we produced 2,931 mtV, which represents approximately three per cent of the global vanadium market. Our target is to organically grow production to more than 8,400 mtVp.a. in the medium term. Bushveld Minerals owns a diversified vanadium product portfolio serving the needs of the steel, energy and chemical sectors.

Bushveld Minerals participates in the entire vanadium value chain through its two main pillars: Bushveld Vanadium, which mines and processes vanadium; and Bushveld Energy, an energy storage component manufacturer and project developer, focused on vanadium-based energy storage systems called Vanadium Redox Flow Batteries ('VRFBs').

## Our vision

Bushveld Minerals' vision is to become one of the world's most significant, lowest-cost, vertically-integrated primary vanadium producers with a diversified vanadium product portfolio. We intend to gain recognition for our operating efficiency and the value we create for all our stakeholders.

## Our mission

Bushveld Minerals is committed to generating value in a safe and sustainable way for all of our stakeholders throughout the commodity cycle.

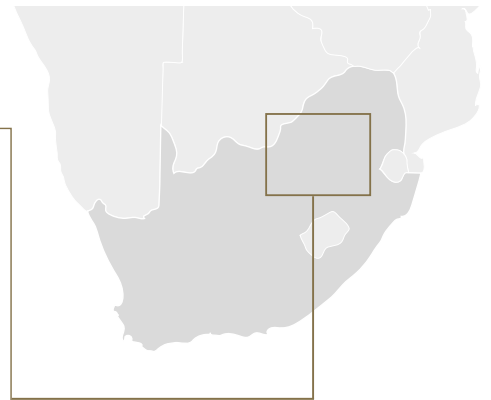
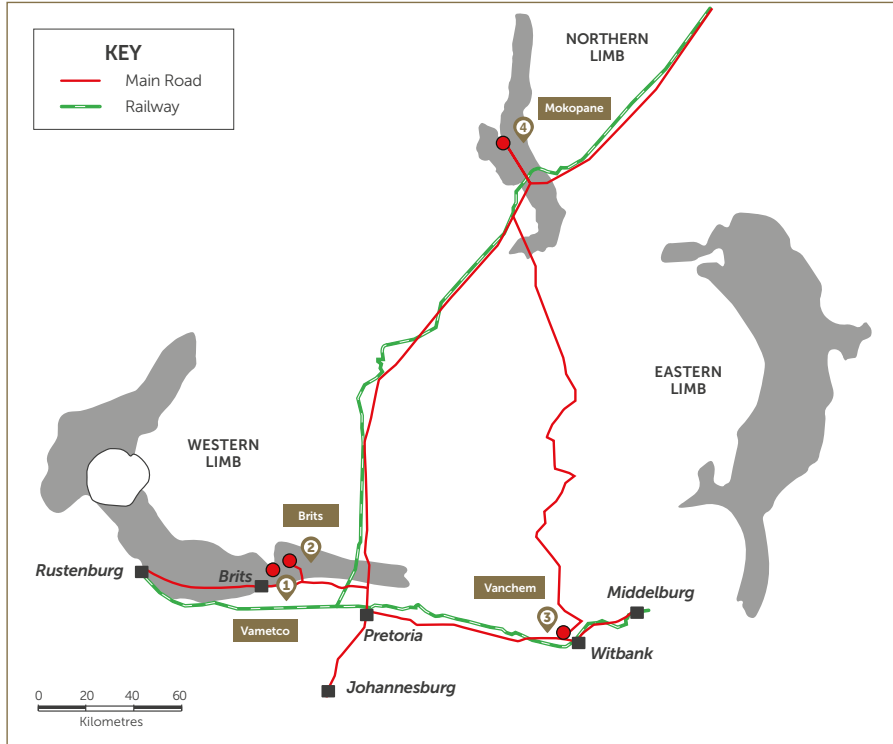
## Our strategy

Bushveld Minerals' strategy is:

- To build a sustainable, cash-generating, low-cost production platform, comprising:
  - a) high-grade, opencast and low-cost primary vanadium mines; and
  - b) refurbished brownfield processing facilities, with a flexible and scalable low-cost production capability and a diversified vanadium product portfolio.
- To leverage our large, low-cost production platform and build a leading downstream vanadium-based energy storage platform, which will have a pivotal role across the VRFB value chain as a supplier of electrolyte, a project developer and a VRFB technology champion.



Our Core Business



Bushveld Vanadium’s core assets

- 1 Vametco – Integrated mine and processing facility
- 2 Brits resource
- 3 Vanchem – Processing facility
- 4 Mokopane project



The Company’s assets are located in South Africa, which hosts the largest high-grade primary vanadium deposits in the world.

The Vametco mine, Brits resource and Mokopane project comprise a total JORC-compliant resource base of at least 550 Mt (100 per cent basis), including 76 Mt (100 per cent basis) of JORC-compliant reserves, with some of the highest primary grades in the world.

Through Vametco and Vanchem, Bushveld Minerals produces Nitrovan, ferrovandium, vanadium oxides and vanadium chemicals, which deliver a diversified revenue stream from the steel, chemicals and energy storage markets.

Collectively, the Vametco and Vanchem plants provide Bushveld with the potential for a flexible and scalable low-cost production platform, which will enable us to maintain a competitive position in the vanadium market.



Bushveld Energy, launched in 2016, is focused on developing and promoting the role of vanadium in the growing global energy storage market through the application of Vanadium Redox Flow Batteries (‘VRFBs’). Bushveld Energy brings the energy storage value chain to South Africa by leveraging the Company’s South African-mined and beneficiated vanadium.

Our business model embraces a number of activities along the VRFB value chain, including: electrolyte manufacturing, investment in VRFB manufacturing, battery deployment and project development.

# Investment Case

## Our key strengths



### Compelling commodity with attractive fundamentals

- Vanadium demand is underpinned by its use in steel, which is expected to grow at a compound annual growth rate ('CAGR') of 2.7 per cent through 2029<sup>1</sup>;
- Vanadium Redox Flow Batteries ('VRFBs') are expected to increase vanadium demand by a CAGR of six per cent per year by 2027<sup>2</sup>;
- Supply is concentrated and constrained and there is limited new supply expected from greenfield projects given the higher barriers to entry;
- Medium to long-term market fundamentals remain attractive, and existing primary producers such as Bushveld Minerals are best positioned to deliver new supply.



### Quality vanadium assets

- Bushveld Minerals' primary vanadium resources offer significant growth potential. Our ore bodies comprise large, high-grade opencast deposits, with grades of 1.6 – 2.0 per cent  $V_2O_5$  in-magnetite, which are among the highest in the world;
- The Company's 550 Mt (100 per cent basis) combined resource is one of the largest in the world and is complemented by low-cost, scalable processing capacity;
- Bushveld Minerals owns two of the world's four operating primary vanadium processing facilities and has capacity to scale up production significantly, increasing its share of the vanadium market.



### Diverse product offering

- Through Vametco and Vanchem, Bushveld Minerals produces Nitrovan, ferovanadium, vanadium oxides and vanadium chemicals, which deliver a diversified revenue stream from the steel, chemicals and energy storage markets.



### Leading position in VRFB value chain

- Bushveld Minerals, through its subsidiary Bushveld Energy, focuses on VRFB technology within the stationary storage market. The energy storage market is expected to grow to US\$50 billion by 2027<sup>2</sup>.



### Leadership team

- Bushveld Minerals' experienced leadership team provides a pool of skills and depth of experience that will enable it to achieve its targets;
- The team has the necessary vanadium mining and processing experience to ensure targets are achieved;
- The management team has a proven track record of value-creating transactions that have generated strong returns for shareholders;
- Board composition is constantly reviewed to ensure strong corporate governance.





### Vertical integration

- Bushveld Minerals' vertical integration strategy allows it to mine, process and manufacture vanadium-based products in a single value chain and provides flexibility to maximise sales, depending on product demand dynamics;
- We are leveraging our low-cost scalable production base to build a leading downstream vanadium-based energy storage platform, to enable us to play a key role across the VRFB value chain;
- Vertical integration is key, not only for strengthening the vanadium demand profile from energy storage, but also for unlocking significant economic opportunities for the Company through a single value chain;
- The Company's vertical integration strategy will provide a natural hedge against volatility in the vanadium price, as the Group can supply the steel, chemicals and energy storage markets to maintain its solid position throughout the commodity cycle.



### Sustainability – value beyond compliance

- Bushveld Minerals is dedicated to maintaining sustainable mining and processing practices across all of our operations and projects. This includes ensuring our employees enjoy a healthy and safe working environment, that we operate in an environmentally and socially responsible manner, and that we add value to all stakeholders with whom we work;
- The Company actively promotes the principles of the circular economy, developing the technical and commercial parameters to ensure that vanadium contained in VRFBs is re-used. VRFBs are one of the key solutions to integrate renewable energy globally and accelerate the rate of the energy transition.



### Governance

- Bushveld Minerals is committed to high standards of corporate governance and applies the Quoted Companies Alliance Corporate Governance Code;
- The Company continuously reviews its governance policies and is committed to improving its practices over time.



### Shareholder Returns

- Bushveld Minerals is committed to delivering attractive returns to its shareholders. We apply a consistent and disciplined approach towards capital allocation to manage the Group's growth initiatives.

1 Sources: Roskill, Vanadium Outlook to 2029.  
2 Source: Navigant Research.



## Chairman's Statement

### Ian Watson

# Building an industry-leading business

Dear Stakeholders,

It is my great pleasure to report on the 2019 financial year, which was another year of positive developments and growth for Bushveld Minerals.

2019 was a transformational year, in which the Company significantly progressed the business development activities across our upstream and downstream platforms. It saw the completion of a landmark transaction, the successful acquisition of the Vanchem processing facility, which was a testament to the strength of our management team.

Having successfully acquired Vametco and Vanchem, Bushveld Minerals now owns two of the three primary vanadium processing facilities in South Africa and two of the four operating primary processing facilities in the world, setting the Company well on its way to achieve its target of being one of the most significant, low-cost primary vanadium producers.

Although the backdrop to our operations over the past year was in many ways challenging, with continued slow growth in the South African economy and uncertainty over the sustainability of Eskom, the country's power utility, Bushveld was able to advance many of its long-term ambitions. As a truly South African corporate citizen, we believe our strategy – to utilise and benefit from the country's natural resources, grow our operations, create jobs and assist with alternative energy solutions – contributes towards addressing our country's complex problems.

Bushveld Minerals plans to develop its downstream operations beyond production of end-use vanadium products, to become a key player across the energy storage value chain. As we have repeatedly stated, the energy storage market presents a sizeable commercial opportunity for our Company. Our integrated strategy means we will not only benefit from the uptick in demand arising from this opportunity, but it will also allow us to participate meaningfully in the downstream sector.

The VRFB Investment Platform that we announced during the year is another sign of our ambitions in energy, allowing us to partner with VRFB Original Equipment Manufacturers ('OEMs'). Through this platform, we have acquired interests in VRFB OEM Invinity Energy Systems plc, and, as part of a consortium, in Enerox GmbH.

We were also encouraged by the intentions expressed by Minister of Minerals and Energy, Gwede Mantashe, at the February 2020 Investing in Africa Mining Indaba, and by President Cyril Ramaphosa in his State of the Nation Address, to stimulate self-generation by industry and municipalities. This is good news for us as a mining and processing company, positive for our business as an energy company, and promising for the country at large.

Often a review of the financial year-end such as this one does not coincide with finality of certain events in a company's lifecycle. Bushveld's achievements in not only initiating, but also closing, a number of growth opportunities in 2019 (most notably the acquisition of Vanchem) across its platforms put us on a very strong footing from which to tackle 2020.

The safety and wellbeing of our employees and host communities is a priority for the Group. We are pleased to announce another fatality-free year and an improvement in Vametco's Total Reportable Injury Frequency rate. The sudden outbreak of the Covid-19 pandemic in 2020 has temporarily delayed our progress, along with worldwide economic activity and trade. Bushveld was required to put its operations on care and maintenance for a period of time in order to support the South African government's containment measures. In response to the onset of the Covid-19 virus, we took a number of measures to mitigate the risk of spreading infection and have followed the advice from health authorities in South Africa. Further details on the measures implemented by the Company in response to the Covid-19 pandemic can be found in the Principal Risks section of the report.



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*2019 was a transformational year, in which the Company significantly progressed the business development activities across our upstream and downstream platforms. It saw the completion of a landmark transaction, the successful acquisition of the Vanchem processing facility, which was a testament to the strength of our management team.”*



## Chairman's Statement continued

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*We will work closely with the government and all of our stakeholders to manage the Covid-19 crisis and ensure business continuity while complying with applicable regulations and ensuring the safety of our staff and communities in which we operate.”*

As the near-term impact of Covid-19 and operating conditions remains uncertain, the Group has implemented cash preservation measures, as well as reviewed and prioritised its capital investment across the portfolio. We are pleased that both Vametco and Vanchem have now resumed operating at pre-Covid-19 levels. Despite the Covid-19 outbreak we remain confident that the fundamentals of the vanadium market remain robust.

During the year, we were able to attract several managers throughout the business. Bertina Symonds joined as General Manager of Vametco and Tanya Chikanza was appointed as Finance Director of Bushveld Minerals. They have already proved to be valuable additions to the team. I would also like to thank the outgoing Finance Director, Geoff Sproule, for his contribution over the years. We wish him all the best for the future.

After year-end, we were able to strengthen our Board's capability to govern and manage risk within Bushveld Minerals by appointing Dolly Mokgatle as an Independent Non-Executive Director. Dolly is an established

business leader who has held various significant leadership positions within several of South Africa's state-owned enterprises, as well as within the private sector. With her leadership experience in state-owned enterprises, she has accumulated extensive commercial and policy-making understanding in the energy sector.

Looking ahead to the remainder of 2020, it is difficult to predict the full impact of Covid-19, whose first epicentre was China before spreading across the world, upending lives, disrupting economies and creating substantial market volatility.

We will continue to monitor the situation carefully and adjust our plans appropriately. We will work closely with the government and all our stakeholders to manage the Covid-19 crisis and ensure business continuity while complying with applicable regulations and ensuring the safety of our staff and communities in which we operate.

The Company remains committed to the capital allocation policy which was developed in 2018 and has created discipline

in how we deploy capital, while creating long-term shareholder value. The Board approved a dividend policy based on a free cash flow pay-out ratio, reflecting Bushveld Minerals' commitment to return cash to shareholders in a sustainable manner while prioritising its stated growth strategy. The Board is not recommending a dividend for the year ended 31 December 2019.

After another year of sustainable growth at both an operational and corporate level, I would like to thank Fortune and the entire Bushveld team for their efforts. They have achieved continued operational strength at Vametco while identifying and seizing on opportunities thrown up by prevailing market conditions.

We thank all our stakeholders for their continued support.

**Ian Watson**  
Independent Non-Executive Chairman  
23 June 2020







## Chief Executive Officer's Review Fortune Mojapelo

# Creating value with disciplined capital deployment

I am delighted to present the 2019 annual report, a year in which we were able to maintain a safe working environment for our employees, while our focus on control of costs allowed us to continue to generating profits, despite a significant softening of the vanadium price.

Once again, we achieved a year with no fatalities. We had a single lost-time injury at Vametco, which also recorded an improvement of 19 per cent year-on-year in its Total Injury Frequency Rate. This metric will continue to be a key focus for management as we pursue our goal of zero harm across all our operations.

There were no new cases of occupational health diseases at Vametco in 2019. Since we assumed control of Vanchem in November 2019, there were no fatalities, lost-time injuries or new occupational health diseases reported.

We have instilled a work culture based on behavioural management that views safety and health as of paramount importance. This was achieved through various safety campaigns implemented in 2019 and this ethos has shaped our response as we deal with the challenges presented by Covid-19 in 2020, which are discussed in more detail below.

After safety, another key focus area for the management team is keeping costs at the operating level as low as possible on a sustainable basis. Achieving this goal ensures the Company's ability to generate profits through the commodity cycle, something particularly important for a commodity with the volatility of vanadium. It also ensures that the best possible returns are generated for stakeholders during periods of higher prices,

that supply to customers is guaranteed throughout the cycle and the team can seize opportunities in different price environments.

We continue to achieve this primary goal at our flagship Vametco operation, a tier-one vanadium mining asset. Vametco remains among one of the lowest-cost mines in the vanadium sector, providing a world-class asset at the core of our business and giving us unique advantages. In the 2020 financial year we will continue to investigate every opportunity to lower our cost base even further.

During the course of the year, the Group secured ZAR375 million in debt facilities from Nedbank Limited, comprised of a ZAR125 million in revolving credit facility ("RCF") and a ZAR250 million term loan, through its subsidiary Bushveld Vametco Proprietary Limited. This is testament to the Group's financial strength. The facilities have subsequently been fully drawn down to provide balance sheet flexibility to Vametco and the wider Group. We had a Group unaudited gross cash and cash equivalent position at 31 March 2020 of US\$34.4 million, which includes the ZAR375 million in debt facilities.

Our strong industry position and improved liquidity positioned us well to take advantage of several investment opportunities during 2019 as we continued on our strategic path to grow into a significant, low-cost, vertically-integrated vanadium business.

In 2019, we strengthened our current and future production capacity with the acquisition of Vanchem and accelerated our growth in the energy storage space with several strategic investments in Vanadium

Redox Flow Battery ('VRFB') companies that have well-established intellectual capital and an existing platform of installed capacity.

The acquisition of Vanchem, a brownfield primary vanadium processing plant with a broad range of vanadium products, gives the Company the platform to grow its production base by almost three-fold over the next five years, to become one of the largest primary vanadium producers in the world. The acquisition has many advantages in addition to the significant greater processing capacity for the Group, including flexibility to scale up based on market demand, a diversified product range and the opportunity to unlock our Mokopane resource much sooner and at a fraction of the capital cost envisaged in the 2016 pre-feasibility study ("PFS").

For the energy part of the business, we announced our plans to partner and invest in VRFB Original Equipment Manufacturers ('OEMs') through a VRFB Investment Platform ('VIP'). This is a key part of Bushveld's strategy for two key reasons. Firstly, it will help to accelerate VRFB use, which will increase demand for vanadium. Secondly, it has the potential to provide a natural hedge for the Company against vanadium price volatility. Our downstream and upstream targets will grow the business and generate value for shareholders.

The investments in our upstream and downstream parts of the business were made by adhering to our capital allocation framework while remaining conscious of the volatile commodity price environment. This framework supports better decision-making and growing long-term shareholder value.



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## Chief Executive Officer's Review continued

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### Detailed review of operations Bushveld Vanadium

#### Vametco

Vametco improved its operating performance during the course of 2019 as we implemented the initiatives identified as part of the Transformation Programme diagnostic review, conducted in 2018. The Transformation Programme was designed to ensure that we maximise production throughput and minimise costs on the back of the improvements implemented by our motivated and engaged workforce. Since Vametco is the Group's primary earnings generator and thus engine for growth, it is imperative that it operates to its full potential.

For the full year 2019, Vametco achieved record annual production of 2,833 mtV (100 per cent basis) in the form of Nitrovan from magnetite feed only, meeting 2019 guidance of 2,800 to 2,900 mtV. This is an 11 per cent increase over 2018's output of 2,560 mtV.

Vametco beat 2019 production cash cost guidance of US\$18.90/kgV to US\$19.50/kgV, achieving a 2019 production cash cost of US\$18.11/kgV. This is a five per cent reduction compared with 2018, when costs were US\$19.11/kgV. The performance was achieved through higher production volumes, our cost reduction programme and a weaker ZAR: USD relative to 2018, which was offset by higher inflation.

During the fourth quarter of 2019, when Eskom implemented industrial power rationing, Vametco did not experience any periods of total power loss. Instead Eskom implemented load curtailment, which required maintaining

total daily power consumption to 10-12 MW between the hours of 8am and 6pm. As a result, Vametco's operations were not affected by these periods of load curtailment and there was no impact on plant performance.

Vametco's management places a high priority on maintaining strong relationships with Eskom's regional management and customer relations, which has helped us to take proactive steps to reduce any impact of curtailed power supply. The Company has also been looking at ways to de-risk its power requirements through its Bushveld Energy subsidiary, which commenced a procurement process to install a solar plus energy storage 'mini-grid'. This project will use a VRFB and has the capacity to be expanded in the future to reduce dependency on the electrical power grid.

Owing to its strong production numbers, Vametco generated an EBITDA of US\$42.8 million for 2019, despite a 34 per cent reduction in the average vanadium price received.

In 2020, we will commence the PFS for Phase 3 of the expansion for Vametco to achieve a steady state production run-rate of 4,200 mtVp.a. by 2025. The preliminary capital expenditure for Phase 3 is estimated at approximately ZAR430 million (circa US\$26 million), with most of the cost being Rand-denominated. The capital expenditure and production profile will be finalised after feasibility studies are concluded. These estimates are subject to ongoing review in the context of the Covid-19 pandemic implications. The Company will, over the period, prioritise spend depending on market conditions.

#### Vanchem

In November 2019, we were pleased to announce the closing of the transformative acquisition of Vanchem at a fair value consideration of US\$55.8 million<sup>1</sup>, down from the initially proposed sum of US\$68 million. Vanchem is a primary vanadium producing facility with a beneficiation plant producing vanadium pentoxide, ferrovandium, vanadium chemicals and it is capable of producing vanadium trioxide. The plant uses the salt roast beneficiation process, which is similar to the production process used at Vametco.

This highly strategic transaction combines our existing portfolio of high-grade, primary vanadium resources, including the Mokopane greenfield deposit, with an established production facility.

Vanchem not only brings immediate scalable processing capacity, but on completion of the refurbishment programme, its three-kiln configuration will add important flexibility to the Company's production throughputs without compromising its cost efficiencies. The vanadium chemicals and high purity oxide capabilities will be particularly key as the Company grows its exposure to the emerging stationary energy storage industry through VRFBs.

Post year-end, the Company completed a preliminary desktop scoping study for a three-phase refurbishment programme to achieve a production run-rate in excess of 4,200 mtVp.a. by 2025 through the three-kiln configuration at Vanchem. The total capital expenditure for the refurbishment programme is estimated at approximately ZAR750 million

<sup>1</sup> Refer to Note 8 for details on the fair value purchase price.



(circa US\$45 million), with the majority of the amount being Rand-denominated. The first phase focuses on critical refurbishment and regulatory capital expenditure and it is expected to require a capital expenditure of ZAR234 million (circa US\$14 million). This phase will be carried out in 2020 and 2021 and production is estimated at approximately 1,100 mtVp.a. The second phase will increase production to 3,100 mtVp.a. after ramp-up, and it is expected to require capital expenditure of ZAR355 million (circa US\$21 million). It will be conducted in 2021 and 2022. The third phase will raise production to more than 4,200 mtVp.a. after ramp-up. It is expected to require a capital expenditure of ZAR171 million (circa US\$10 million) and be carried out in 2023 and 2024. The capital expenditure and production plan are dependent on more definitive feasibility study work. These estimates are dependent upon the ongoing review in the context of the impact of Covid-19 on our business. The Company will prioritise spend depending on market conditions.

As part of the first phase, the Group has allocated a total of approximately ZAR85 million (circa US\$5 million) as critical capital spend in 2020 to enable Vanchem to continue to operate sustainably at current production levels of approximately 1,000 mtV. Most of the spending will be incurred during the second half of 2020.

With the acquisition of Vanchem, Bushveld Minerals is on a clear path to enhance its competitive position in the vanadium market over the coming years.

### Mokopane

Mokopane is a key part of Bushveld's vanadium strategy. The project comprises one of the world's largest primary vanadium

resources, with high in-whole rock grades of vanadium oxide. On 29 January 2020, the Department of Mineral Resources and Energy executed a 30-year mining right, giving the Company legal permission to proceed with physical mining activities.

The granting of a mining right was a significant milestone in the development of the project. It will support Bushveld's plans for Mokopane to become a primary supplier to Vanchem. The total capital expenditure for the Mokopane mine, including mine development and the beneficiation plant (crushing, screening and dry magnetic separation) and associated surface infrastructure, is estimated at ZAR370 million (circa US\$22 million).

A definitive feasibility study ("DFS") to mine the Main Magnetite Layer, to provide a resources and reserves assessment with a focus on Mokopane as a primary feedstock supplier to Vanchem has been deferred by a year as part of the Group's cash preservation measures to manage near-term liquidity. When restarted, we estimate the study will take between nine to 12 months to complete.

The Company retains the option of developing Mokopane into a standalone integrated mine and processing plant, producing 5,300 mtVp.a. of greater than 99 per cent purity  $V_2O_5$  product.

### Brits

Post year-end, we published a Maiden Resource Statement and JORC-compliant Competent Person's Report for our Brits project, showing an aggregate Inferred and Indicated Mineral Resource distributed across the three seams (the Lower, Intermediate, and Upper Seams) of 66.8 Mt at an average grade of 1.6 per cent  $V_2O_5$  in-magnetite, which is among the highest grades in the world.

Brits provides the optionality for additional ore feed for the Vametco plant and, if required, concentrate feed for the Vanchem plant.

### Bushveld Energy

In 2019, Bushveld Energy made significant progress across all its key areas of focus. We advanced the development of our electrolyte production facility, deployed our electrolyte rental model, advanced toward energy storage mandates and launched the VIP as part of our strategy of developing partnerships with VRFB companies.

During the year, the Company unveiled its strategy for partnering with Original Equipment Manufacturers ("OEMs") of VRFB technology to supply vanadium electrolyte. Furthermore, through the VIP, minority investments will be made into VRFB OEMs with attractive upside potential. We have already announced two transactions. The first was to fund a US\$5 million convertible loan, which supported the merger of Canada-based Avalon Battery Corporation ("Avalon") with UK-based and AIM-listed redT energy plc ("redT") in April 2020. The enlarged group subsequently changed its name to Invinity Energy Systems plc ("Invinity"), in which our Company now holds an 8.71 per cent interest. The second transaction was the proposed purchase, as part of an investment consortium, of Enerox GmbH ("Enerox") from CellCube Energy Storage Systems Inc.

In all VIP ventures, Bushveld Energy will hold a minority interest without direct operational involvement beyond the supply of vanadium and electrolyte.



## Chief Executive Officer's Review continued



Importantly, under separate agreements between Bushveld and Avalon and redT respectively Bushveld has acquired the right of first refusal to supply vanadium products to its invested companies on the same material terms as any other supplier. This provides a future hedge for Bushveld against volatility in the vanadium price, as the VRFB market continues to develop.

Bushveld entered into a Joint Venture agreement with redT on 9 March 2020 to form a Vanadium Financing Partnership to supply vanadium electrolyte to be used in third-party owned VRFB projects developed by redT in Europe over the next two years. The Joint Venture agreement was transferred to Invinity. The partnership will be a special-purpose vehicle structured to hold physical vanadium. The projects will help demonstrate proof of concept for this financial model on a larger scale and build on the smaller contract executed in 2019 in the US with Avalon.

The rental model Bushveld is pioneering will reduce upfront purchase costs, taking advantage of the re-usability and significant residual value of vanadium electrolyte. The agreement could be expanded to include other VRFB companies or vanadium suppliers in the future.

Post year-end we approved the construction of the vanadium electrolyte plant in East London South Africa, in partnership with the Industrial Development Corporation ("IDC"). The approved investment commitment from Bushveld is up to ZAR68 million (circa US\$4 million) through to 2022, and includes capital expenditure, working capital and ramp-up support. The IDC also approved the investment for its share of equity and all the debt funding for the project.

Furthermore, the Company is working with energy policymakers on initiatives to reverse the downward trajectory of South Africa's power system. At the same time, the Company is reinforcing its own resilience, in case the power system continues to deteriorate. This includes completing grid connections and geotechnical studies and launching a procurement process for a solar-plus-energy-storage mini-grid at the Vametco mine. The project, which will use a VRFB to provide long duration energy storage, can be expanded in the future to reduce the mine's dependence on the electric power grid.

### Corporate Social Responsibility

Our commitment to corporate social responsibility is a component of our strategy that stems from our deep conviction that our responsibility to our employees, communities and the environment extends far more broadly than the creation of jobs or payment of dividends. We recently embarked on this journey and our work is only starting. We acknowledge that achieving sustainability is a long-term goal.

Our starting point is that we intend to generate value in a safe and sustainable way for all stakeholders throughout the vanadium value chain. Oversight of the implementation of the sustainability pillars across the Group rests with the executive and operations leadership teams, supported by the Board and its subcommittees.

The Company's Environmental, Social and Governance philosophy is 'value beyond compliance' and is based on the principles of building shared value with its stakeholders. To achieve added value beyond compliance, our approach to Sustainable Development is guided by and embedded in three key pillars: Health and Safety, Environmental Management and Socio-Economic

Development. This approach is aligned with the United Nations' 2030 Sustainable Development Goals. It is underpinned by our belief in Shared Economic Value, where there is fundamental synergy between our economic performance, the social progress of the communities where we operate and our broader stakeholders.

Our commitment to sustainability is evident not only in the way we manage our operations, but in our belief that our product, vanadium, contributes positively towards creating a greener and more sustainable economy.

Through our subsidiary, Bushveld Energy, we are actively driving adoption of VRFBs in the global energy storage industry. VRFBs will play an increasingly important role during the energy transition, helping grids to become more efficient, supporting decarbonisation through greater adoption of renewable energy and assisting remote off-grid access to electricity through renewable energy plus storage applications.

The full re-usability of vanadium in VRFBs will open up opportunities to rent the vanadium electrolyte over 20 years or more of a battery's lifecycle, with scope to reuse the electrolyte in other batteries or convert the electrolyte (with no requirement for new recycling facilities) into vanadium products for the steel industry. We believe this quality makes vanadium one of the most circular economy-friendly minerals.

We have made significant progress in 2019 and will continue to build on this success.

More information can be found in the Corporate Social Responsibility section of this report.



“

*At Bushveld Minerals, the wellbeing of all our employees is of great importance. As a Company we recognised the gravity of the Covid-19 pandemic early and moved quickly to take all necessary measures to create awareness, minimise transmission risks and establish intervention protocols for potential cases. We established a cross-functional Covid-19 Task Team, including operations, health and safety, human resources, finance, community and government relations and other support functions to ensure that the Company is best prepared to navigate this period.”*

### Capital allocation

Bushveld Minerals continues to implement the capital allocation policy that the Board of Directors and management established last year. The capital allocation framework imposes consistent discipline, while enabling us to fund capital expenditure items through changing market conditions and price volatility.

In order of priority, the Group's capital will be allocated towards:

- Ensuring maintenance of stable production across all our operations and prioritisation of critical and regulatory capital;
- Supporting a strong balance sheet that is resilient through the vanadium price cycle;
- Investing in the Group's growth projects, either through organic growth or brownfield acquisitions, to achieve a production rate of more than 8,400 mtVp.a and downstream integration in the medium-term; and
- Returning cash to shareholders.

With the acquisition of Vanchem we now have the processing facility to achieve our medium-term production target of more than 8,400 mtVp.a. Increased production from Vametco and Vanchem underscores our growth trajectory. However, we will ensure that we continue to be conservative in how we invest capital and ensure that any production increase is profitable, especially in the current price environment. We will continue to appropriately prioritise capital expenditure to maintain safe and stable operations.

### Johannesburg Stock Exchange listing

The Company continues to monitor market conditions and engage with South African institutional investors. Timing of the Johannesburg Stock Exchange listing has been impacted by the Covid-19 pandemic. Bushveld Minerals' growth strategy will benefit

South Africa by using the country's natural strengths to become a leader in our industry. The rationale for our proposed listing on the JSE is based on the following considerations:

- our resources are located on the world-renowned Bushveld Complex in South Africa, the world's largest primary vanadium resource base;
- our vertical integration aligns with the country's push for increased local beneficiation of its mineral resources;
- our downstream energy storage proposition aligns with the government's stated goals of downstream mineral beneficiation and adopting stationary energy storage; and
- a listing will allow us to access a significant pool of local investors who have an affinity with our story.

### Covid-19 response

At Bushveld Minerals, the wellbeing of all our employees is of great importance. As a Company we recognised the gravity of the Covid-19 pandemic early and moved quickly to take all necessary measures to create awareness, minimise transmission risks and establish intervention protocols for potential cases. We established a cross-functional Covid-19 Task Team, including operations, health and safety, human resources, finance, community and government relations and other support functions to ensure that the Company is best prepared to navigate this period. To minimise the potential for Covid-19 to spread at our operations, we implemented various preventative measures, including supplying sanitisers, temperature testing, adapting workplaces to foster social distancing, introducing strict procedures at our operations and enabling remote work, where it was practicable to do so. This is being coupled with awareness campaigns to inform and educate employees and the wider community.

The Covid-19 pandemic is the biggest risk facing the world economy at present, and it is still evolving. The pandemic has resulted in drastic actions by governments across the world, potentially leading to a global recession. We are fully supportive of the bold measures taken by the South African government to mitigate and contain infection levels in the country.

On 23 March 2020, the South African government issued a directive requiring a 21-day nationwide lockdown for all residents, with the exception of essential businesses and activities, to help contain the spread of Covid-19. As part of the directive, mining operations had to be placed on care and maintenance from midnight on 26 March 2020 until 16 April 2020. We placed our Vametco operations and Vanchem facility on care and maintenance in a way that enabled us to ramp up operations safely and speedily after the lockdown and ensure the long-term sustainability of our business.

Following engagement with the government to obtain further detail on permitted activities during the lockdown period, the Group received approval from the South African Department of Mineral Resources and Energy for reduced-scale operations at Vametco, under agreed precautionary measures. As a result, the Group was able to successfully complete the annual maintenance programme, which was initially planned for the second quarter of 2020.

Under the Amended Disaster Regulations announced by the South African Government on 16 April 2020, mining operations were allowed to re-open and operate at a reduced capacity of 50 per cent of normal production levels during the lockdown period. On 23 April 2020, the Government announced that it would be following a 'risk-adjusted strategy for economic activity'.

## Chief Executive Officer's Review continued

The approach proposes five alert levels, with five being a hard lockdown and one being where normal activity can resume. Different parts of the country may be at different alert levels at any one time, with levels adjusted up or down based on the rate of transmission in each area. On 1 May 2020, South Africa moved to level four, allowing open-cast mining to scale up operations to full employment and supply chains for permitted goods and services to resume. In preparing for ramp-up, we established 'return to work' operating procedures and a rigorous screening and testing regime for all employees and contractors. All necessary health and safety protocols, including social distancing, sanitising and wearing personal protective equipment, including face masks, remain in place. We are delighted that both Vametco and Vanchem are now back to pre-lockdown production levels.

### 2020 Capital Expenditure

As the near-term impact of Covid-19 on operating conditions remains uncertain, we have taken cash preservation measures to manage near-term liquidity, while preserving the long-term sustainability of the assets and still positioning the Company to increase its share of the vanadium market. These include reviewing operational expenditure, prioritisation of critical and regulatory capital, as well as deferring some growth-associated (non-critical) capital expenditure across the mining, processing and energy businesses. Furthermore, to enhance our liquidity position and financial flexibility, we drew down on the remaining RCF of ZAR125 million at the end of March 2020.

For 2020 we expect annual capital expenditure to be approximately ZAR135 million (circa US\$8 million). The funds will be allocated as follows: ZAR85 million (circa US\$5 million) for the Vanchem critical refurbishment programme to sustain current production levels of approximately 1,000 mtV, ZAR11 million (circa US\$660,000) million for sustaining capital expenditure at Vametco, ZAR35 million (circa US\$2 million) for the completion of the kiln off-gas project at Vametco and ZAR4 million (circa US\$240,000) for the Vametco Phase 3 PFS. We will continue to monitor global macroeconomic developments and inform the market of any adjustments to these capital expenditure plans.

Our capital allocation discipline drives competition for capital across our projects. Only those that offer the highest return options while balancing risk and reward are considered for development. As a result, each project in the mining and energy business will work towards minimising costs, while maximising production and productivity, so as to offer the best return.

### Outlook

While the 35-day nationwide lockdown has resulted in a not-insignificant loss of production, the Company has taken the view that there is scope to still meet guidance. It has decided to keep guidance at Vametco and Vanchem unchanged, however this is subject to no further Covid-19 related stoppages. Production will be weighted towards the second half of 2020, given the days lost during the lockdown in the first half. On a site-specific basis, Vametco is expected to produce between 3,000 mtV and 3,200 mtV, at a production cash cost of between ZAR257/kgV and ZAR265/kgV (US\$17.20/kgV and US\$17.70/kgV). Vanchem is expected to produce between 960 mtV and 1,100 mtV, at a production cash cost of between ZAR245/kgV and ZAR260/kgV (US\$16.30/kgV and US\$17.30/kgV).

We are closely monitoring the evolving impacts of the Covid-19 outbreak, which in recent weeks has affected a number of other mining operations in the country that had newly restarted. We have implemented all measures necessary to minimise any impact on our employees and the business, while adhering to the directives provided by the South African government. The protocols we have developed are robust and are designed to ensure that in the event of a positive case we will be able to manage it with minimal disruption to our operations.

Despite the 2020 global outbreak of Covid-19, we retain a positive outlook on the vanadium market, characterised by a growing intensity of use of vanadium in steel supported by enforcement of rebar regulations in China, with the country continuing to be a net vanadium importer. We expect countries across the world to increase infrastructure spending in order to revive and support economies following the impact of the Covid-19 pandemic, as well as continuation of the energy transition, which will see more renewable and energy storage deployments in which VRFBs are expected to capture a significant market share. We retain the view that supply remains constrained and concentrated. All these factors benefit primary vanadium producers such as Bushveld Minerals.

We will continue to ensure that Vametco and Vanchem maintain their competitive edge by optimising and improving operating margins, increasing production through debottlenecking activities and prudently investing for the future. We anticipate synergies will accrue from both Vanchem and Vametco as we bring the businesses together, which will allow us to build a business with a diversified product range that continues

to be resilient throughout the commodity cycle and ready to capture the benefits of a price recovery.

By doing so, we aim to increase our share of the vanadium market while moving further down the vanadium production cost curve. This will allow us to withstand short-term price weakness, make decisions with the longer term in mind, and provide a stable environment for the development of new downstream demand sources, such as energy storage.

At Bushveld Energy we have earmarked a few priorities as we continue to make progress. These priorities are to advance the vanadium electrolyte plant; implement additional, large electrolyte rental contracts; complete the acquisition of Enerox as part of a consortium; progress the VIP; prove the business case for VRFB deployments, including delivery of the Vametco mini-grid as a funded independent power producer; and submit bids for battery energy storage system opportunities as part of South Africa's Integrated Resource Plan.

Notwithstanding the short-term capital deferrals that have been necessitated by the Covid-19 pandemic, the Company remains committed to its five-year growth strategy that will ultimately lead to a production platform in excess of 8,400 mtVp.a. and see Bushveld Energy become a leading energy storage player. While internally generated cash flow would always be the priority source of funding for this growth programme, the Company will, over the five-year period, investigate a variety of forms of funding, and prioritise spend depending on market conditions, ensuring an optimal capital structure and the best returns for shareholders in the long-term. Although 2020 is expected to be another transitional year in our efforts to create a leading vertically-integrated primary vanadium business, the Covid-19 global pandemic requires that we adapt to an extremely fluid situation.

I would like to take this opportunity to thank everyone that has played a crucial role during another transformative year for Bushveld Minerals.

**Fortune Mojapelo**  
**Chief Executive Officer**  
 23 June 2020





## Business Model

# Our Vertical Integration Business Model

## Creating long-term value for all of our stakeholders

### Strategy rationale

Bushveld Minerals' vanadium grades, at 1.6 per cent – 2.0 per cent  $V_2O_5$  in magnetite, are among the highest in the world, with vanadium predominantly found in magnetite form co-existing with iron and titanium (vanadium titaniferous magnetite ore). Metallurgical beneficiation is thus a matter of necessity, producing products for alloying applications in the steel sector and chemicals for other applications. Accordingly, most vanadium production in the world is done by integrated mines and processing plants.

For Bushveld Minerals, however, our vertical integration goes further, covering diversification of vanadium products and our efforts to grow demand by developing the opportunity for vanadium in the energy storage industry. Here the Company sees a unique confluence of:

- A burgeoning energy storage industry that is set to create a step change in vanadium demand;
- A unique positioning of the Company to capture a significant share of the vanadium value chain in the energy storage industry; and
- A large, attractive commercial opportunity that can create a natural hedge for the Company operating in some of the most volatile commodity markets.

While vertical integration captures commercial value for the business, it is essential to unlock the energy storage opportunity for vanadium.

Vertical integration addresses two significant hurdles for global adoption of vanadium redox flow batteries:

- Security of supply, where the massive but still uncertain growth in energy demand for vanadium could create more market volatility, if it is not matched with timely supply expansion. At the same time, while a recent World Bank Group Minerals for Climate Action report observed that by 2050 vanadium demand in energy alone could be twice the current market, the uncertain timing of that demand makes industry-wide production expansion challenging;
- Security of cost, where vanadium's high price volatility and its role as the sole mineral in the Vanadium Redox Flow Battery ("VRFB"), makes cost more imperative than in other industries, such as steel. Threats of price spikes, such as the one seen in 2018, while profitable for vanadium producers threaten to undermine the more nascent energy storage industry before it attains maturity.

### Bushveld's strategy implementation

Our vertical integration strategy has the following two primary components:

- Establishing a low-cost primary production platform with a production of more than 8,400 mtVp.a., based on our large high-grade deposits and low-cost, scalable processing facilities;
- Leveraging our production capabilities to build a downstream vanadium-based energy storage platform comprising electrolyte production, investment into VRFB manufacturing and development of megawatt-scale energy storage projects.







### Geology and Mining

Bushveld has one of the largest, high-grade primary vanadium resource bases in the world. The Company's vanadium resource base currently consists of three mineral assets: Vametco, Brits and Mokopane. Together, the three deposits constitute a 550 Mt (100 per cent basis) JORC-compliant resource, including 76 Mt (100 per cent basis) of JORC-compliant reserves. The resource vanadium grades are some of the highest primary grades in the world. These high-grade deposits are located on the Bushveld complex, which hosts the world's largest primary vanadium resources.

Bushveld Minerals seeks to establish a portfolio of vanadium resources for future development in potential partnerships as the supply deficit deepens and it becomes clearer that primary production is key to addressing this shortfall.



### Processing

Bushveld's asset strategy focuses on identifying underutilised and constrained processing infrastructure that can be made more efficient and expanded. The attraction of brownfield processing facilities lies in the potential for significant reductions in capital expenditure and lead-time to achieve production, compared to new build options. This strategy led to Bushveld's purchase of Vametco in 2017, which provided the Company with a solid platform to expand its vanadium production base. Further expansion included the acquisition of Vanchem, concluded in November. These two plants together give Bushveld processing infrastructure with the potential to significantly increase its share of the vanadium market while remaining one of the lowest-cost producers. Our vanadium product portfolio is diverse and includes Nitrovan, ferrovandium, vanadium oxides, electrolyte and vanadium chemicals. These vanadium products are marketed to steel manufacturers, chemical and battery companies around the world.



### Energy Storage

Bushveld Minerals has identified the fast-growing energy storage market as a key and attractive downstream industry where vanadium-based battery systems have the potential to take a significant share. Through our subsidiary Bushveld Energy Limited, we are actively driving adoption of VRFBs in the global energy storage industry. Bushveld Energy's business model extends across three pillars: electrolyte manufacturing; investment into VRFB Manufacturing; and battery deployment and project development.

According to Navigant Research, global stationary energy storage demand is forecast to grow to 100 GWh in annual deployments by 2027. A mere 10 per cent share of this market by VRFBs would see VRFB deployments of 10 GWh per annum by 2027. Since a 1 GWh VRFB system requires approximately 5,500 mtV, or five per cent of 2019 annual global vanadium production (circa 111,225 mtV<sup>1</sup>), this could add up to 55,000 mtV to annual vanadium demand by 2027. Navigant Research forecast that flow batteries could account for up to 18 per cent of the US\$50 billion<sup>2</sup> energy storage market by 2027, representing nearly US\$10 billion in revenue.

For these reasons, Bushveld pursued a downstream integrated business model through Bushveld Energy to:

- Exploit the rapidly growing multi-billion-dollar commercial opportunity that the energy storage industry presents, through the adoption of VRFBs;
- Become a key player across the VRFB supply chain through electrolyte production, investment in VRFB manufacturing and original equipment manufacturers, and megawatt-scale energy storage project development;
- Strengthen and diversify vanadium demand beyond the steel sector and create exposure to a high growth market, which the Company's upstream assets are well positioned to supply;
- Reduce volatility of Bushveld's revenues and profitability, as energy storage exhibits lower market volatility than commodity markets and provides an industrial hedge to the vanadium price; and
- Achieve higher valuation multiples for our business, as energy and diversified listed companies carry higher earnings multiples than pure miners.

## Business Model continued

### Impact of policy environment

Developments in the global and South African policy environment reinforce Bushveld Minerals' integrated strategy and the opportunities it creates for the Company.



#### Global policy

The energy transition towards greater electrification and away from fossil fuels in favour of renewable energy continues to accelerate. Its progress increases the need for vanadium and demand for stationary energy storage in the global energy mix.

The climate-change agenda increasingly has teeth through both punitive policies and incentives to drive de-carbonisation by many governments. This has driven increased deployment of renewable energy to decarbonise electrical power systems. It is also enabling the shift in transportation toward electrically powered vehicles.

More recently, policy impetus is shifting from being government mandate to being driven by sound commercial motivations. Mounting stakeholder pressure is leading many investors and corporations to adapt their Environmental, Social, and Governance policies to incorporate decarbonisation and sustainability. In addition, the rapidly falling cost of renewable and distributed electricity generation, such as solar photovoltaics ("PV"), is making self-supply of electricity increasingly more cost effective.

All of these policies drive the global business case for vanadium because of its impact on sustainability, from improving the strength to weight ratio of steel, to reducing NOx emissions as a catalyst, to enabling greater renewable energy penetration through long-duration energy storage.



#### South African policy

In South Africa, the "just" energy transition, has the potential to revitalise the mining industry. It has a unique opportunity to build an integrated value chain strategy around some of the critical metals used in energy storage. The government is starting to visualise that such a strategy should go beyond just taking advantage of South Africa's large and high-grade resources. It can extend to developing an entire industry around energy minerals to maximize South Africa's share of energy transition value chains. South Africa already has significant metallurgical infrastructure that can be leveraged to create or expand the downstream capabilities required. It also has metallurgical expertise and Research and Development platforms that can be utilized more extensively.

Some progress can be seen in the Integrated Resource Plan ("IRP") 2019, which presents excellent news for energy storage in South Africa. It includes a dedicated allocation for storage, calling for over 2,000 MW of new capacity over the next 10 years. The upside for storage is even greater, as it could be co-located for other technologies, including nearly 15,000 MW of wind, 6,800 MW of solar PV, and over 4,000 MW of distributed and embedded generation. These numbers still pale in comparison to global storage forecasts of 100,000 MWh in annual deployments by as soon as 2027 and a US\$600 billion industry by 2040<sup>3</sup>. Nevertheless, as one of the earlier movers, South Africa is poised to create a beachhead in the still nascent energy storage industry.

Overall, these efforts evidence how the South African government, including the newly combined Department of Mineral Resources and Energy, supports and incentivises domestic beneficiation of extracted minerals into higher value products, with even greater potential going forward. In this manner, the Bushveld Minerals' integrated vanadium strategy very closely aligns with the national strategy of mineral beneficiation.

1 Source: Roskill, Vanadium Outlook to 2029.

2 Source: Navigant Research.

3 Source: Bloomberg New Energy Finance.

### Unique positioning

All of these factors allow Bushveld Minerals to maximise the Company's share of the vanadium value chain and underscore our unique positioning to unlock this value, which includes:

- Large high-grade primary resource base;
- Low-cost, scalable primary processing infrastructure with capacity to grow production by almost three-fold over the next five years;
- Diverse vanadium product offering, including low capital intensity of further downstream products, such as vanadium electrolyte;
- Deep local knowledge of energy markets, enabling us to secure large-scale energy storage mandates; and
- Alignment with South Africa's policy environment, which supports mineral beneficiation and large-scale deployment of stationary energy storage systems.

# Vanadium Market Overview



## About vanadium

Vanadium is a grey, soft and ductile high-value metal with several unique characteristics that position it strongly in the steel, alloys and chemicals sectors.

Vanadium feedstock is derived from three sources: co-production, primary production and secondary production. In 2019, approximately 90 per cent of vanadium was recovered from magnetite and titanomagnetite ores, either from co-production or primary production

- **Co-production** derived from iron processed for steel production remains the main source of vanadium, accounting for 71 per cent of 2019 global supply<sup>1</sup>;
- **Primary production** involves salt roasting, water leaching, filtration, desilication and precipitation through a salt roast method. It accounted for 18 per cent of global supply in 2019<sup>1</sup>;
- **Secondary production** of vanadium is the recovery of material from fly ash, petroleum residues, alumina slag, and from the recycling of spent catalysts used in some crude oil refining. It accounted for 11 per cent of global supply in 2019<sup>1</sup>.

In 2019, global vanadium production increased by 15 per cent year-on-year to 111,225 mtV<sup>1</sup>. This increase was supported by higher slag production in China (which increased by 19 per cent year-on-year), driven by:

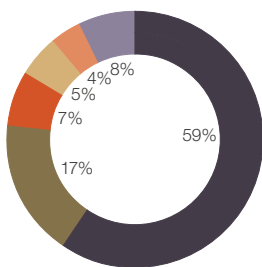
- increased crude steel production. China produced an all-time peak of 996 Mt, representing a seven per cent year-on-year increase; and
- high seaborne iron ore prices (in 2019 the average iron ore price was US\$93.48/mt<sup>2</sup>). As a result, steel mills used more domestic vanadium titaniferous magnetite ore.

Vanadium production in the rest of the world increased moderately across all forms of production.

China is the world's top vanadium producer, with 59 per cent of global vanadium supply in 2019. Most of its vanadium was derived from co-production. Russia is the second-largest producer, accounting for 17 per cent of 2019 global supply. South Africa is the third-largest producer, with seven per cent of global vanadium supply in 2019. Most of its vanadium was derived from primary production from Bushveld Minerals and Glencore.

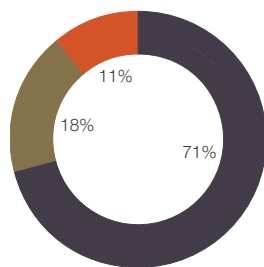
The most traded vanadium products are vanadium pentoxide and ferrovandium. Vanadium pentoxide is commonly produced through the treatment of magnetite iron ores, vanadium-bearing slags and secondary materials. It can be used directly in some non-metallurgical applications and in producing vanadium chemicals. It is also used as an intermediate product for the production of ferrovandium, the vanadium alloy used as a strengthening agent in manufacturing high-strength steel

2019 global vanadium production by country



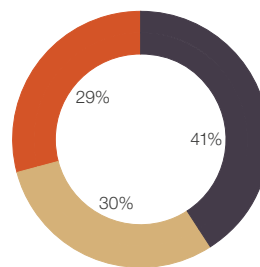
■ China ■ Russia ■ S Africa  
■ Brazil ■ USA ■ Other\*

2019 production by source



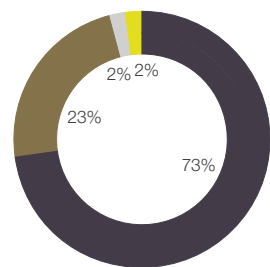
■ Co-production ■ Primary  
■ Secondary

2019 primary production by country



■ China ■ Brazil ■ S Africa

2019 co-production by country



■ China ■ Russia  
■ India ■ New Zealand

\* Other includes: Austria, Belgium, France, Germany, India, Japan, South Korea, Netherlands, New Zealand, Taiwan and Vietnam



**Vanadium Market Overview** continued

**Vanadium Market fundamentals**

**Supply**

While co-production accounted for the majority of global vanadium feedstock supply in 2019, it continues to face significant constraints, including high input and processing costs where producers have no leverage on steel prices, and environmental-related restrictions that adversely impact producers' competitiveness.

In 2019, global vanadium feedstock production totalled 111,225 mtV, exceeding the previous peak of 101,791 mtV recorded in 2014, before Evraz Highveld ceased operations<sup>1</sup>.

Most of the volume, on a unit basis, came from Chinese slag producers whose production of slag increased as a consequence of greater steel production. This absolute steel production increase has seen Chinese co-producers operate at near capacity, limiting the scope for further production growth.

The fastest growth in supply, however, has come from primary production, which has grown by over 50 per cent in just two years. It increased from just under 13,000 mtV and 14 per cent of the market in 2017 to nearly 20,000 mtV and 18 per cent of the market in 2019. The growth has been led by price-elastic primary producers in South Africa and Brazil increasing their output in response to improved vanadium prices and, to a lesser extent, by opportunistic stone coal production, which accounted for about nine per cent of China's production.

This growth in the market share of primary suppliers at the expense of co-producers may appear modest. However, it may be part of a longer-term trend of decoupling vanadium from steel production. Historically, vanadium supply and demand has relied upon or been coupled with steel supply and demand, respectively. The inelasticity of vanadium-producing steel plants to the vanadium price is one example of this coupling that contributes to vanadium's price volatility. With growth in primary production of vanadium, the dependency of vanadium supply from steel is starting to fall or decouple. The same trend would be likely to follow in vanadium demand, if new uses of vanadium continue to grow faster than steel demand, such as in energy storage applications.

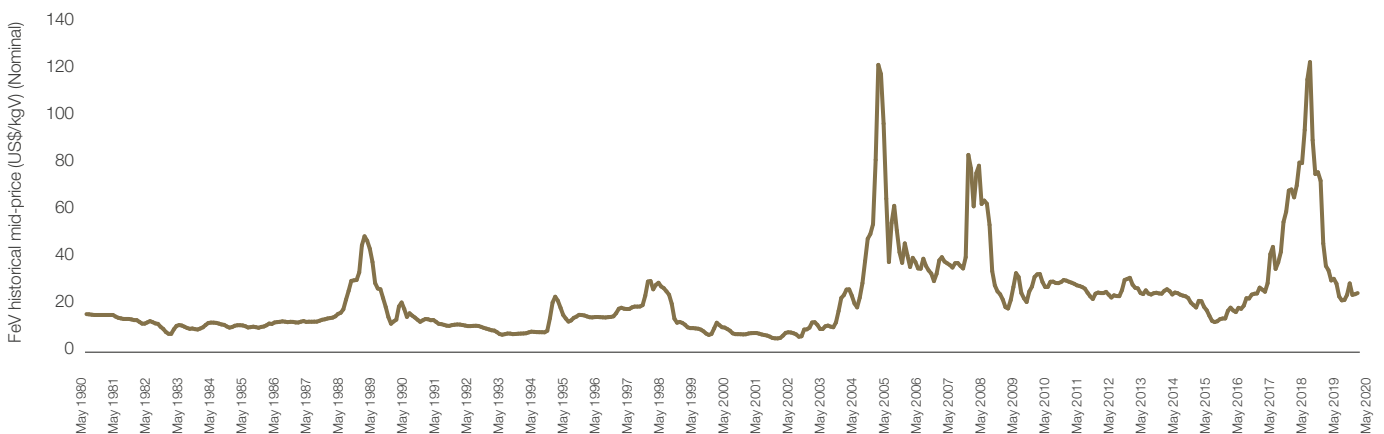
Despite the significant increase in vanadium slag production, several efforts by the Chinese government to rationalise its steel industry and cut pollution may impose further constraints on vanadium co-production steel plants. These initiatives include the reduction

of excess steelmaking capacity targeting highly polluting high-cost plants, and the conversion of more than 200 Mtp.a. of blast furnace operations to electric arc furnace technologies, which will increase the role of scrap iron in steel making and reduce the overall demand for iron ore. Declining domestic iron ore supply and iron ore quality along with environmental restrictions on both steelmakers and co-product vanadium producers can be expected to see a greater reliance on hematite (non-vanadium bearing) iron ore for steel making among co-producers, which will limit vanadium slag production growth. Stone coal production, meanwhile, will continue to be limited by environmental restrictions. The result is a constrained growth outlook for Chinese vanadium production from co-producers, which are already operating at near capacity, and stone coal vanadium producers, a constraint exacerbated by the ban on vanadium slag imports into China.

Secondary production is poised to increase supply in the medium term, as a result of the newly-implemented International Maritime Organisation ("IMO") 2020 regulations that require the use of more refining catalyst. However, it remains a higher-cost form of production than primary and co-production. The new supply could either displace projects with weaker economics or help meet a growing deficit that would almost certainly result from greater VRFB uptake in the absence of which a larger and more durable surplus could be realised. Secondary production is limited, not by processing capacity, but by both the availability of the necessary feedstock and the high costs of production. Supply of secondary materials is largely in the form of spent catalysts associated with the processing of crude oils and oil sands, the manufacture of various acids, ash and residues from the combustion of oils and coals, and some residues from alumina production, particularly in India.

Supply growth can also be considered across three categories: capacity expansions of current producers, restarts of production plants that had been mothballed, and greenfield project development. Capacity expansions have the highest probability of realisation, with the lowest capital and quickest path to production. According to Roskill, this category could add as much as 5,000 mtV in new supply by 2029. Restarts are expected to add a further potential 4,000 mtV – 12,000 mtV in new supply by 2029. New greenfield projects face the most significant hurdles. Most of the recent greenfield projects that have been announced for development are of a co-production or multi-commodities nature, suffer from relatively low grades and require significant capital and a relatively stable and higher price outlook than recent prices indicate.

Ferrovandium Price: May 1980 – May 2020



Source: London Metal Bulletin price as at 29 May 2020.

## Demand

Total vanadium demand is dominated by the steel industry. It accounted for 92 per cent of total demand in 2019 and will continue to dominate vanadium demand in future.

Global vanadium consumption rose by an estimated 6 per cent in 2019 to 111,442 mtV, supported by greater compliance with the new high strength rebar standards introduced by the Chinese government in November 2018. The new rebar standards, introduced to improve construction safety standards, regulate the characteristics of high strength reinforcing bars and impose requirements to use micro-alloys in manufacture of rebar. For example, grades 3, 4 and 5 rebars require approximately 0.35 kgV, 0.6 kgV and 1 kgV respectively to meet the new standards.

The new standards were introduced largely to outlaw the quenching and tempering techniques employed by Chinese rebar manufacturers to avoid addition of micro-alloys. As a consequence of these quenching and tempering techniques, China's vanadium consumption decreased between 2014 and 2016, after growing at twice the rate of steel production growth over the preceding 4 years.

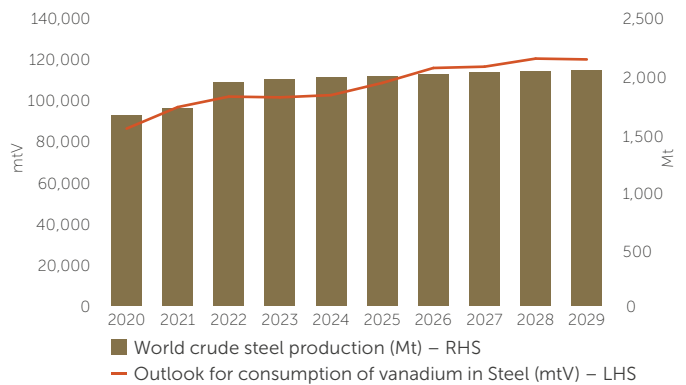
Vanadium consumption from rebar rose by 28 per cent in 2019. The increase in consumption was primarily driven by larger rebar volumes in China as well as increased intensity of use of vanadium in steel from 0.052 kgV/tonne of steel in 2018 to 0.054 kgV/tonne of steel in 2019. China's crude steel production rose 7.3 per cent year-on-year and rebar output surged 19 per cent year-on-year. In addition, continued growth in vanadium demand from energy storage would increase demand even further.

Going forward, it is forecast that vanadium demand in the steel market will grow at a Compound Annual Growth Rate ("CAGR") of approximately 2.7 per cent<sup>1</sup> through to 2029, with global vanadium demand reaching approximately 138,000 tonnes by 2029<sup>1</sup>. Although forecasts for Vanadium Redox Flow Batteries ("VRFBs") vary, they indicate that demand from this segment could increase vanadium demand by an additional six per cent per annum. Longer-term demand will be even greater. For example, the World Bank Group forecasts that by 2050 vanadium demand from energy storage alone could consume nearly twice the 2018 global vanadium production. While some forecasts are for flow batteries to capture up to 18 per cent of the stationary energy storage market by 2027<sup>3</sup>, even a 10 per cent market share by VRFBs would equate to 55,000 mtV of demand, compared with ~2,000 mtV consumed in 2018.

Thus, even as vanadium demand will continue to be underwritten by the growing intensity of use of vanadium in the steel market, the energy storage industry is expected to offer significant demand upside.

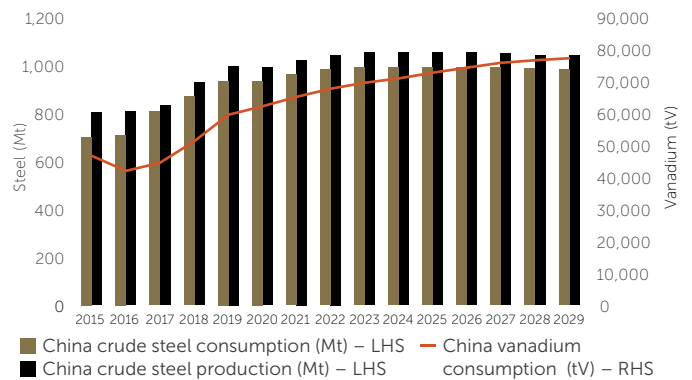
Developed economies such as Europe, Japan and North America have a higher vanadium intensity than developing countries, with China's surpassing the world average intensity in use, supported by enhanced compliance with rebar standards.

### Steel production vs consumption



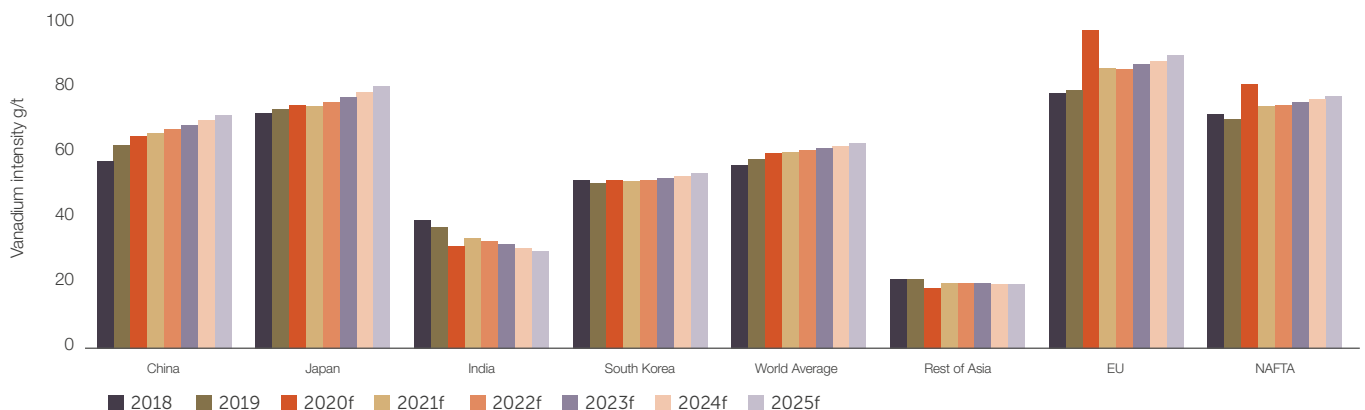
Source: Roskill, Vanadium: Outlook 2029, World steel association.

### China Crude Steel and Vanadium



Source: Roskill, Vanadium Outlook to 2029.

### Vanadium Intensity of Use (2018-2025)



Source: Roskill, Vanadium: Outlook 2029.

## Vanadium Market Overview continued

### Vanadium market balance

Supply and demand dynamics point to a potential structural net deficit. Supply is concentrated and constrained as:

- Over 70 per cent of vanadium comes from co-production, which is driven by steel and iron ore fundamentals;
- Co-production is primarily driven by steel and iron ore market dynamics rather than vanadium fundamentals, and co-producers are currently operating close to full capacity. China and Russia accounted for 76 per cent of global supply in 2019. In China, capacity utilisation from slag producers was estimated at 80 to 90 per cent in 2019, with the top five producers operating close to full capacity. Russia was also operating close to full capacity, at approximately 90 per cent;
- The steel industry in China has been increasingly relying on imported hematite iron ore, which is non-vanadium bearing;
- Over the longer term, Chinese vanadium production will be constrained by the decline in domestic iron ore supply and iron ore quality, coupled with environmental restrictions on steelmakers, co-product and stone coal vanadium producers, as well as the ban on vanadium slag imports;
- Importantly, with most vanadium co-producers, whose economics are primarily driven by steel economics, operating at near full capacity, the ability of co-producers to add new supply volumes to the market is severely curtailed;
- Lower vanadium prices limit the advent of new greenfield production due to more funding challenges, while also discouraging high-cost, low-grade primary production, such as stone coal. Furthermore, with lower vanadium prices, a historically volatile vanadium price and a majority of greenfield new vanadium projects being high capex co-production plants, the scope for significant greenfield production capacity is even more limited.

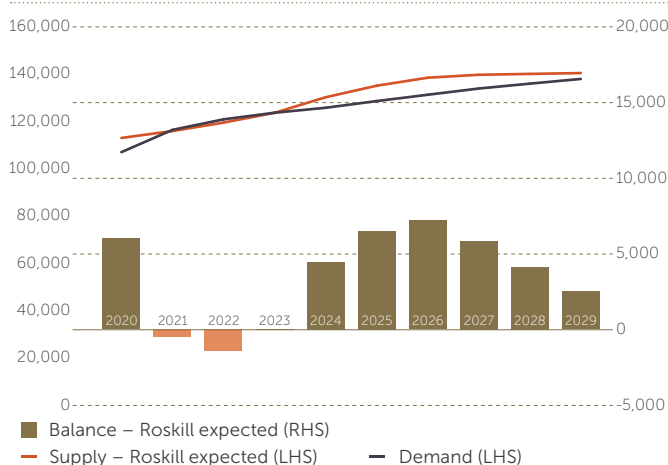
Growing demand is underpinned by higher intensity of use of vanadium in steel, which is expected to rise to 0.063 kgV by 2030 compared with 0.054 kgV in 2019. China will drive most of the increase. On top of this, demand for vanadium from energy storage will continue to grow from a base of 2,000 mtV in 2018. The rate of growth from this baseline will have a significant influence on how quickly and to what extent this new demand source puts pressure on the global market.

The global vanadium market has faced a supply deficit since 2015, after a period of oversupply. The deficit encouraged increased output from existing producers, as can be seen by growing output and market share from primary producers. These miners are economic at both prevailing and long-term forecast vanadium prices and were able to increase production at their facilities on a lower-cost, brownfield basis.

According to Roskill, the vanadium market will move into a short-term surplus in 2020 as current ex-China steel mill shutdowns continue due to the Covid-19 pandemic. The market deficit is forecast to return between 2021 and 2023, thereafter moving back into surplus, as new supply comes on stream. Roskill applies a probability factor to new vanadium production under development, forecasting an increase in supply of 27,000 mtV between 2020 and 2029. Furthermore, Roskill takes a conservative view on vanadium consumption in energy storage (through VRFBs), forecasting growth in demand between 2020 and 2027 from 500 mtV to 1,463 mtV. (The Rongke Power 200 MW/800 MWh VRFB project in Dalian, when complete, is expected to consume about ~5,000 mtV of vanadium.)

A review of contributions to supply growth from capacity expansions, restarts and new greenfield projects (the vast majority of which are expensive co-production plants) paints varying scenarios of vanadium market balance. If supply forecasts are based on existing production

Vanadium market balance (mtV)  
Scenario 1: Applying Roskill expected new supply



Source: Fastmarkets, 2020; Roskill Vanadium Outlook to 2029.

and announced capacity expansions alone, the market can be expected to move into a deeper deficit, reaching 12,600 mtV by 2029. Taking capacity expansions and project restarts into account, the deficit is reduced but still significant at ~8,600 mtV by 2029.

Bushveld Minerals believes, in line with several energy-focused research firms, that the potential vanadium demand from energy storage applications could be significant and result in a deeper vanadium deficit than suggested above.

Prevailing vanadium prices make it more attractive for emerging uses, such as energy storage. Even at higher vanadium prices innovations such as vanadium leases, which take advantage of the non-degrading and thus re-usability characteristics of vanadium electrolyte will continue to support VRFB deployments. Energy storage, while a nascent sector, is growing rapidly, expanding by 50 per cent per annum globally<sup>3</sup>. Similarly, while current vanadium consumption by energy storage is low at just over 2,000 mtV in 2018, the higher growth rate of this sector could drive significant new demand for vanadium.

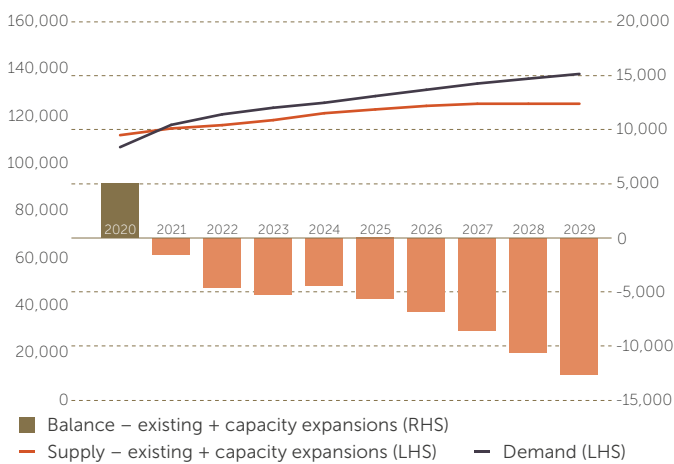
This large upside from energy storage is a key rationale for Bushveld Minerals' vertically-integrated business model, along with the positioning of the Company to unlock two critical hurdles for VRFB adoptions – vanadium security of supply and input costs. It will also provide a natural hedge against vanadium price volatility, with greater value created at high prices in mining and processing and at low prices in energy storage. Through Bushveld Energy's activities in electrolyte component manufacturing, VRFB investment and energy storage project development, the Company can support this demand growth while capturing significant value from its upstream mining and processing and downstream battery-related businesses.

Structural advantages enjoyed by low-cost primary vanadium producers (low capex and shorter timeframes for capacity expansion and the ability to leverage positive cash flow margins even in a low vanadium price environment) allow them to scale up production on a brownfield basis. This positions them to respond to any market deficits.



## Vanadium market balance (mtV)

Scenario 2: Existing supply + Capacity expansions



Source: Bushveld Minerals, Roskill Vanadium Outlook to 2029.

## Vanadium price

The vanadium price rose to a high of US\$127/kgV in November 2018, before settling to trade at an average of US\$41.6/kgV in 2019. The price correction in 2019 was influenced by a number of factors, including:

- Introduction of the new rebar standard in China from November 2018, which was enforced gradually, rather than immediately;
- Increased ferroniobium imports into China, allowing for substitution of vanadium in rebar when vanadium prices are approximately 3x higher;
- Increased slag production in China due to high seaborne iron ore prices;
- Some opportunistic supply additions from stone coal producers in response to high vanadium prices.

During the second half of 2019:

- Vanadium recovered market share in China, as the softening in the vanadium price relative to ferroniobium meant vanadium offered several advantages over ferroniobium in steel applications, and reduced substitution with ferroniobium;
- The softening in the vanadium price reduced the incentive for stone coal production;
- Increased enforcement of the new rebar standard in the second half of 2019 in China supported demand growth, making China a net vanadium importer in 2019.

## Covid-19 impact on outlook

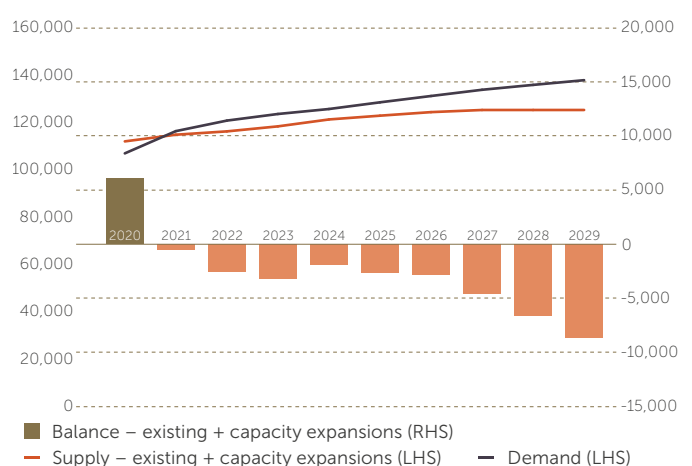
Covid-19's impact on the global economy is evolving. Consensus, however, is that the world will experience an economic recession. The questions are how deep, for how long and what shape the recovery will assume.

In the first quarter of 2020, Chinese steel production rose by 1.2 per cent year on year<sup>4</sup>. The vanadium price started to recover during the first quarter of 2020, however the global Covid-19 pandemic resulted in price consolidation and could cause continued short-term volatility.

Governments around the world have announced different measures to revive their economies after the impact of Covid-19. The Chinese government took measures to stimulate demand recovery in late March, two months after the initial lockdown of Wuhan. It announced that it will support its economy through infrastructure investment and will use this tool to stimulate growth in 2020. Increased infrastructure spending would result in more steel and rebar production and

## Vanadium market balance (mtV)

Scenario 3: Existing supply + Capacity expansions + Restarts



Source: Bushveld Minerals, Roskill Vanadium Outlook to 2029.

consumption, supporting vanadium demand. This trend is already evident in the first half of 2020, as China continues to be a net vanadium importer.

The Chinese government is aiming for RMB 3.75 trillion (approximately US\$500 billion) in local government special bonds to encourage infrastructure investment. As China shifts from a manufacturing-driven economy to a service and consumption-led economy, it has set targets for information infrastructure such as 5G networks, large data centres, as well as ultra-high voltage power transmission, urban mass transit and high-speed rail, new energy and vehicle charging stations.

While China emerged from the lockdown ahead of most countries and its economy is currently normalising, other countries have gradually reopened from lockdowns since mid-May. The global steel industry is now, more than ever, dependent on the Chinese construction industry.

The World Steel Association expects Chinese steel demand to increase by 1.0 per cent in 2020 and anticipates that the benefits of infrastructure projects initiated in 2020 will carry over and support steel demand in 2021. As more than 90 per cent of vanadium utilisation is in steel manufacturing, and demand normally tracks trends in the steel market, we expect vanadium demand will remain robust in the medium- to long-term.

Furthermore, growing calls to take advantage of the waves of fiscal stimulus programmes expected in the wake of the Covid-19 pandemic to accelerate, rather than delay, the energy transition to a low-carbon energy future will provide a boon for the nascent and growing stationary energy storage industry and, with it, for VRFBs.

1. Source: Roskill, Vanadium Outlook to 2029
2. Source: Bloomberg, 31 May 2020
3. Source: Navigant Research
4. Source: Bank of Montreal, 2020

# Energy Storage Overview

Electricity's share of global energy consumption is growing rapidly. It doubled from 10 per cent in 1980 to 20 per cent today and is expected to account for about 45 per cent by 2050.

Energy storage is essential to support growth in electricity demand while enabling the world to make the transition to zero-carbon, since:

- Alternating current cannot be stored, so other solutions are required;
- Penetration of variable and decentralised renewable energy generation, such as wind and solar, is increasing rapidly, creating a greater need for balancing, time-shifting and power system optimisation;
- The transition towards a zero-carbon world is making fossil fuel-based generation and balancing technologies, such as coal, gas or oil, unbankable while stricter environmental regulation is limiting deployment of pumped hydro storage schemes.

As a result, stationary energy storage is expected to exceed 100 GWh and become a US\$50 billion market by 2027, rising to 2,800 GWh by 2040<sup>1,2</sup>.

## Trends in stationary energy storage

Stationary energy storage demand is forecast to be the fastest growing type of storage, at a rate of 58 per cent per annum and will exceed 100 GWh by 2027<sup>1</sup>. Over 90 per cent of the demand for storage to absorb renewable energy and balance the power system is forecast to be for long-duration (greater than four hours, and mostly six to ten hours). VRFBs are well-positioned to meet this need since they become relatively cheaper for long-duration applications and their water-based chemistry is inherently fire-safe. They also offer other benefits for the energy transition, such as:

- Long lifespans of 20 or more years with minimal degradation;
- Easy recoverability of vanadium from the electrolyte at the end of battery life; and
- Up to 30 per cent lower carbon dioxide intensity compared with other battery technologies.

Stationary energy storage applications include:

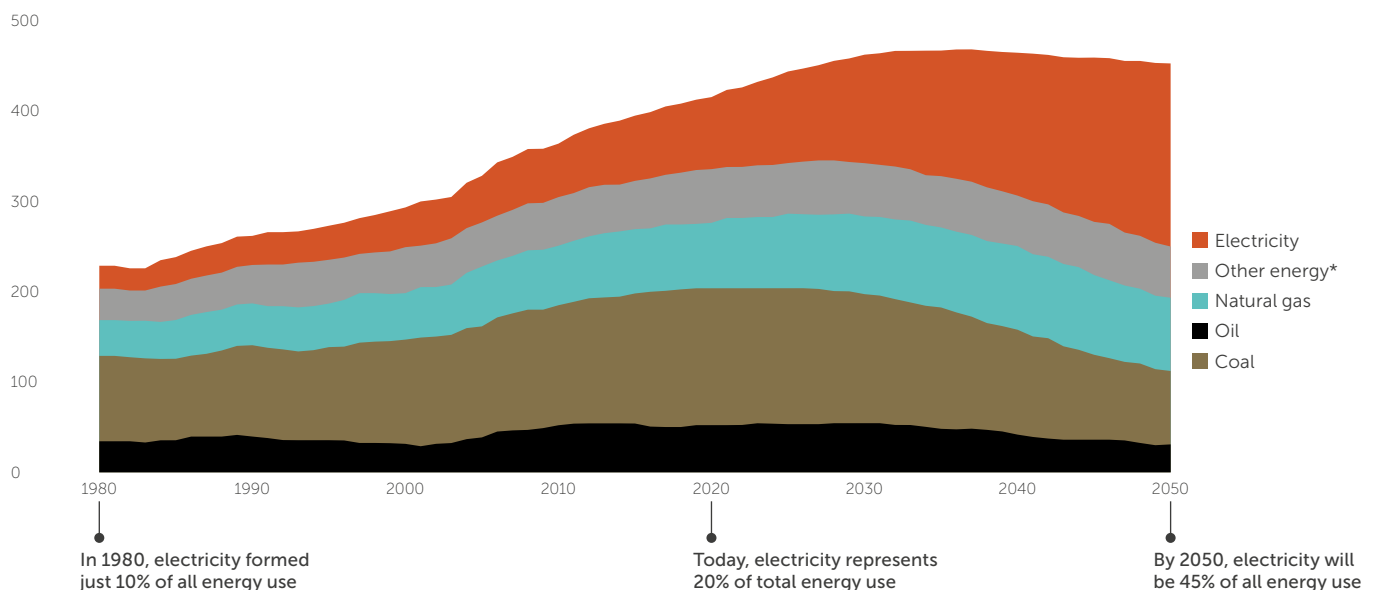
- Enhancing the stability of a power grid that uses large amounts of variable renewable energy sources;
- Smoothing a power system's load distribution by shifting power demand from high peak areas to low peak areas (load shifting);

- Storing excess power generated during off-peak periods to use during peak-demand periods; and
- Supporting remote electricity users without access to transmission infrastructure to connect to the main grid.

Evolving trends in stationary storage include:

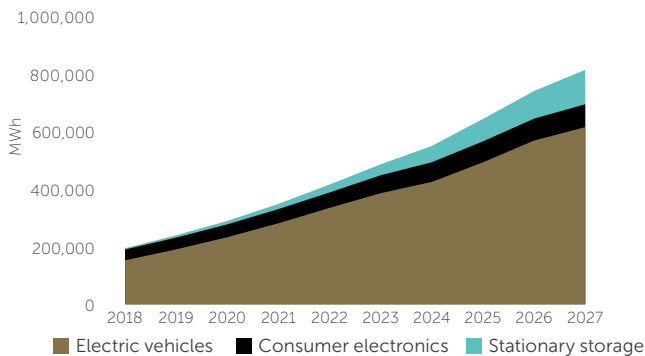
- The growing need for long-duration energy storage solutions, typically offering three to 10 hours of daily storage capacity. Long-duration applications are expected to account for up to 90 per cent of energy storage deployments by 2027 (excluding pumped hydropower). To date, most battery energy storage installations have been for short duration, i.e. 15 to 60 minutes;
- Energy storage systems are being deployed for more than one application. Traditionally, batteries have only provided frequency control, since they can respond to power fluctuations almost immediately. This is increasingly being coupled with other use cases, such as to provide system reserves and peaking capacity, to defer transmission and distribution expansion and for ancillary services; and

World energy demand by carrier, EJ/year



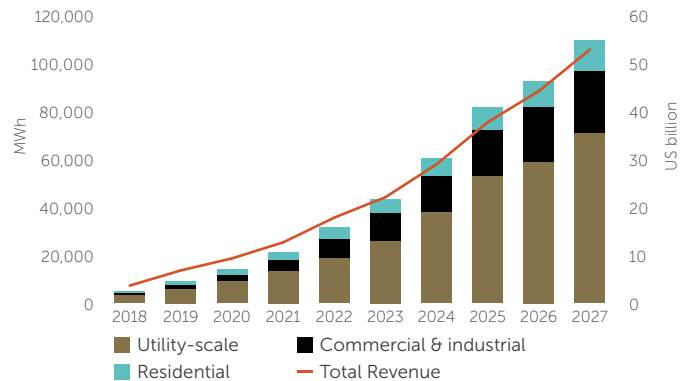
\* Other energy includes: Solar Thermal, Direct heat and Biomass. Source: DNV GL Energy Transition Outlook 2018.

Total energy storage market, MWh



Source: Navigant Research.

Annual installed stationary energy storage capacity and development revenue by market segment



Source: Navigant Research.

- In a maturing industry, the focus is shifting from pure technical and financial capability to safety. Fires in South Korea from 2017 to 2019, and numerous high profile fires in Europe and the United States at large battery sites using lithium-ion technologies provided by well-established developers and manufacturers, have highlighted the focus on safety in stationary energy storage. The potential damage and human harm from fire and smoke is significantly greater from larger stationary energy storage installations than car or computer batteries, increasing the focus on safety in technology selection.

## Energy storage opportunities in Africa

Although the energy storage market is global, Bushveld Energy has, from the outset, focused on the African market, which is traditionally underserved but offers immense growth potential.

In sub-Saharan Africa, there are over 600 million people without access to electricity, and grid infrastructure is poorly developed or weak, leaving many industries to self-supply electricity. At the same time, the continent possesses considerable potential for solar and wind generation, presenting an attractive opportunity for both the energy transition and greater use of energy storage.

Three important recent developments reinforce our African focus:

1. The World Bank Group announced a US\$1 billion programme to support the deployment of energy storage in low- to

middle-income countries. The programme is expected to mobilise a further US\$4 billion in concessional climate financing and public and private investments to deliver 17,500 MWh of energy storage in these countries by 2025.

Since typically over one-third of World Bank funding is directed towards sub-Saharan Africa, the programme could expect to deliver 5,000-6,000 MWh of storage in Africa alone, or an average of 1,000 MWh per year. Most of the storage deployed for future projects under the programme will be to ensure greater integration of renewable energy, which requires daily, long-duration storage, matching the technical and commercial advantages of VRFB technology.

2. In 2018, South Africa's power utility, Eskom, announced it intended to install 1,400 MWh of battery energy storage as part of the World Bank programme. The first phase of that programme is expected to start during 2020. The programme could propel South Africa into one of the top five energy storage markets globally. Although the structure of the programme and its projects have not yet been made public, the country's characteristic demand profile, which lasts for six hours a day and peaks twice a day, makes the economics especially favourable for long-duration, nearly limitless recycling technologies such as VRFBs.
3. In October 2019, South Africa's Department of Mineral Resources and Energy released the Integrated

Resource Plan ('IRP'), outlining the country's future electricity needs and required technologies. The IRP supports more renewable energy, especially wind and solar, and acknowledges the need to support integration of variable generation through storage technologies.

The 2019 IRP is largely favourable for energy storage in South Africa. For the first time, it included a dedicated allocation for energy storage and promises to accelerate its roll-out.

- The IRP allocates 2,088 MW of new energy storage over two tranches: 513 MW by 2022 and 1,575 MW by 2029;
- Further storage could be co-located with new renewable energy generation, such as solar photovoltaics ("PV") and wind. Solar PV is expected to add a further 6,800 MW of generation up to 2030, and wind is expected to add almost 16,000 MW of power generation in the same period;
- Embedded generation, which is uncapped for the next three years, is an opportunity for medium-sized storage (such as the Vametco mini-grid).

The inclusion of cost-effective storage in the IRP will enable South Africa to advance its power sector into the future. In addition, the South African Renewable Energy Independent Power Producer Procurement Programme has been restarted and will continue to add renewable energy to the grid, creating opportunities for long-duration battery storage, either as stand-alone facilities or co-located with solar or wind generation.



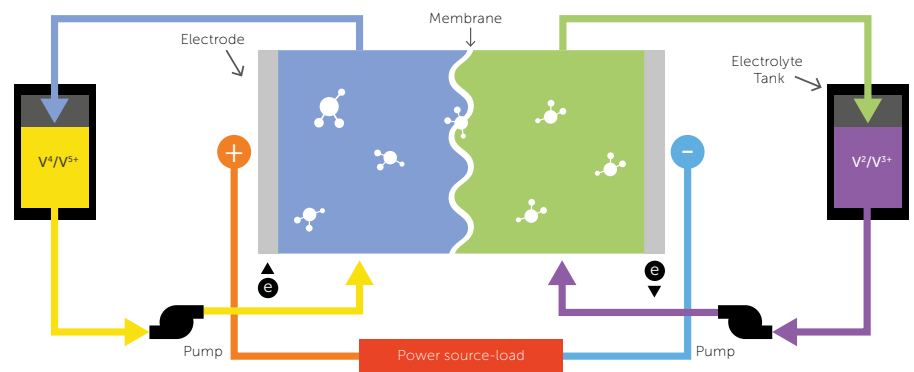
## Energy Storage Overview continued

### Vanadium Redox Flow Batteries

VRFBs are well positioned to take a significant share of the stationary energy storage market, owing to unique features that give them an edge in large-scale, stationary and long-duration energy storage applications.

These features include:

- **Long lifespan cycles:** ability to repeatedly charge/discharge over 35,000 times for a lifespan of over 20 years;
- **100 per cent depth of discharge** without material performance degradation is unique to VRFBs;
- **Low cost per kWh** when fully used at least once daily makes VRFBs today cheaper than li-ion batteries;
- **Safety**, with no fire or smoke risk from thermal runaway;
- **Sustainability**, with a 30 per cent lower carbon footprint than li-ion batteries. 100 per cent of vanadium is re-usable on decommissioning of the system;



- **Flexibility** that allows for capturing the multi-stacked values of energy storage in grid applications;
- **No cross-contamination**, with only one battery element, which is unique among flow batteries.

The lack of cross-contamination or degradation of the electrolyte, as well as the simple architecture of the VRFB that allows electrolyte to be removed and re-used, creates an opportunity to devise innovative financial solutions such as electrolyte rental. These solutions will accelerate VRFB adoption by reducing the upfront capital costs while creating new economic opportunities for vanadium producers.

### VRFBs: challenges and opportunities

The VRFB market opportunity is attractive, not only because it diversifies and underscores vanadium demand, but also because it offers an attractive commercial opportunity. For this purpose, Bushveld Minerals established Bushveld Energy to exploit the multi-billion-dollar commercial opportunity presented by the energy storage industry.

According to Navigant Research, global stationary energy storage demand is forecast to grow to 100 GWh in annual deployments by 2027.

VRFBs must overcome two key hurdles to achieve sustainable success: security of supply and stability of vanadium input costs.

- **Security of supply:** should VRFBs achieve the 18 per cent Navigant Research forecast share of the annual stationary energy storage deployments of 100 GWh by 2027, it would indicate a vanadium demand of over 80,000 mtV for energy storage alone. The ability to guarantee supply of vanadium for VRFBs will be key to the success of these systems;
- **Stability of vanadium input costs:** vanadium can range between 30 and 50 per cent of the cost of a VRFB system, depending on the battery size and

vanadium price. The adoption of VRFBs depends on the relative and absolute vanadium price. Low-cost primary producers with significant production capacity are well positioned to address price volatility by potentially providing long-term, stable pricing. Furthermore, taking advantage of the VRFB chemistry and never selling the vanadium to a customer but rather renting it for the life of the VRFB or project can materially impact the cost-competitiveness of VRFBs, while guaranteeing re-circulation of the vanadium.

Bushveld Minerals is uniquely positioned to tackle these hurdles, owing to its large, high-grade resource base and low-cost processing facilities and capitalise on opportunities from rapid growth in vanadium chemicals demand and VRFB deployments.

In 2019, Bushveld Energy made significant progress in all its key areas of focus. It advanced development of electrolyte production capacity, deployed its electrolyte rental model, started to create its project pipeline eyeing large energy storage mandates, installed its first VRFB and launched the VRFB Investment Platform as part of its strategy of developing partnerships for VRFB assembly/manufacturing.

### Covid-19 impact on outlook

Covid-19 has impacted the 2020 outlook for energy storage and VRFBs, but we do not believe it has impacted the outlook for 2021 or later years. Investment and construction have slowed in some regions for all types of energy projects, however, current thinking is that there will be a fairly rapid rebound. Most projects in energy storage systems continue to advance, including the Eskom Energy Storage Systems tender. Due to a reduction in electricity consumption and less pollution, especially in Asian countries, there is a sense that Covid-19 may accelerate the energy transition, as some coal and gas plants may go bankrupt due to lost revenues over this time. This could result in a faster deployment of storage systems.

Overall, our view of the situation is consistent with a recent assessment by HIS Markit "despite a subdued year in 2019 and a challenging start to 2020 caused by the Covid-19 outbreak, the outlook for energy storage remains strong, with cumulative installations of grid-connected battery energy storage predicted to reach 64.3 GW/179 GWh in 2025".

1 Source: Navigant Research.

2 Source: Bloomberg new Energy Finance.



## Our Strategy

# 2019 Track Record:

## we have delivered on our commitments

## Performance against our 2019 objectives



### Health and Safety highlights

- Vametco reported zero fatalities in 2019, one lost-time injury and no new occupational health diseases cases were recorded in 2019;
- Vanchem reported zero fatalities, no lost-time injuries and no new occupational health diseases since Bushveld Minerals took control in November 2019.



### Strategic highlights

- Completed the acquisition of Vanchem, a primary processing facility;
- As part of its strategy to improve its financing structure, the Company secured ZAR375 million in debt facilities from Nedbank, in the form of a ZAR250 million term loan and a ZAR125 million revolving credit facility;
- In line with the Company's strategy to simplify its balance sheet and corporate structure, Bushveld Minerals agreed an early settlement of the Yellow Dragon Holdings earn-out for US\$3.6 million, which was payable under the Bushveld Vametco Limited acquisition agreement.



### Financial highlights

- Revenue of US\$116.5 million, a 40 per cent reduction relative to 2018 (2018: US\$192.1 million) as a result of 34 per cent decline in the average realised price;
- EBITDA of US\$32.6 million, a 68 per cent decrease relative to 2018 (2018: US\$101.2 million) due to decrease in vanadium prices partly offset by a reduction in cost of sales;
- Gain recognised on bargain purchase of US\$60.6 million for the Vanchem acquisition, completed at fair value consideration of US\$55.8 million<sup>1</sup>;
- Basic Earnings per share of 5.51c (2018: 2.90c). Underlying Earnings per share (excluding gain on bargain purchase) of 0.12c;
- US\$34.0 million cash and cash equivalents as at 31 December 2019 (includes ZAR250 million term loan) (2018: US\$42.0 million).

1. Refer to note 8 for details on the fair value purchase price

#### Vametco

- Record annual production of 2,833 mtV in the form of Nitrovan, in line with guidance of 2,800 mtV to 2,900 mtV, representing an 11 per cent increase relative to 2018;
- Production cash cost of US\$18.11 kgV, a five per cent reduction relative to 2018, beating 2019 guidance of US\$18.90/kgV to US\$19.50/kgV;
- EBITDA of US\$42.8 million for 2019, despite a 34 per cent reduction in the average vanadium price received.

#### Vanchem

- Safely started operations under Bushveld's ownership in mid-November 2019;
- A total of 98 mtV, in the form of ferrovanadium and vanadium chemicals, was produced during the first period under Bushveld Minerals' control.

#### Bushveld Energy

- Launched the Vanadium Redox Flow Battery ("VRFB") Investment Platform in line with our strategy for partnering with VRFB companies;
- Executed our first VRFB Investment Platform investments, including a US\$5 million strategic interest in Invinity Energy Systems plc<sup>2</sup>, and the acquisition, as part of a consortium, of a 24.9 per cent stake in Enerox GmbH;
- Implemented our first electrolyte rental contract with Avalon Battery Corporation;
- Received Environmental Authorisation for the construction of a 200 MWh vanadium electrolyte production facility in South Africa;
- Installed our first VRFB in South Africa at the Eskom Research and Testing facility.

2. US\$5 million convertible loan in Avalon: US\$5 million in 2019 and US\$1 million in 2020.



### Operational highlights



# 2020 Outlook:

building on existing momentum to further unlock value through sustainable cost reduction and capital discipline

## 2020 objectives



### BUSHVELD MINERALS



#### Bushveld Minerals

- Committed to zero harm, with the health, safety and well-being of our employees being one of our priorities. We will continue to work to improve safety tools and behaviours across the Group.
- Maintain the necessary safety measures required in a Covid-19 constrained environment while ensuring minimal disruption to the operations.
- Committed to strengthening existing relations with labour and communities across our operations.
- The Company has made significant strides in building its organisational capacity. It will continue to do so, focusing on human capital, financial resources, the operating model, business processes and systems.

#### Bushveld Vanadium

- Implement synergies across Vametco and Vanchem as we integrate the operations;
- Focus our efforts on driving operational excellence and cost reductions at Vametco and Vanchem;
- Achieve Group production of between 3,960 mtV and 4,300 mtV in 2020, which represents an increase of between 35 per cent and 47 per cent compared with 2019.

#### Vametco

- Achieve production guidance of between 3,000 mtV and 3,200 mtV and production cash cost guidance of between ZAR257/kgV and ZAR265/kgV (US\$17.20/kgV and US\$17.70/kgV), subject to no further Covid-19 related stoppages;
- Continue the sustained improvement in production and cost reduction based on the Transformation Programme that started in 2019;
- Commence the pre-feasibility study ('PFS') for Phase 3 of the expansion project to review the timing and required investment to advance towards steady state production of 4,200 mtVp.a. The estimated capital expenditure for the PFS is ZAR4 million (circa US\$240,000);
- Complete the kiln off-gas project in order to comply with environmental regulation requirements and further increase kiln feed throughput. The estimated capital expenditure for 2020 is ZAR35 million (circa US\$2 million);
- Sustaining capital expenditure of ZAR11 million (circa US\$ 660,000).

#### Vanchem

- Achieve 2020 production guidance of between 960 mtV and 1,100 mtV and production cash cost guidance of between ZAR245/kgV and ZAR260/kgV (US\$16.30/kgV and US\$17.30/kgV), subject to no further Covid-19 related stoppages;
- Commence critical refurbishment work to enable Vanchem to continue to operate sustainably at approximately 1,000 mtV. Total 2020 critical capital expenditure is estimated at ZAR85 million (circa US\$5 million);
- Re-establish relationships with customers who historically preferred Vanchem's product suite of ferrovanadium, chemicals and vanadium oxides.

#### Bushveld Energy

##### Electrolyte

- Advance construction of the vanadium electrolyte plant, with an initial 200 MWh capacity;
- Implement additional, larger electrolyte rental contracts.

##### VRFB manufacturing

- Advance the Vanadium Redox Flow Batteries Investment Platform;
- Complete the Enerox GmbH acquisition as part of a consortium;
- Investigate the business case for South African-based VRFB assembly.

##### Deployments

- Demonstrate a business case for VRFB deployments, including delivery of the Vametco mini-grid as a funded independent power producer;
- Participate in the 2,000 MW South African Integrated Resource Plan energy storage allocation and other African projects within the World Bank's 17.5 GWh energy storage roll-out programme, including at Eskom;
- Develop partial self-supply of electricity at all Bushveld operations in South Africa to de-risk potential deterioration of the power system.



### BUSHVELD VANADIUM

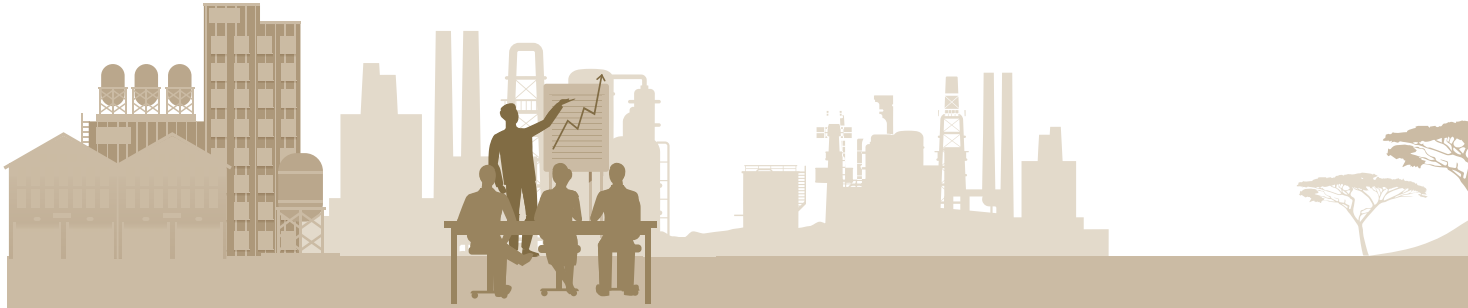



### BUSHVELD ENERGY



Our Strategy continued

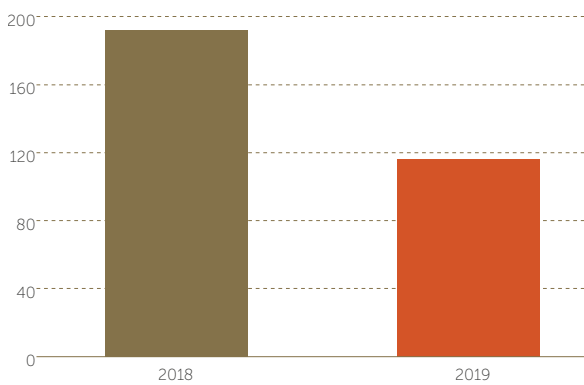
# 12-Month Indicators



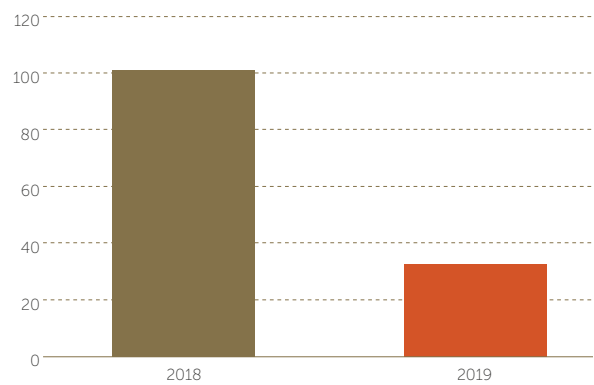
## Financial performance

Sound performance, despite a 34% fall in the average realised price.

Group revenue (US\$ (millions))



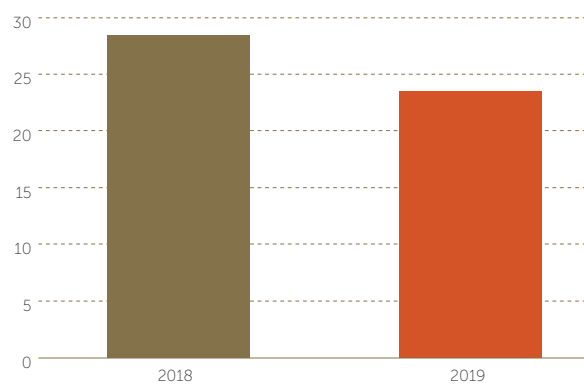
Group EBITDA (US\$ (millions))



## Safety

Vametco achieved an improvement of 19% in its Total Recordable Injury Frequency rate ('TRIF').

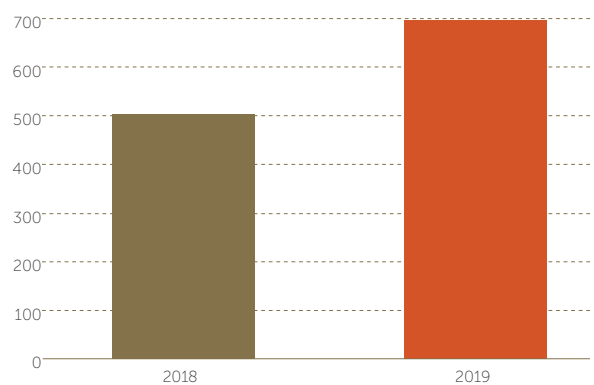
TRIF

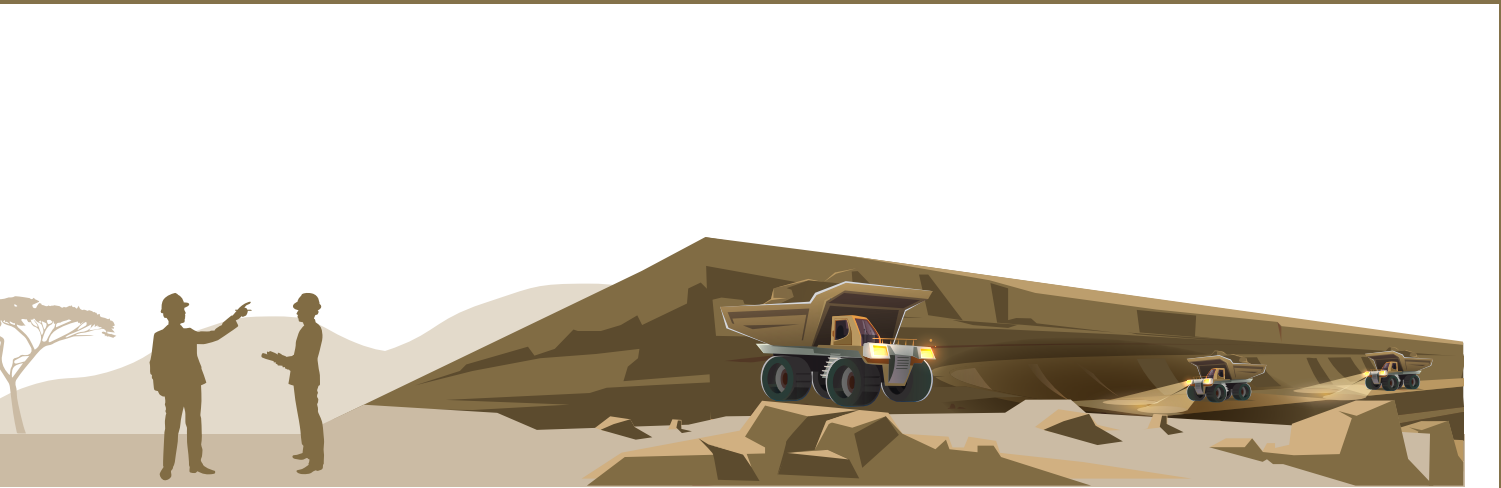


## Employees

Increased the number of employees by 39%.

Number of employees

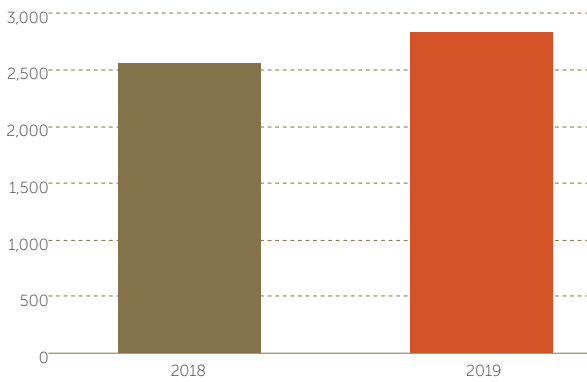




### Production

15% increase in Group production.

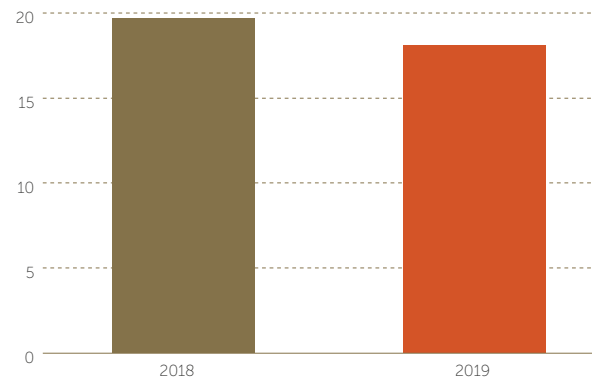
Group production (mtV)



### Production cost

Reduced Vametco's production cash cost by 5% and maintained its first quartile position on the cost curve.

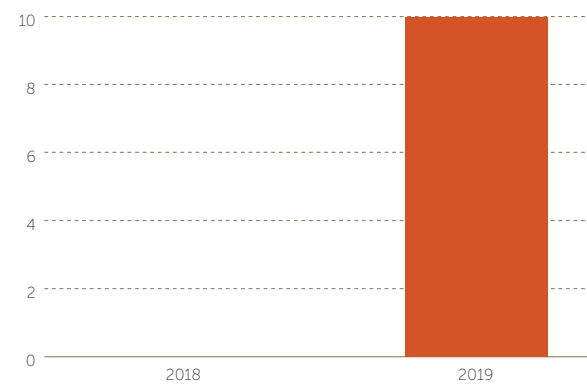
Vametco production cash cost (US\$/kgV)



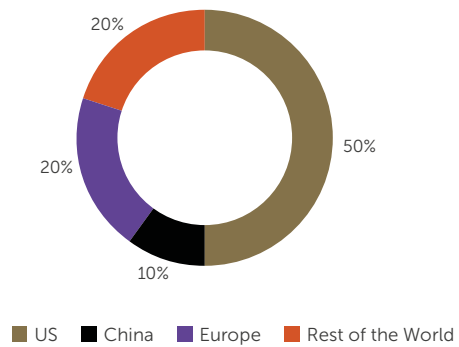
### Sales

Improved sales in China from zero in 2018 to 10% of the total in 2019, as we continued to supply to the higher-priced market.

Vametco's sales to China



2019 Vametco Sales



## Finance Director's Statement

### Tanya Chikanza

# Building a robust and resilient business

## Overview

The 2019 financial year delivered solid operational and financial performance for the business. A major feature of the Group's performance was the 15 per cent year-on-year increase in production, primarily from Vametco, to 2,833 mtV, building on the operational foundation established in 2018. We achieved sales of 2,392 mtV resulting in a carry-over of stock which will unwind in 2020.

From a market perspective, the year can be considered in two halves. In the first half, the business continued to benefit from high vanadium prices (average London Metal Bulletin ("LMB") price H1 2019: US\$56/kgV). The second half of the year, however, saw a significant decline in prices (average LMB price H2 2019: US\$27/kgV). Pleasingly, cost of sales was generally well contained during the year, and decreased by 20 percent. The Group generated Earnings Before Interest, Tax, Depreciation and Amortisation ("EBITDA") of US\$32.6 million (2018: US\$101.2 million) representing a decrease of 68 percent from the prior year, primarily due to the decline in the vanadium price. Net cash from operating activities also decreased by 50 percent to US\$22.3 million due to the decline in price. Earnings per share was 5.51c (2018 2.9c), due to the impact of the bargain purchase gain recognised in the year. The full details are outlined in note 12 of the financial statements.

Bushveld Minerals completed the acquisition of Vanchem on 7 November 2019 and assumed control of the business from this date. The results of Vanchem have been fully consolidated in the Bushveld Minerals financial statements for two months in the

2019 financial year. The accounting treatment of this acquisition is discussed below. During the year, Bushveld Minerals secured ZAR375 million in debt facilities, through its subsidiary Bushveld Vametco Alloys Proprietary Limited, with Nedbank Limited (acting through its Nedbank Corporate and Investment Banking division), a South African based financial institution, providing liquidity for the Group. Measures were taken during the year to install more financial discipline, reduce costs and follow a clear framework for allocating capital. We will continue to prioritise these measures.

## Vanchem acquisition

On 7 November 2019, Bushveld Minerals acquired 100 per cent of the Vanchem Plant from Vanchem Vanadium Products (Pty) Limited and South African Japan Vanadium Proprietary Limited, and 100 per cent of the issued shares in Ivanti Resources (Pty) Limited

for a fair value consideration of US\$55.8 million funded through a cash payment of US\$30.7 million, a convertible loan of US\$23.0 million and an additional US\$2.0 million deferred consideration. The US\$2.0 million deferred consideration represents the present value of US\$500,000 payable as part of the original agreement and a top-up for stock and working capital. The full details are outlined in Note 8 of the financial statements.

The acquisition is consistent with the Group's long-term strategy of acquiring existing, low-cost, scalable brownfield operating assets to expedite the development of its significant and high-grade resource base. The acquisition expands and diversifies Bushveld Minerals' business with the addition of another operating, low-cost, expandable production processing facility, while providing product diversification.

As guided by IFRS 3, the table below summarises the financial treatment of the acquisition:

Vanchem acquisition	US\$
Property, plant and equipment	114,668,826
Land and buildings	6,137,787
Inventories	7,480,482
Trade and other receivables	900,154
Cash and cash equivalents	10,492
Environmental rehabilitation liability	(10,382,628)
Trade and other payables	(906,727)
Provisions	(13,899)
<b>Total identifiable net assets acquired at Fair Value</b>	<b>117,894,487</b>
<b>Fair Value of Consideration</b>	<b>(55,787,885)</b>
<b>Acquisition related costs</b>	<b>(1,519,969)</b>
<b>Gain on Bargain Purchase</b>	<b>60,586,633</b>

Refer to Note 8 of the financial statements for further detail.



“

*During the year, the Group secured ZAR375 million in debt facilities, comprised of a term loan of ZAR250 million and an RCF of ZAR125 million which was subsequently drawn down in March 2020 to enhance liquidity and provide financial flexibility in light of the uncertainty arising from the Covid-19 pandemic and lockdown.”*



## Finance Director's Statement continued

In accounting for the acquisition of Vanchem as a business combination, we assessed whether Vanchem met the IFRS 3 definition of 'a business'. IFRS 3 states that "a business consists of inputs and processes applied to those inputs that have the ability to create outputs" and we have concluded that, at the date of acquisition, Vanchem had inputs (inventories and plant and equipment with installed capacity), processes (methodology, manufacturing ability, intellectual property and a skilled workforce) and the ability to produce outputs in the form of vanadium products.

IFRS 3 requires an acquirer to measure the cost of the acquisition at the fair value of the consideration paid, and measure acquired identifiable assets and liabilities at their fair values, with any excess of acquired assets and liabilities over the consideration paid (a 'bargain purchase') recognised in profit or loss immediately. As detailed in note 8,

we engaged an independent valuation expert to value the assets acquired using the cost approach, which we consider to be the most appropriate fair value measurement technique given the nature of the assets acquired and the circumstances of the acquisition.

Where a business combination results in a bargain purchase, IFRS 3 requires the acquirer to reassess whether it has correctly identified all of the assets and liabilities acquired and to review the procedures used to measure the fair values recognised at the acquisition date. We have completed this assessment and concluded that the recognition of a bargain purchase is appropriate. In coming to this conclusion we have considered the circumstances of the sale as Vanchem was in business rescue and therefore not an open market transaction, and the advantages of Vanchem which fit into the Group's diversity and growth strategy, advantages of which are disclosed in note 8.

USD). Vametco sold 50 per cent of its product to the United States, 20 per cent to Europe, 10 per cent to China and 20 per cent to the rest of the world. Vametco's average delivery period to the final customer is eight to 12 weeks. The timing of deliveries that occur on or around half-year and year-end impacts the timing and quantum of revenue recognised for commodity sales in each financial period.

Other revenue was generated from Vanchem: US\$89,000 (2018: nil) and Bushveld Energy: US\$71,000 (2018: nil). As Vanchem was only acquired in November 2019, with a startup of the plant mid-November, sales were minimal with additional material held in stock.

### Cost of sales

Cost of sales for the period amounted to US\$56.2 million (2018: US\$65.3 million). The reduction is primarily attributable to the reduction in sales volumes at Vametco for the year to 2,392 mtV (2018: 2,573 mtV).

A planned maintenance programme of 22 days in 2019 was completed as part of Vametco's improvements in equipment efficiency, reduced downtime, and operational stability. This has allowed the business to reduce the downtime planned for 2020.

Operations at Vanchem were started mid-November as production had temporarily stopped prior to our acquisition on 7 November 2019. A total of 98 mtV, in the form of ferrovandium and vanadium chemicals, was produced during the first period under Bushveld Minerals' control.

Operations were affected by the power rationing at the municipal level during the fourth quarter of 2019 at Vanchem, however, it did not materially impact production. The Vametco operations were not affected by the power rationing as the operations have a direct line from the grid and are not connected through the municipal line. The Group is working on securing a dedicated power line for the Vanchem operation.

The Group continues to refine its plans for Vanchem, as operations are stabilised and the synergies between the various intercompany resources are unpacked.

## Analysis of results

Income statement summary (as adjusted from 'statutory' primary statement presentation)

	US\$ 2019	US\$ 2018
Revenue	<b>116,514,112</b>	192,089,845
Cost of sales	<b>(47,828,763)</b>	(59,555,190)
Other operating and administration costs	<b>(36,043,392)</b>	(31,320,238)
EBITDA	<b>32,641,956</b>	101,214,417
Depreciation	<b>(10,388,145)</b>	(6,039,339)
Operating profit	<b>22,253,811</b>	95,175,078
Gain on bargain purchase – Vanchem	<b>60,586,633</b>	–
Net financing expense	<b>1,923,687</b>	753,927
Other non-operating costs	<b>(1,510,572)</b>	(9,323,939)
Profit before tax	<b>83,253,558</b>	86,605,066
Income tax charge	<b>(14,005,965)</b>	(37,604,907)
Profit after tax	<b>69,247,593</b>	49,000,159

The operating profit for 2019 was US\$22.3 million compared with the prior year profit of US\$95.2 million, the reduction was mainly due to the decrease in the commodity price during the year. EBITDA for 2019 were US\$32.6 million, a decrease of US\$68.5 million on 2018, mainly driven by weaker commodity prices and inflationary increases on the relevant cost items. There were also once-off costs incurred for transformational agents at Vametco as well as the acquisition expenses which could not be capitalised. Profit before tax was US\$83.2 million (2018:

US\$86.6 million), as a result of the gain on bargain purchase (US\$60.6 million) on the Vanchem acquisition which was completed at a lower price than the recognised fair value.

### Revenue

Revenue for the Group amounted to US\$116.5 million (2018: US\$192.1 million). The Vametco sales volume in 2019 was 2,392 mtV at an average price of US\$49/kgV with an average exchange rate of ZAR14.4 to the United States dollar (2018: 2,573 mtV, average price US\$74/kgV, average exchange rate ZAR13.2/

## Other operating and administration costs

Other mine operating costs included community, social and labour plan costs at Vametco. Idle plant costs mainly reflected the 22-day planned maintenance shutdown implemented in the third quarter of 2019. Administrative expenses included staff salaries of US\$9.6 million (2018:US\$7.1 million) for head office, Bushveld Energy and Lemur and professional fees of US\$7.6 million (2018: US\$1.9 million) mainly attributable to transformational agent costs which amounted to US\$3.5 million, Johannesburg Stock Exchange listing preparation costs of US\$1 million, and other regulatory and governance fees of US\$1 million. Other costs incurred related to security, travel and accommodation, rental, conference marketing, as well as provision for historical debtors of US\$3 million with the key amount attributable to the take-on debtors on the acquisition of Strategic Mineral Resources ("SMC") of US\$1.9 million.

The below EBITDA reconciliation illustrates the impact of the decline in the vanadium price from the prior year. The operating costs also declined with the mineral royalty payable relative to sales. The royalties are paid by Vametco on the Unrefined Rate of  $0.5 + \{ \text{EBIT}/(\text{Gross sales} \times 9) \} \times 100$  with a maximum Royalty percentage payable for Unrefined minerals at 7%.

Taxation amounted to US\$14.0 million for 2019 (2018: US\$37.6 million), mainly driven by the decline in taxable income at Vametco as a result of the decline in the commodity price. The tax was offset by the tax refund of US\$5.0 million received as a result of the conversion of SMC to a limited liability company. This also meant that the deferred tax asset at SMC had to be reversed. The gain on bargain purchase is treated as a permanent difference for tax purposes and will not attract corporate income tax.

## Balance sheet Assets

Non-current assets increased during the year in line with the growth strategy of the business. The most significant increase came from the Vanchem acquisition, as noted above. There was also an increase in the investments in other businesses, namely Avalon Battery Corporation ('Avalon') and Enerox GmbH ('Enerox') as the Group matures its footprint in the energy storage market.

Current assets decreased due to the decline in the commodity price and its effect on the quantum of accounts receivable. The cash and cash equivalents decreased due to the cash payment for the Vanchem acquisition, offset by the drawdown of the debt raised in the year. Stock levels also increased because sales volumes were lower than production both at Vametco and Vanchem.

## Equity and liabilities

On 30 October 2019, the Group secured ZAR375 million in debt facilities from Nedbank, comprised of a ZAR125 million revolving credit facility ('RCF') and a ZAR250 million term loan which was drawn down at the time. The Group drew down the remaining RCF of ZAR125 million at the end of March 2020 to enhance liquidity and provide financial flexibility at the onset of the Covid-19 nationwide lockdown. Overall, Bushveld's gross cash and cash equivalent position as at 31 December 2019 was US\$34.0 million. The full details are outlined in Note 23 of the financial statements.

With the acquisition of Vanchem, there was an increase in the environmental liability. The liabilities further increased by the convertible loan instrument payable as mentioned in the acquisition note above. Other liabilities included the adoption of IFRS 16 relating to the initial recognition and measurement of the lease liability.

## Cash flows

Net cash flows from operating activities for the year were US\$28.5 million, a decrease of US\$16.5 million compared with 2018, driven by reduced profitability. Capital expenditure and investing activities for the year were US\$49.7 million, an increase of US\$21.5 million over 2018, mainly due to the acquisition of Vanchem as well as investments in Avalon and Enerox.

Subsequent to the year end, at the end March 2020, Bushveld drew down on its RCF of ZAR125 million to enhance liquidity and provide financial flexibility during the uncertainty arising from the Covid-19 pandemic and the South African 35-day nationwide lockdown. Bushveld Minerals' unaudited gross cash and cash equivalent position at 31 March 2020 was US\$34.4 million, which includes ZAR375 million in debt facilities.

	US\$
<b>2018 EBITDA</b>	<b>101,214,417</b>
Revenue changes	(75,575,733)
Operating cost changes excluding foreign exchange impact	(8,594,176)
Inventory movement excluding foreign exchange impact	8,912,861
Change in realised foreign exchange and other working capital	6,684,587
<b>2019 EBITDA</b>	<b>32,641,956</b>



## Finance Director's Statement continued

### Cash generation

The table on the right summarises the main components of the cash flow during the year:

#### Operating activities

The majority of the cash generated from operating activities was from Vametco, offset by head office activities, as disclosed in the income statement section of the report. Other working capital changes included an increase in the finished goods and work in progress items, offset by a reduction in accounts receivable, mainly driven by the reduction in sales prices due to the lower commodity price. This is evident in accounts payable, which have also reduced, mainly due to the lower amount payable for commissions because of the price reduction. Taxes paid are net of a refund of US\$5 million on the conversion of SMC into a limited liability company.

#### Investing activities

Investing activities included US\$30.7 million cash paid for the Vanchem purchase, US\$4.4 million investments in Avalon and Enerox as well as the cash repayment of US\$3.6 million for the deferred consideration payable to Yellow Dragon Holdings. This was offset by interest generated on bank deposits amounting to US\$3.6 million.

#### Financing activities

Dividends paid as a result of upstreaming cash from Vametco to the holding company resulted in a leakage of US\$4.5 million which was paid to the 26 per cent minorities of Vametco.

#### Financial risk management

The main financial risks faced by the Group relate to the availability of funds to meet business needs (liquidity risk), the risk of default by counterparties to financial transactions (credit risk), fluctuations in interest and foreign exchange rates and commodity prices. These factors are more fully outlined in the notes to the accounts. They are important aspects to consider when addressing the going concern status, particularly in the context of the Covid-19 pandemic. We are proactively managing the risks within our control. There are, however,

### Cash generation and net cash

The following table summarises the main components of the cash flow during the year:

	2019 US\$	2018 US\$
Operating profit	22,253,811	95,175,078
Depreciation and amortisation	10,388,145	6,039,339
Changes in working capital and provisions	4,586,737	(25,350,569)
Taxes paid	(8,767,312)	(30,923,733)
Cash flow from operations	28,461,381	44,940,115
Sustaining capital <sup>1</sup>	(3,652,977)	(11,205,702)
Free cashflow	24,808,404	33,734,413
Cash from other investing activities	(46,077,866)	(17,065,886)
Financing activities	13,287,374	16,238,967
Cash (outflow)/inflow	(7,982,088)	32,907,494
Opening net cash	42,019,123	9,739,632
Foreign exchange movements	(25,478)	(628,003)
<b>Closing net cash</b>	<b>34,011,557</b>	<b>42,019,123</b>

1. Sustaining capital is defined as the capital expenditure required for maintaining and sustaining existing production assets. This includes the replacement of plant and machinery and capital expenditure related to safety, health, and the environment.

factors which are outside the control of management, specifically volatility in the ZAR:USD exchange rate as well as the vanadium price, which we do not currently hedge and which can have a significant impact on the business.

#### Going concern

The Group manages liquidity risk by ensuring that it has sufficient funds to facilitate all ongoing operations. The Group's philosophy is to maintain a low level of financial gearing given its exposure to the vanadium price and exchange rate fluctuations.

As part of the annual budgeting and long-term planning process, the Group's budget and cashflow forecasting is reviewed and approved by the Board. The cashflow forecast is amended in line with any material changes identified during the year. Equally, where funding requirements are identified from the cashflow forecast, appropriate measures are taken to ensure these requirements can be satisfied. In particular, a capital allocation framework is applied which prioritises maintenance, critical and regulatory capital funding requirements. During the year, the Group secured ZAR375 million in debt facilities, comprised of a term loan of ZAR250 million and an RCF of ZAR125 million which was subsequently

drawn down in March 2020 to enhance liquidity and provide financial flexibility in light of the uncertainty arising from the Covid-19 pandemic and lockdown. At 31 December 2019, the Group held substantial cash balances of circa US\$34.0 million, placing it in a strong position.

The Group also closely monitors its liquidity risk. It regularly produces cash forecasts and analyses sensitivities for different scenarios, including, but not limited to, changes in commodity prices and different production profiles from the Group's producing assets. The impact of Covid-19 has been assessed by the Group and, although the operations are producing again following the 35-day lockdown period, near-term operating conditions remain uncertain. Management has run various scenarios and sensitivities to provide the Board with various possible outcomes to direct strategy in the best interests of the business and its shareholders. Consequently, the Group will continue to take a prudent and proactive approach towards managing liquidity and taking cash preservation measures necessary to navigate this uncertain and unprecedented period.

Based on the current status of the Group's finances, having considered cashflow forecasts and all reasonable possible



investments and downside scenarios, as well as the Group's debt facilities and terms, the Group's forecasts indicate it will have sufficient liquidity headroom to meet its obligations in the ordinary course of business for the 12 months following the date of approval of the financial statements.

### 2020 outlook and Covid-19 impact

The Group will continue to prioritise operational performance, cost efficiencies and synergies across Vametco and Vanchem, and will maintain a disciplined approach towards managing capital expenditure and optimising operating margins. Our operations began to ramp-up to pre-lockdown levels in early May 2020. Vametco restarted operations in mid-April 2020 when it was granted a permit to ramp-up to 50 per cent capacity, in line with the Amended Disaster Regulations announced by the South African Government on 16 April 2020. Vanchem restarted operations in early May when the country transitioned to Level 4, in accordance with the Government's risk-adjusted strategy for economic activity. We have, for now, maintained the 2020 production guidance for both Vametco and Vanchem. We will however continue to monitor the situation in light of the Covid-19 virus driven risks and their potential resultant impact on our operations.

As a precaution we have taken cash preservation measures to manage near-term liquidity while preserving the long-term sustainability of the assets. Steps to conserve cash resources include limiting operational expenditure where necessary. We are applying a capital prioritisation framework which involves reducing as well as deferring growth associated (non-critical) near term capital expenditure whilst prioritising regulatory capital across the business. In line with the Group's capital and cash preservation measures we anticipate ZAR11 million (circa US\$660,000) of sustaining capital at Vametco, ZAR120 million (circa US\$7.2 million) of critical refurbishment and regulatory capital expenditure at Vametco and Vanchem and ZAR4 million (circa US\$240,000) as growth for the Vametco Phase 3 pre-feasibility study.

From a supply chain perspective, the Group has ensured security of supply and put in place sufficient contingency plans. Bushveld continues to work with its customers to fulfil orders and meet their requirements while still complying with Government directives. The supply chain is open and customer orders remain robust. The Company has not had to declare force majeure. Management will continue to focus on taking the necessary steps to protect its staff and communities,

and the financial stability of the business to secure its longer-term sustainability.

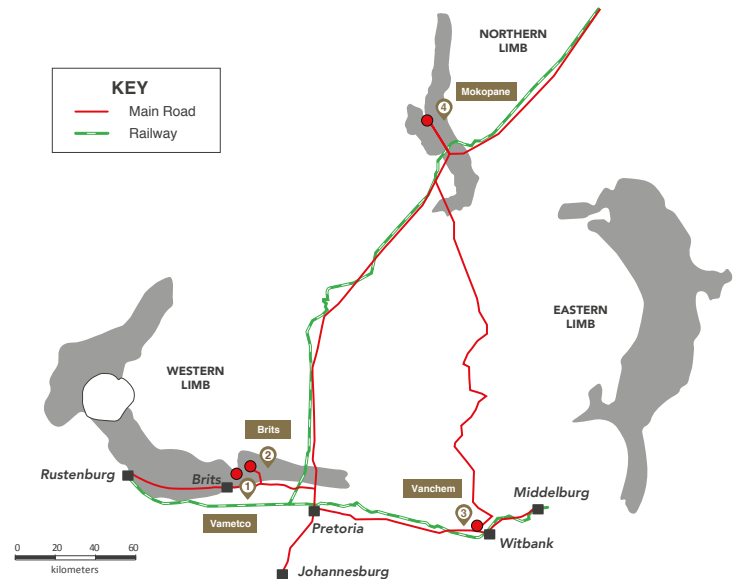
Full details of Bushveld's response to this pandemic can be found in the Principal Risks section of the report.

**Tanya Chikanza**  
Finance Director  
23 June 2020

## Details of Operating Assets and Operational Review

# Bushveld Vanadium

Bushveld has one of the largest, high-grade primary vanadium resource bases in the world. The Company's vanadium resource comprises of three mineral assets: Vametco, Brits and Mokopane. It also has two processing facilities: Vametco and Vanchem. All of these assets are situated in South Africa.



## Bushveld Minerals' large high-grade resource base and processing facilities comprise:

### 1. Vametco

#### Integrated mine and processing facility

Vametco is a primary low-cost vanadium mining and processing operation, using the salt roast beneficiation process, with a 185.5 Mt JORC-compliant resource, including 47.4 Mt in reserves, with in-magnetite vanadium grades averaging 2.0 per cent  $V_2O_5$  and a life of mine of more than 30 years (details can be found in the Minerals Resource and Reserves section of this report). The Vametco mine is an opencast mine along a strike of approximately 3.5 kilometres. Vametco produces a steel-alloying vanadium carbon nitride product, called Nitrovan.

In 2020, the Company will commence the pre-feasibility study for Phase 3 of the multi-phase expansion project, to advance towards a steady state production of 4,200 mtVp.a by 2025. The estimated total capital expenditure required for Phase 3 is approximately ZAR430 million (circa US\$26 million), with most of the cost being Rand-denominated. The capital expenditure is subject to further definitive feasibility study work.

### 2. Brits

#### Resource

Brits includes prospecting rights and a mining right under application on farms adjacent to Vametco. The mineralisation is outcropping and a continuation of the Vametco deposit. The Maiden Resource Statement published in July 2019 and JORC-compliant Competent Person's Report published in January 2020 showed an aggregate Inferred and Indicated Mineral Resource distributed across the three seams (the Lower, Intermediate, and Upper Seams) of 66.8 Mt at an average grade of 1.6 per cent  $V_2O_5$  in-magnetite, which is among the highest grades in the world. Brits has the potential to supply additional feed tonnage for the Vametco plant, and if required, concentrate feed for Vanchem.

### 3. Vanchem

#### Processing facility

Vanchem is a primary low-cost vanadium processing facility. It uses the salt roast beneficiation process, producing approximately 80 mtV per month (approximately 960 mtVp.a). Vanchem has three roasting kilns and associated leaching facilities, a vanadium chemical facility, a vanadium pentoxide flake plant, two ferrovanadium convert plants – an electric smelting and an alumino-thermic smelting facility. Vanchem produces vanadium pentoxide, ferrovanadium, vanadium chemicals and it is capable of producing vanadium trioxide. The Company has completed a preliminary desktop scoping study of the refurbishment programme for the plant to achieve a steady state production run-rate in excess of 4,200 mtVp.a. by 2025. This will be attained in three phases. The estimated total capital expenditure required for the refurbishment of the plant is ZAR750 million (circa US\$45 million), with most of the cost being Rand-denominated. The production profile and capital expenditure is subject to further definitive feasibility study work.

### 4. Mokopane

#### Project

Mokopane is one of the world's largest primary vanadium resources, with a 298 Mt JORC-compliant resource, including 28.5 Mt in reserves and a weighted average grade of 1.4 per cent  $V_2O_5$  in-whole rock and 1.8 per cent  $V_2O_5$  in-magnetite. Mokopane is intended to become a primary source of feedstock for Vanchem. The long-term plan remains to develop Mokopane into a standalone integrated mine and processing plant. The total capital expenditure for the development of the Mokopane mine, including mine development and beneficiation plant (crushing, screening and dry magnetic separation) and associated surface infrastructure, is estimated at ZAR370 million (circa US\$22 million).





# 1. Vametco

Vametco is an integrated mining and processing plant located eight kilometres northeast of Brits in the North West Province of South Africa. The operation owns the new order mining right for vanadium and other associated minerals over Portion 1 of the farm Uitvalgrond 431 JQ and Portion 1 of the farm Krokodilkraal 426 JQ in Brits. Vametco operates an open pit mine supplying ore to a vanadium processing plant located on the same properties. It has a total of 516 employees and contractors.

## Mine

Vametco's open pit mine is approximately 3.5 kilometres long, extending in a west-east direction. The ore body is well-defined, continuous and dips in a north-east direction at approximately 19 to 20 degrees. The mine is based on a JORC-compliant resource of 185.5 Mt, including 47.4 Mt reserves, with in-magnetite vanadium grades averaging 2.0 per cent  $V_2O_5$ , with a life of mine of more than 30 years.

## Processing

Vametco's processing plant receives ore from the co-located Vametco mine. Vametco employs the standard salt roast and leach process to produce a steel-alloying vanadium carbon nitride product called Nitrovan.

The process involves the following stages:

- **Step 1:** Crushing, milling and magnetic separation to produce a magnetite concentrate with average grades of approximately 2.0 per cent  $V_2O_5$  in-magnetite;
- **Step 2:** Salt-roasting the concentrate, where the concentrate is roasted with sodium salts in a kiln at approximately 1,150°C to form a water-soluble sodium vanadates material;
- **Step 3:** Leaching and purification, with dissolution of roasted vanadium concentrate in water, purification, and precipitation of vanadium through the addition of ammonium sulphate followed by drying and then processing in a reducing environment to produce a Modified Vanadium Oxide ('MVO') product; and
- **Step 4:** Nitrovan production: the MVO is briquetted and fed into a shaft induction furnace in a nitrogen atmosphere to produce Nitrovan, which is used as a micro-alloy in steel production.

## 2019 operational performance

- Vametco achieved record annual production of 2,833 mtV (100 per cent basis) in the form of Nitrovan from magnetite feed only, meeting 2019 guidance of 2,800 to 2,900 mtV. This is an 11 per cent increase relative to 2018 (2018: 2,560 mtV), reflecting a robust operational performance underpinned by the Transformation Programme;
- Vametco beat 2019 production cash cost guidance of US\$18.90/kgV to US\$19.50/kgV, achieving a 2019 production cash cost of US\$18.11/kgV. This is a five per cent reduction compared with 2018 (2018: US\$19.11/kgV), underpinned by a weaker ZAR: USD relative to 2018, as well as higher production volumes and a cost reduction programme, offset by a higher inflation rate;
- Vametco sold 2,392 mtV resulting in a carry-over of stock which will unwind in 2020;
- Vametco generated an audited EBITDA of US\$42.8 million for 2019 despite a 34 per cent reduction in the average vanadium price received.



Ore



Magnetite



AMV



MVO



Nitrovan

## Details of Operating Assets and Operational Review continued

Table 1: Operational highlights for Vametco (on a 100 per cent basis)<sup>1</sup>

Description	Unit	2019	2018	2019 vs 2018
Vanadium (Nitrovan plus FeV) produced	mtV <sup>2</sup>	2,833	2,560	10.7%
Vanadium sold	mtV <sup>2</sup>	2,392	2,573	-7.0%
Average realised price <sup>3</sup>	US\$/kgV	48.9	74.0	-33.8%
Revenue <sup>4</sup>	US\$ m	116.3	192.3	-39.5%
EBITDA	US\$ m	42.8	107.8	-60.3%
Production cash cost <sup>5</sup>	ZAR/kgV	262	253	3.7%
Production cash cost <sup>5</sup>	US\$/kgV	18.11	19.11	-5.2%

1. Bushveld's net attributable interest of the above figures is approximately 74%.

2. mtV = metric tonnes of vanadium.

3. Realised price is based on the prior month's mid average price before commissions.

4. Gross Revenue.

5. Includes direct costs of production. Excludes depreciation, royalties and selling, general & administrative expenses.

### Transformation Programme

In September 2017, Bushveld Minerals began an expansion initiative to increase Vametco's production from approximately 2,600 mtVp.a. to 4,200 mtVp.a.

The first two phases of the expansion, designed to increase production to 3,400 mtVp.a., were completed in June 2018. To complement the capital expansion, Bushveld Minerals, with the assistance of external consultants, undertook a detailed diagnostic review aimed at identifying opportunities to enhance operational efficiencies. The review identified a number of initiatives to improve operational performance, focusing on stabilising and improving production, reducing costs, raising capital efficiencies and improving overall organisational health.

In 2019, Vametco made several changes to its management structure, which were designed to build greater depth in the leadership team, improve co-ordination with the greater Bushveld Group and create dedicated capacity to co-ordinate the development and implementation of the many initiatives forming part of the Transformation Programme.

These changes included the appointment of Bertina Symonds as General Manager, a role created by combining the Chief Executive Officer and Chief Operating Officer functions.

During 2019, Vametco successfully implemented its operational improvement programme, resulting in improvements in all key areas:

- production scheduling;
- vanadium grade in the kiln feed;
- the hourly feed rate to the kiln; and
- recoveries.

All these areas contributed to greater throughput at higher grades.

### Phase 3 of the multiphase expansion project

In 2020 the Company will commence the pre-feasibility study ("PFS") for Phase 3 of the expansion for Vametco to achieve a steady state production run-rate of 4,200 mtVp.a. by 2025. The preliminary capital expenditure for Phase 3 is estimated at approximately ZAR430 million (circa US\$26 million), with most of the cost being Rand-denominated. The capital expenditure and ramp-up profile will be finalised after feasibility studies are completed and are subject to ongoing review in the context of the Covid-19 pandemic. The Company will, over the period, prioritise spend depending on market conditions.

### 2019 Capital expenditure

- Sustaining capital expenditure required for maintaining and sustaining Vametco was US\$3.7 million;
- A kiln off-gas project was initiated in 2018 to comply with environmental regulations relating to air emissions and further increase kiln feed throughput. During 2019, Vametco invested US\$6 million in the project.

### 2020 outlook and capital expenditure

- While Vametco's 2020 production was disrupted by the 35-day nationwide lockdown due to the Covid-19 pandemic, the Company retains the 2020 guidance of between 3,000 mtV and 3,200 mtV with a production cash cost of between ZAR257/kgV and ZAR265/kgV (US\$17.20/kgV and US\$17.70/kgV). The achievement of guidance is subject to no further stoppages related to Covid-19;
- Commissioning of the kiln off-gas project was planned to be completed during the first half of 2020. However, due to the Covid-19 lockdown, commissioning is now expected to be completed during the second half of 2020. The estimated 2020 capital expenditure for 2020 is ZAR35 million (circa US\$2 million);
- Sustaining capital expenditure of ZAR11 million (circa US\$660,000) is expected for the year;
- The Company will commence the PFS for the Phase 3 expansion project, to review the required investment to advance towards steady state production of 4,200 mtVp.a. The expected 2020 capital expenditure for the PFS is ZAR4 million (circa US\$240,000). The estimated total capital expenditure required for Phase 3 is approximately ZAR430 million (circa US\$26 million), with most of the cost being Rand-denominated. The capital expenditure is subject to further definitive feasibility study work.

## 2. Brits

The project hosts high-grade vanadium mineralisation in several magnetite layers. The mineralisation, which is outcropping, is a continuation of the Vametco strike. The project offers a potential extension of Vametco's Life of Mine and a cheap source of near-surface ore for the Vametco plant. Recent drilling has shown lower seam weighted average grades of 0.6 per cent  $V_2O_5$  in-whole rock and 1.6 per cent  $V_2O_5$  in-magnetite, which are among the highest in the world. A Competent Person's Report ('CPR') was published in January 2020 and

can be found on our website [http://www.bushveldminerals.com/wp-content/uploads/2020/01/Independent-CPR\\_Brits-Vanadium\\_January\\_2020\\_Final.pdf](http://www.bushveldminerals.com/wp-content/uploads/2020/01/Independent-CPR_Brits-Vanadium_January_2020_Final.pdf).

Brits has the potential to provide additional feed tonnage for Vametco and, if required, concentrate feed for the Vanchem plant.

The Company's interest in the asset ranges between 51 per cent and 74 per cent through three different companies, one of which is Caber Trade Mining and Invest 1 (Pty) Ltd ('Caber Trade'), the mining right applicant, in which the Company holds an interest of 51 per cent.

The Caber Trade mining right application was recently refused by the Department of Mineral Resource and Energy, since it did not fulfil certain conditions set out in the 2012 letter of acceptance. Caber Trade has subsequently lodged an appeal against the decision, on the grounds that the process followed in the refusal decision was administratively flawed.

The Caber Trade properties were not included in the CPR, therefore the refusal of the mining right has no impact on the mineral resource statement.

## 3. Vanchem

On 7 November 2019, Bushveld Minerals announced the successful completion of the Vanchem plant acquisition for a fair value consideration of US\$55.8 million<sup>1</sup>.

Vanchem is a primary vanadium-processing facility with a beneficiation plant producing vanadium pentoxide, ferrovanadium and vanadium chemicals. It is capable of producing vanadium trioxide. Vanchem uses the salt roast beneficiation process, similar to that used at Vametco, and is currently producing circa 80 mtV per month using a single kiln.

The plant consists of the following components:

- A rail siding which was historically used to transport ore to Vanchem;
- A milling and concentrating (magnetic separation) facility for the treatment of magnetite;
- A roast/leach configuration with three kilns;
- An ammonium poly-vanadate precipitation plant which will be replaced with a new ammonium metavanadate plant;
- A de-ammoniation/vanadium trioxide plant;
- Vanadium pentoxide flake production facilities;
- An electric smelting facility for conversion of vanadium trioxide to ferrovanadium;
- An aluminothermic smelting facility, for conversion of vanadium pentoxide into ferrovanadium; and
- A vanadium chemical plant producing various vanadium chemical products.

Vanchem is located at Ferrobank Industrial Park in Emalahleni Local Municipality, Mpumalanga Province, in South Africa. It has been operating since the late 1970s,

processing a combination of ore feed from the Mapochs vanadium mine ('Mapochs') and slag from Highveld. Highveld continued to supply ore to Vanchem from its Mapochs mine in Limpopo until it closed in 2015. Without guaranteed ore supply from Mapochs, Vanchem was forced into Business Rescue in November 2015 with the Vanchem plant being put into care and maintenance later that year. The plant was partially re-started in the third quarter of 2018, after Vanchem was able to procure magnetite ore from third parties.

The ferrovanadium facilities are located at the Highveld site and are situated approximately 10 km from the Vanchem plant.

Vanchem has secured sufficient ore supply from third parties to support current levels of production until the first half of 2021. The Company retains the optionality to supply magnetite concentrates from Vametco to the Vanchem.

### Vanchem processing:

- **Step 1:** Crushing, milling and magnetic separation to produce a magnetite concentrate with average grades of approximately 1.65 per cent  $V_2O_5$  in-magnetite;
- **Step 2:** Salt-roasting of concentrate. The concentrate is roasted with sodium salts in a kiln at approximately 1,150°C to form a water-soluble sodium vanadate material;
- **Step 3:** Leaching and purification, involving dissolution of roasted vanadium concentrate in water, purification and precipitation of vanadium through the addition of ammonium sulphate, followed by drying and then processing in a reducing environment to produce an ammonium metavanadate ('AMV') product;
- **Step 4:** The AMV is de-ammoniated and melted to produce vanadium pentoxide flakes – a primary product. The AMV is also used in other processes to produce a spectrum of vanadium chemicals; and

- **Step 5:** vanadium pentoxide is reduced by aluminium in the aluminothermic process in the presence of iron to produce ferrovanadium – a primary product.

### Rationale for the acquisition

The acquisition is consistent with Bushveld's long-term strategy of acquiring existing, low-cost scalable brownfield operating assets in South Africa to expedite the development of its significant and high-grade resource base. By sustainably reducing costs, Vanchem will generate healthy margins throughout the commodity cycle.

### Key advantages:

- **Increasing the Group's exposure to vanadium, a commodity with compelling fundamentals;**
- **Supporting Bushveld Minerals' target production of more than 8,400 mtVp.a.** After completion of a refurbishment and ramp-up programme, Vanchem is expected to support steady state production in excess of 4,200 mtVp.a.
- Diversifying the Company's geographical mining and production footprint within South Africa. It also adds another processing facility and its three kilns provide optionality and increased availability during planned and unplanned kiln maintenance;
- Adds new vanadium products to the portfolio. Vanchem produces vanadium pentoxide, ferrovanadium, vanadium chemicals and it is capable of producing vanadium trioxide, complementing Vametco's existing Nitrovan offering;
- Enhancing the Company's ambitions in the global energy storage and VRFB space by leveraging Vanchem's existing chemical plant and high purity oxide production capacity in the manufacture of vanadium electrolyte;
- **Expediting the development of Mokopane, which has been identified as a primary source of feedstock, to create a fully-integrated business.**

1: Refer to note 8 for details on the fair value purchase price

## Details of Operating Assets and Operational Review continued

### Vanchem continued

#### Refurbishment programme and capital expenditure

The Company has completed a preliminary desktop scoping study on the refurbishment programme for the entire plant to achieve a steady state production run-rate in excess of 4,200 mtVp.a. by 2025, fully utilising a three kiln configuration, after a three phase refurbishment programme. The total preliminary refurbishment capital expenditure is estimated at approximately ZAR760 million (circa US\$45 million), with the majority of the capital being Rand-denominated. The refurbishment programme will be conducted as follows:

- **Phase 1:** critical refurbishment requirements, 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. This phase is expected to require a capital expenditure of ZAR234 million (circa US\$14 million) and be carried out in 2020 and 2021, with production estimated at approximately 1,100 mtVp.a. The 2020 critical refurbishment of ZAR85 million (circa US\$5 million) will focus on

extending the calcine dump and commence the upgrade of the electrical reticulation system and the storm water treatment;

- **Phase 2:** includes the refurbishment of the first idle kiln and the construction of a new ammonium metavanadate plant. This phase will result in the plant achieving a production of 3,100 mtVp.a. after ramp-up. This phase is expected to require a capital expenditure of ZAR355 million (circa US\$21 million) and to be carried out in 2021 and 2022; and
- **Phase 3:** includes the refurbishment of the second idle kiln, the vanadium trioxide plant, the vanadium pentoxide plant and other associated infrastructure. This phase will increase production to more than 4,200 mtVp.a. after ramp-up, it is expected to require a capital expenditure of ZAR171 million (circa US\$10 million) and be carried out in 2023 and 2024;
- The capital expenditure, ramp-up profile, and timing to achieve a production in excess of 4,200 mtVp.a. will be finalised after prefeasibility and feasibility studies are concluded. These estimates are

subject to ongoing review in the context of the Covid-19 implications. The Company will, over the period, prioritise spend depending on market conditions.

#### 2020 outlook and capital expenditure

- While Vanchem's 2020 production was disrupted by the 35-day nationwide lockdown due to the Covid-19 pandemic, the Company retains the 2020 guidance of between 960 mtV and 1,100 mtV with a production cash cost of between ZAR245/kgV and ZAR260/kgV (US\$16.30/kgV and US\$17.30/kgV). The achievement of guidance is subject to no further stoppages related to Covid-19;
- Given Vanchem's modular configuration, we have established that the critical refurbishment programme to sustain current production level of approximately 1,100 mtV in 2020 will cost ZAR85 million (circa US\$5 million). The 2020 critical refurbishment will focus extending the calcine dump and an initial upgrade of the electrical reticulation system.

## 4. Mokopane

Mokopane is located on the central portion of the northern limb of the Bushveld Complex. The project is in the Mokopane District of Limpopo Province, approximately 65 kilometres west of the provincial capital, Polokwane. The project includes one of the world's largest primary vanadium resources, with a weighted average grade of 1.4 per cent  $V_2O_5$  in-whole rock and 1.8 per cent  $V_2O_5$  in-magnetite.

#### Licensing

On 29 January 2020, the Department of Mineral Resources and Energy in South Africa executed a 30-year mining right in favour of the company's subsidiary, Pamish Investments No. 39 (Pty) Ltd ('Pamish'), over five farms: Vogelstruisfontein 765 LR; Vriesland 781 LR; Vliegkraal 783 LR; Schoonoord 786 LR; and Bellevue 808 LR.

#### Ownership

While the Mokopane's mining right is subject to Mining Charter II regulations, the Company is committed to adopting Mining Charter III regulations in respect of host community and employee shareholding requirements. In accordance with Mining Charter III, five per cent of the equity in Pamish will be sold by the existing shareholders (Bushveld Minerals and

Izingwe Capital (Pty) Ltd) to the Bakenberg Community Trust, a trust established for the benefit of the local communities. This five per cent share will be vendor-financed and repaid from future proceeds from the mine. Bushveld Minerals' interest in the Mokopane Project will accordingly reduce from 64 per cent to 60.8 per cent, while Izingwe's shareholding will reduce from 36 per cent to 34.2 per cent. Pamish has further committed to allocate an additional five per cent to an Employee Share Ownership Participation Scheme once the mine is operational, which will result in Bushveld Minerals ultimately holding 57.6 per cent and Izingwe 32.4 per cent.

#### Geology & Resources

The Mokopane deposit is a layered orebody along a 5.5 kilometre north-south strike, dipping at between 18 and 22 degrees west. The project comprises three adjacent and parallel magnetite layers, namely the Main Magnetite Layer ("MML"), the Main Magnetite Layer-Hanging Wall ("MML-HW") layer and the AB Zone. Its 298 Mt (JORC) resources and reserves run across three parallel overlying magnetite layers with grades ranging from 1.6 per cent to over 2.0 per cent  $V_2O_5$ , as follows:

- **MML:** 52 Mt @ 1.48 per cent  $V_2O_5$  (1.6-1.8 per cent  $V_2O_5$  in-magnetite);
- **MML-HW & Parting:** 233 Mt @ 0.8 per cent  $V_2O_5$  (1.5-1.6 per cent  $V_2O_5$  in-magnetite); and

- **AB Zone:** 12 Mt @ 0.7 per cent  $V_2O_5$  (greater than 2.0 per cent  $V_2O_5$  in-magnetite).

#### Outlook and capital expenditure

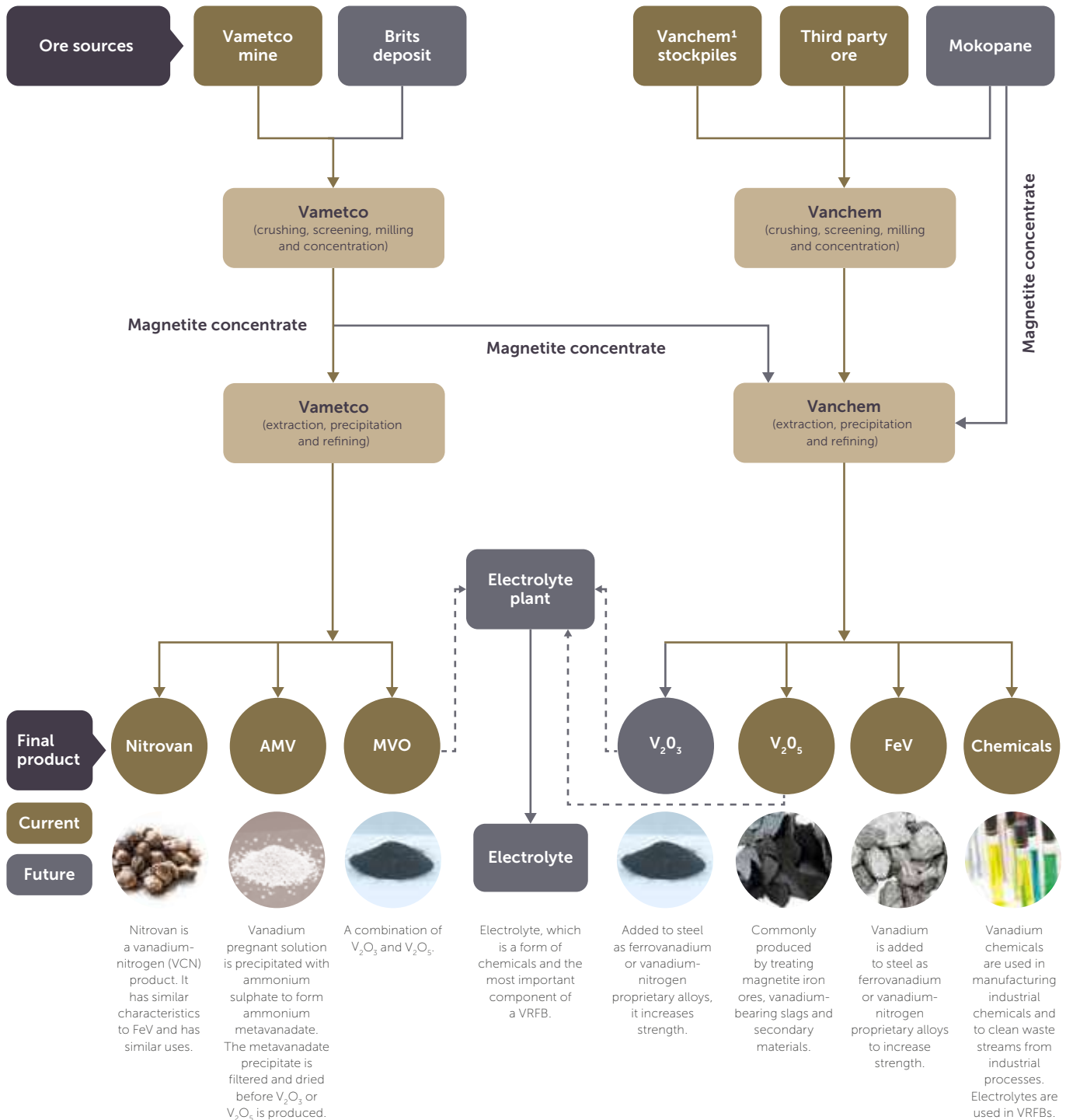
Mokopane is intended to be a primary source of feedstock for Vanchem from its large mineral reserve, and Vanchem will expedite the development of this project. The preliminary capital expenditure requirements associated with developing Mokopane including mine development, and the development of beneficiation plant (crushing, screening and dry magnetic separation) and associated surface infrastructure, is estimated at ZAR370 million (circa US\$22 million).

A definitive feasibility study ("DFS") to mine the Main Magnetite Layer, to provide a resources and reserves assessment with a focus on Mokopane as a primary feedstock supplier to Vanchem has been deferred by a year as part of the Group's cash preservation measures to manage near-term liquidity. When restarted, we estimate the study will take between nine to 12 months to complete. The Company retains the option of developing Mokopane into a standalone integrated mine and processing plant, producing 5,300 mtVp.a. of greater than 99 per cent purity  $V_2O_5$  product.



# Flexible and Integrated Asset Base with a Diversified Portfolio of Products

Bushveld Minerals' vertical integration strategy and production flexibility allows it to mine, process and manufacture vanadium-based products in a single value chain, providing flexibility to source feedstock and maximise sales, depending on product demand dynamics. This will provide a solid foundation for our business throughout the commodity cycle.



1 Purchased pre-completion of the acquisition.

## Details of Operating Assets and Operational Review continued

# Bushveld Energy

In 2019, Bushveld Energy made encouraging progress in developing its three strategic pillars – electrolyte production, Vanadium Redox Flow Battery ('VRFB') manufacturing and VRFB deployment – as opportunities for energy storage expanded.

### Electrolyte

Significant progress was made towards our goal of producing at least 200 MWh of vanadium electrolyte on an annual basis. The process of manufacturing electrolyte from Bushveld's own feedstock was finalised and work began to prove the product with VRFB manufacturers. Preparations for the construction of the electrolyte manufacturing plant at the East London Industrial Development Zone ('ELIDZ') also moved forward, including site selection, agreement of lease terms with the ELIDZ and obtaining environmental approval for the plant, which was a critical long-lead item. In the fourth quarter of 2019, together with the Industrial Development Corporation, Bushveld Energy issued a public tender for the engineering, procurement, and construction ('EPC') contract for the plant.

In addition to pure electrolyte sales, the Company launched an electrolyte rental product. An initial contract was concluded with Avalon Battery Corporation in June 2019. While the decline in vanadium prices has made electrolyte rental less urgent, it remains a core solution to ensure the commercial competitive advantage and environmental sustainability of VRFB technology in the medium and long-term.

### VRFB manufacturing and collaboration

During the year, Bushveld Energy communicated its approach to VRFB manufacturing, including how it will work with VRFB Original Equipment Manufacturers ('OEMs').

As the industry grows, there will be a greater need for collaboration to achieve the necessary economies of scale to drive costs down and compete with alternative energy storage technologies. Bushveld Energy takes a holistic approach to the full value chain, from vanadium material and electrolyte sales through to energy storage and project development in Africa, where we deploy VRFBs. This approach includes plans to support some VRFB OEMs directly, by offering them financial investment and manufacturing support.



In all our decisions, we recognise the importance of ensuring our investments yield attractive returns for our investors and do not over-commit our Group to energy projects that may delay the implementation of our mining and processing strategy.

All the companies in which we invest must be solid businesses with proven products and offer an attractive financial entry point. Bushveld will not invest on its own, but only in conjunction with other investors. We will ensure that we retain a minority position without direct operational control.

This policy guided our investment into Canada/US-based Avalon Battery Corporation ('Avalon'), which recently

concluded a merger with AIM-listed redT energy plc ('redT'), a company supported by strong institutional investors in London. On 1 April 2020, redT and Avalon merged to form AIM-listed Invinity Energy Systems plc ('Invinity'), a leading player in the growing energy storage market with a presence in North America, Europe, sub-Saharan Africa and Asia. Bushveld Minerals holds an 8.71 per cent shareholding in Invinity. Similarly, we have partnered with a consortium for an investment into Austria-based Enerox GmbH.

Our share of these investments lays the foundation for our VRFB Investment Platform ('VIP'). For the first time, the VIP allows investors to access technologies to underpin the rapidly-growing long-duration stationary

storage market. The VIP uses Bushveld's knowledge of VRFB technology and its supply chain to lower the barrier to investing in VRFB companies for potential investors. It also expands the pool of capital available for these investments well beyond Bushveld's own balance sheet. Bushveld's role would be that of a significant minority investor, with strategic involvement such as vanadium sourcing, while keeping the day-to-day operations in the hands of the management team. The VIP will also make minority investments into VRFB manufacturers allowing it to support multiple manufacturers.

## Deployments

The opportunity for VRFB deployments in Africa grew faster than any other aspect of Bushveld Energy's business during 2019. Our original target was to identify 1,000 MWh of opportunities by 2020, but the regional market is showing greater potential than we expected.

Key developments during 2019 were:

- The announcement of the US\$5 billion/ 17.5 GWh initiative, led by the World Bank Group, to deploy storage solutions in low- and middle-income countries by 2025 to support the integration of renewable energy generation with existing power systems. One of the most significant initiatives is the 1,400 MWh battery programme announced by South African utility Eskom, which indicates that a significant portion of the programme will be directed towards Africa;
- South Africa's updated Integrated Resource Plan 2019 has, for the first time, included a dedicated allocation for energy storage. It requires over 2,000 MW of new storage capacity to be deployed over the next 10 years. Bushveld identified market growth as the largest potential risk when it launched its energy business, but these developments reduce that risk;
- To take advantage of this market opportunity, Bushveld Energy has built an internal Project Development team to identify and develop African energy projects requiring long-duration storage. The team is developing a pipeline of bankable projects, using its understanding of local African energy markets, technical knowledge of VRFB operation and proven commercial expertise;

- In 2019, those projects included the deployment of a 450 kWh VRFB at Eskom and advancing the development of a mini-grid at Vametco comprising a 2.5 MW of solar PV and 1 MW / 4 MWh of VRFB storage. The Vametco installation will be one of the first solar with long-duration storage mini-grid projects financed off-balance sheet in Africa.

## 2020 outlook and capital expenditure

As a result of the uncertain operating conditions due to the Covid-19 pandemic, the Group has taken cash preservation measures to manage near-term liquidity while preserving the long-term sustainability of the assets. These include reviewing and limiting operational expenditure where necessary, prioritising sustaining and regulatory spending and deferring some growth-associated (non-critical) capital expenditure for up to a year. Bushveld Energy's priorities in 2020 will be to continue delivering the projects within these three strategic pillars, including:

### Electrolyte

- After year-end, an investment decision was made by both the IDC and Bushveld on the vanadium electrolyte plant. The investment commitment from Bushveld is up to ZAR68 million (circa US\$4 million) through to 2022, which includes capital expenditure, working capital and ramp-up support. The IDC also approved the investment for its share of equity and all the debt funding for the project. The shareholding structure between Bushveld Energy and the IDC has been updated to 55 per cent held by Bushveld and 45 per cent by the IDC, reflecting additional work Bushveld carried out in 2015 and 2016 on the project, prior to entering into the Co-operation Agreement with the IDC. This also reflects the IDC's preference that Bushveld Energy should have control of the project;
- Implementing additional, large electrolyte rental contracts.

### VRFB manufacturing and collaboration

- Advancing the VRFB Investment platform;
- Completing the Enerox GmbH acquisition as part of a consortium;
- Investigating the business case for South African-based VRFB assembly.

## Deployments

- Demonstrating the business case for VRFB deployments, including delivering the Vametco mini-grid as a funded Independent Power Producer;
- Participating in the 2,000 MW South African Integrated Resource Plan energy storage allocation and other African projects within the World Bank's 17.5 GWh energy storage roll-out programme, including Eskom's;
- Securing partial self-supply of electricity at all Bushveld operations in South Africa to mitigate disruption to power supply from Eskom.

Our projects in South Africa are likely to experience delays of several months due to the nationwide lockdown to mitigate the spread of the Covid-19 virus. For the electrolyte plant, remote work, such as engineering, design and some procurement, was able to advance as scheduled, but there are likely to be delays in starting work on the civil construction for the building. For our deployment projects, there is a likely impact from our inability to source foreign experts to maintain hardware. In addition, there may be delays in the issuance of the Environmental Impact Assessment for the Vametco mini-grid that could extend deployment into 2021. In all our projects, we are also budgeting slightly longer supply chain times, including logistics, through to the first half of 2021.

Bushveld Energy's business model relies significantly on external partnerships beyond the companies within the Bushveld Group. These relationships vary, ranging from joint strategic initiatives to cost-sharing of investments. The electrolyte plant is a good example of our strategy, where development risks and costs were shared between Bushveld as a Group and the IDC, and investment into the operating facility also involved both parties making equity investment (in addition to debt). Going forward, Bushveld Energy will continue to consider similar models for all of its priority activities, balancing the strategic importance of integration with Bushveld Minerals against demand from external partners for strategic collaboration and investment opportunities in Bushveld Energy's initiatives.

## Other Non-core Interests

# Additional investments in coal, coal to power and tin

### Coal – Lemur Holdings

Lemur Holdings ('Lemur'), a wholly-owned subsidiary of Bushveld Minerals, is focused on coal energy projects. Its flagship project is the Imaloto coal-to-power project in southwest Madagascar, which consists of four exploration permits and one mining and exploitation permit, covering a total area of about 81.25 square kilometres.

Imaloto is an integrated coal-fired power project, envisaging a 136 Mt coal mine, a 60 MW power plant and a new transmission line stretching over 250 kilometres. It is the only coal-to-power solution being developed in Madagascar. The power plant is scalable from the current planned 30 MW to 60 MW and the transmission line is expandable up to 500 kilometres.

The project has a total of 136 Mt JORC-compliant mineral resources, of which 92 Mt is in the measured and indicated category. In addition to a fully-executed mining exploitation licence, Lemur has two exploration permits covering a combined 87.5 square kilometres in close proximity to the Imaloto Power Project. Since 2008, Lemur has invested over US\$10 million in developing the project.

From a geographical location and development phase perspective, the Imaloto Power Project is perfectly positioned to address the persistent power supply challenges that Madagascar faces, particularly in its least-developed but mineral-rich southern region. The southern region currently does not have a power grid and is almost entirely powered by isolated generators, which have a combined capacity of no more than 20 MW and currently produce roughly 8 MW.

The Imaloto power station will be located next to the coal mine, providing a captive market for the mine's production and unlocking the intrinsic value in the underlying project.

In addition to substantially increasing the generation capacity in Madagascar, the initial 60 MW capacity of the Imaloto Power Project will form the basis for a power grid for the southern region.

The Imaloto Power Project is at an advanced stage. The feasibility studies for both the power plant and the transmission line were completed by Sinohydro, following a technical co-operation agreement signed in 2017.

The Imaloto project has a full mining right for the coal mine as well as a 30-year Independent Power Producer concession from the government of Madagascar. Lemur has also concluded a 30-year Power Purchase Agreement for an initial 25 MW from JIRAMA, the state-owned utility.

During the first quarter of 2019, Lemur concluded a US\$1 million facility agreement with the Development Bank of Southern Africa for project preparation finance. This facility will be used to complete the remaining project development activities and pay for advisory services to enable the project to reach financial close.

Lemur completed its drilling programme for the Social and Environmental Impact Assessment ('SEIA') specialist studies in December 2019. A total of 16 holes were drilled. The extracted cores will be analysed using a number of different tests, including geological and coal quality. Lemur expects to submit the SEIA studies to the Ministry of the Environment during the second half of 2020.

The coal mine optimisation study, aimed at exploiting the underground portion of the mine earlier than previously planned, has been completed. On the basis of this study, Lemur developed the scope of work for a Definitive Feasibility Study, which commenced in the first half of 2020.

Negotiations with the contractor for the engineering, procurement, and construction agreement for the power station are ongoing and are expected to be finalised during the second half of 2020.

Lemur is in project finance discussions for the construction capital with interested lenders. The company's objective is to get the project to a 'construction-ready' stage, which we previously announced would be completed in the first half of 2020. Due to the effects of Covid-19 we anticipate that the project will get to construction readiness in the first half of 2021 and attain financial close soon afterwards. Discussions with lenders are expected to be concluded during 2020, once the key studies such as the SEIA and the mine definitive feasibility study are completed. Subject to financial close on approximately US\$160 million of funding, the plant commissioning date would be 2022.

Lemur will continue to focus on discussions with potential strategic partners as well as with the government of Madagascar for the implementation phase of the project.



## The PQ Iron & Titanium and PQ Phosphate Projects

The PQ Iron & Titanium Project is a multi-commodity project, located 45 kilometres north-northwest of the town of Mokopane in Limpopo Province, South Africa. The Project has a JORC-compliant Inferred and Indicated Mineral Resource of 955 Mt, with an average grade of 33.7 per cent Fe and significant  $TiO_2$  (over 18 per cent  $TiO_2$  in-magnetite concentrates). The project boasts some of the highest in-magnetite grades of titanium in the world and could be developed as a titanium and pig iron project in the long run, depending on the evolution of low capital-intensive methods for processing the ore. Bushveld Minerals is following, with interest, advances in metallurgical processing used for similar deposits and exploring partnerships with technology partners. No further work is planned on the project at this stage.

The PQ Phosphate Project resource lies immediately above the iron ore and titanium resource of the PQ Project. The Company reported on 3 June 2014 a maiden phosphate resource statement for the PQ deposit of

442 Mt, with average phosphate grades of 3.6 per cent  $P_2O_5$ . Although the grades are low, the PQ Phosphate deposit is in the immediate hanging wall of the PQ Project and would be mined concurrently with the stripping of the latter. Of particular interest is that laboratory-scale test work has shown that 37 per cent  $P_2O_5$  concentrate grades are achievable from this deposit.

Both projects are based on the same licence area as Mokopane, where there is a mining right held by Pamish Investments No. 39 (Pty) Ltd ('Pamish'). Bushveld Minerals currently owns an effective controlling interest of 64 per cent in the PQ Iron & Titanium and PQ Phosphate projects. While the mining right is subject to Mining Charter II regulations, the Company is committed to adopting Mining Charter III regulations in respect of host community and employee shareholding requirements. Therefore, a five per cent share for these stakeholders will be vendor-financed and repaid from future proceeds from the mine. Bushveld Minerals' interest in the PQ Iron & Titanium Project and PQ Phosphate Project will accordingly reduce from 64 per cent to 60.8 per cent, while

Izingwe's shareholding will reduce from 36 per cent to 34.2 per cent. Pamish has further committed to allocate an additional five per cent to an Employee Share Ownership Participation Scheme once the mine is operational, which will result in Bushveld Minerals ultimately holding 57.6 per cent and Izingwe 32.4 per cent.

Progress to date has been limited to understanding the economic parameters necessary for success and how these projects can be configured in line with the Company's approach towards developing projects. No further work is planned on these projects while the Company advances its vanadium platform.

## AfriTin Mining Limited

The Company holds an eight per cent shareholding in AIM-listed AfriTin Mining Limited, an African mining company with a portfolio of near-production tin assets in Namibia and South Africa, which was demerged from Bushveld Minerals in November 2017.



Risks

# Principal Risks

Everyone in the Company is responsible for managing risk. The risk management philosophy and appetite are determined and overseen by the Board and Audit Committee.

The Company has a detailed risk register which incorporates mitigation measures, collated in conjunction with all areas of the business, to understand the full spectrum of risks across the organisation. Across functions and subsidiaries, management imbues and enforces risk management practices and philosophy in daily operations and responsibilities.

The risk management process is summarised in the illustration below:

The identified risks are classified into four categories – macroeconomic, strategic, financial, and operational.

- **Macroeconomic** risks are largely beyond the Company’s control but are managed as proactively as possible. They include the management of an evolving regulatory environment, along with volatile commodity prices and fluctuating exchange rates;
- **Strategic** risks are those that affect the Company’s ability to deliver its strategic objectives, which include Bushveld’s horizontal growth ambitions. Its vertical integration strategy will provide a natural hedge against vanadium price volatility, ensuring sustainable operations and attracting and retaining an experienced team with the required skills to grow the Company;
- **Financial** risks are managed and monitored proactively through a centralised treasury function, capital governance processes, adequate insurance coverage, access to funding and adherence to risk management and internal control policies. Maintaining financial sustainability in a challenging economy is critical;
- **Operational** risks are controlled with hands-on management through approved processes and ongoing monitoring of performance against targets. Bushveld recognizes the importance of operating in a safe and healthy environment, supported by continuous, meaningful engagement with relevant stakeholders.



## Principal risks and mitigation:

Principal risk	Nature of risk	How we mitigate the risk
<b>Macroeconomic</b>		
Regulatory and legal	Mining rights and tenure security	<ul style="list-style-type: none"> <li>– Ensuring compliance with the Broad-Based Black Economic Empowerment ownership requirements of the current Mining Charter.</li> <li>– Continuous monitoring of legislation to ensure compliance with all aspects of the Mining Charter.</li> <li>– Regular monitoring of environmental and safety legislation, particularly in relation to reclamation, waste product disposal and other environmental protection issues.</li> <li>– Engagement and cultivating good working relationships with regulators and stakeholders.</li> </ul>
	Adherence to anti-bribery and anti-corruption legislation	<ul style="list-style-type: none"> <li>– Anti-corruption and bribery policy is in place.</li> <li>– A culture of zero tolerance towards corruption.</li> <li>– Ongoing training and awareness.</li> </ul>
Financial	Volatile commodity and currency prices	<ul style="list-style-type: none"> <li>– Adherence to treasury and financial risk management policies to ensure financial risk remains within board-approved limits.</li> <li>– Focus on production costs to maximise margins and remain a low-cost producer.</li> <li>– Majority of sales are US dollar-based while costs are mostly in South African rand. The currency exposure is monitored on a regular basis and hedge arrangements will be considered if beneficial to the business.</li> <li>– Bushveld Energy has structured its business strategy to cater for commodity price volatility.</li> </ul>
	Sovereign credit rating downgrades	<ul style="list-style-type: none"> <li>– Strong financial position with US dollar revenue, resulting in a rand hedge in the event of a ratings downgrade.</li> <li>– Rand-denominated cost profiles.</li> </ul>
Pandemics	Government lockdown regulations	<ul style="list-style-type: none"> <li>– Build a business strategy that allows for sufficient reserves to withstand the consequences of a lockdown period.</li> </ul>
	Global impact on vanadium demand	<ul style="list-style-type: none"> <li>– Secure sales commitments.</li> <li>– Monitor demand profile.</li> <li>– Ability to build a flexible operation that can ramp production up or down without major restructuring costs.</li> </ul>
<b>Strategic</b>		
	Declining resource and reserve base	<ul style="list-style-type: none"> <li>– Executed a 30-year Mining Right for Mokopane, one of the world's largest high-grade primary vanadium resources.</li> <li>– Continued investment in exploration and reserve generation at Brits, a continuation of the Vametco resource.</li> <li>– Actively identifying new exploration targets.</li> </ul>
	Geological reporting of quality and quantity of reserves	<ul style="list-style-type: none"> <li>– Conducted an independent geological review and mine optimisation study which is being integrated into long-term planning.</li> </ul>
	Attracting and retaining staff	<ul style="list-style-type: none"> <li>– Conducted a detailed human resource analysis and put a recruitment strategy in place.</li> <li>– Structured retention incentives – current, annual and long-term.</li> <li>– Internal growth and career planning opportunities for employees.</li> </ul>
	Skills shortages	<ul style="list-style-type: none"> <li>– Internships and learnerships in place.</li> <li>– Bursary programme in place for tertiary students.</li> <li>– Study support and training, to be informed by community baseline study being carried out.</li> </ul>
	Meeting market expectations	<ul style="list-style-type: none"> <li>– Regular market communication.</li> <li>– Ensuring production guidance is communicated to shareholders.</li> <li>– Monitoring operational performance relative to analysts' forecasts.</li> </ul>
	Stakeholder expectations	<ul style="list-style-type: none"> <li>– Regular communication with unions.</li> <li>– Ongoing communication with communities to ensure that local communities enjoy sustainable upliftment from Bushveld's commercial activities.</li> </ul>

## Risks continued

## Principal risks and mitigation: continued

Principal risk	Nature of risk	How we mitigate the risk
<b>Financial</b>		
	Capital allocation decisions	<ul style="list-style-type: none"> <li>– Capital allocation is based on stringent investment criteria and subject to Board oversight.</li> <li>– Ensuring the required skills and experience are in place for decision-making.</li> </ul>
	Cash flow generation and debt levels	<ul style="list-style-type: none"> <li>– Continuous focus on improving operational margins, both from a production improvement perspective and to reduce costs.</li> <li>– Standby facilities to be introduced to bridge any working capital deficits.</li> <li>– Ensuring sufficient cash reserves are available.</li> </ul>
<b>Operational</b>		
Occupational Health and Safety	Mine accidents	<ul style="list-style-type: none"> <li>– Safety management policy and strategies in place, with zero tolerance applied if the rules are disregarded.</li> <li>– Task observations conducted regularly to proactively identify deviations from safe operating procedures, provide coaching when necessary and reinforce good practices.</li> <li>– Behaviour-based safety training.</li> <li>– Independent oversight by regulators.</li> </ul>
	Workplace conditions	<ul style="list-style-type: none"> <li>– Medical monitoring of occupational diseases.</li> <li>– Regular medical examinations for all employees and contractors.</li> <li>– Periodic monitoring of workplace conditions.</li> <li>– Appropriate occupational health practices implemented.</li> </ul>
Operational	Strike actions	<ul style="list-style-type: none"> <li>– Proactive engagement with representative unions.</li> <li>– Appropriate remuneration practices and incentivisation through an Employee Share Ownership Participation Scheme.</li> <li>– Compliance with all relevant South African labour legislation, including the Mining Charter.</li> </ul>
Environmental	Environmental damage	<ul style="list-style-type: none"> <li>– Environmental management programme in place.</li> <li>– Rehabilitation guarantee in place to minimise and mitigate the environmental effects of mining.</li> <li>– Pollution control and water catchment dams.</li> <li>– Tailings dam monitoring and management programme.</li> <li>– Compliance with environmental authorisations, licences and permits.</li> </ul>
Pandemics	Temporary shutdown required due to infection	<ul style="list-style-type: none"> <li>– Rigorous health and safety measures implemented.</li> <li>– Cash reserves to withstand expected quarantine period.</li> </ul>
	Supply chain	<ul style="list-style-type: none"> <li>– Establishment of adequate contingency plans.</li> <li>– Collaboration with suppliers on security of supply.</li> <li>– Maintain higher stock levels.</li> </ul>



## *Covid-19 pandemic preparedness*

Bushveld Minerals established a cross-functional Covid-19 Task Team, including operations, safety and health, finance, human resources, community and government relations and other support functions to ensure that the Company is best prepared to navigate this period through a comprehensive awareness, prevention, and intervention programme. This includes:

- 1) close engagement with our regional and national authorities;
- 2) implementing various preventative measures, including supplying sanitisers, temperature testing, workplace adaptation to foster social distancing, remote work where practicable and introducing strict procedures at our operations;
- 3) ensuring that the Company's cash reserves and available facilities are sufficient not only to see the Company through the lockdown period but to allow it to ramp up speedily, once the lockdown period is lifted.

The programme prioritises the protection of employees through rapid implementation of health and hygiene controls in the workplace, protocols for dealing with suspected cases of infection and business continuity measures to minimise the disruptive effects of the pandemic on the business.

- **Health and Safety:** designing and implementing protocols aligned to those provided by the World Health Organisation, South Africa's Department of Health, national health organizations (such as the National Institute for Communicable Diseases), the South African Department of Mineral Resources and Energy and other government authorities, to safeguard our employees and operations. Our approach has been to create awareness in the workplace, minimise transmission risk and intervene in identified or potential cases;
  - **Human Resources:** proactively managing the workforce, focusing first on the high priority vulnerabilities and establishing business continuity measures and protocols to enable the organisation to adapt as the epidemic unfolds;
  - **Finance:** establishing cash preservation measures to manage near-term liquidity while preserving the long-term sustainability of the assets. These include reviewing and limiting operational expenditure where necessary as well as deferring growth-associated (non-critical) capital expenditure;
  - **Information Technology:** assessing and addressing systems and cyber vulnerabilities while enabling the teams across the sites to work and collaborate remotely;
  - **Supply Chain:** ensuring security of the supply chain, specifically by anticipating potential disruptions and putting in place adequate contingency plans. Bushveld continues to work with customers to fulfil orders and meet their requirements while still complying with Government directives. The supply chain is operating, and customer orders remain robust;
  - **Stakeholder and Community:** continued engagement and collaboration with employees, government and communities to reduce the impact on society;
  - **Customers:** engaging with our customers and leveraging our existing relationships to secure demand after the current lockdown.
- Our protocols have functioned effectively, and we will continue to monitor the situation and update our measures in line with the guidelines issued by the South African health authorities and government.

Sustainability: Value Beyond Compliance

# Sustainability: Value Beyond Compliance

Bushveld Minerals is dedicated to the long-term sustainability of our operations, not because it is a requirement but because we sincerely believe in creating value for all our stakeholders.

We acknowledge that achieving sustainability is a complex, long-term goal, on which our work is only starting, and that it will require time and effort on our part to make a meaningful difference to all the important aspects that touch our business.

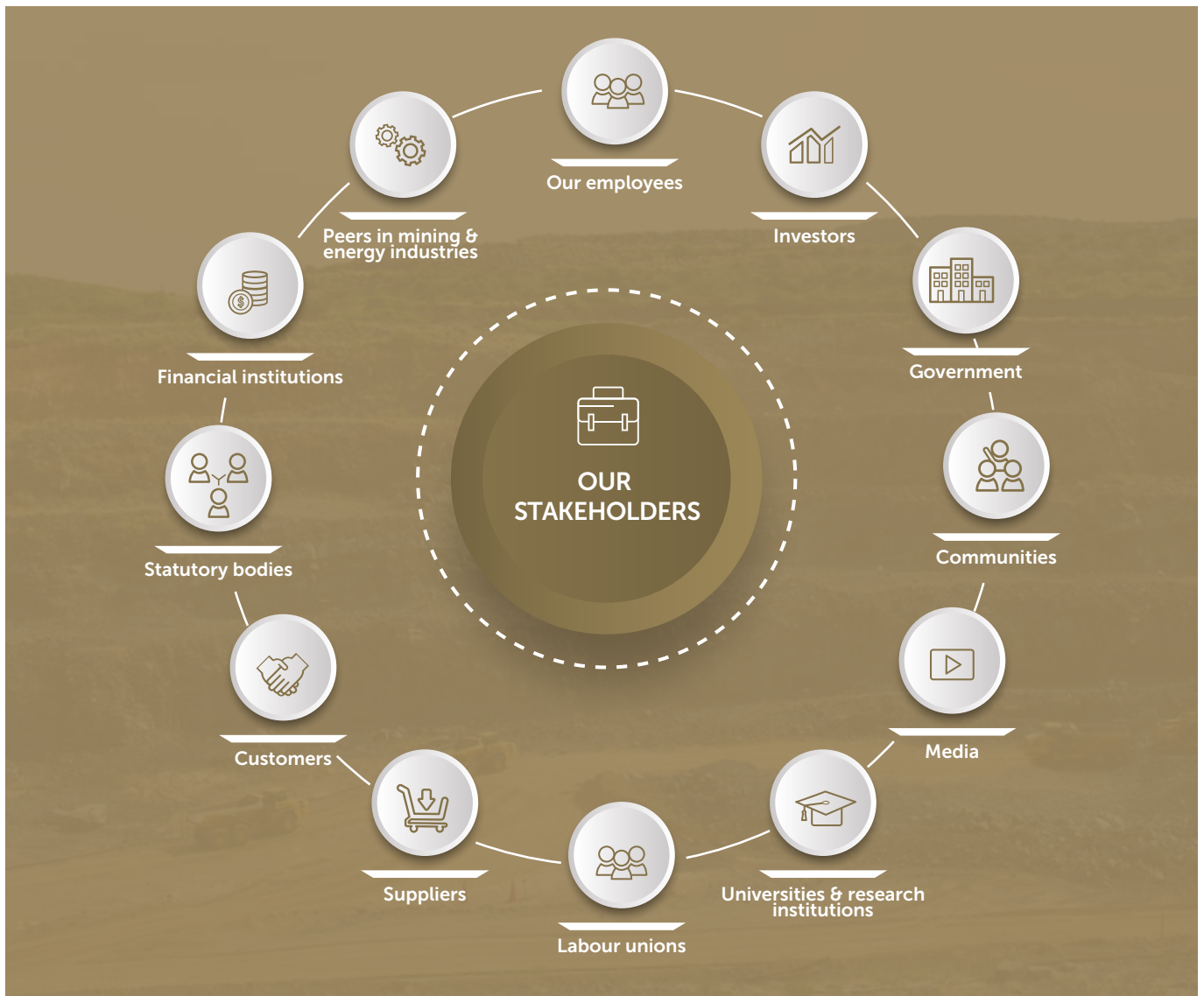
Implementation of the sustainability pillars across the Group rests with executive and operational leadership teams, with oversight by the Board and its subcommittees.

In steadily executing our objective of adding value beyond compliance, our approach to sustainable development is guided by and

embedded in three key pillars: health and safety, environmental management, and socio-economic development. These are aligned with the United Nations' 2030 Sustainable Development Goals. Our approach is underpinned by our belief in shared economic value, where there is fundamental synergy between our economic performance and the social progress of the communities within which we operate. Through our initiatives in Bushveld Energy, highlighted below, we are participating in the circular economy and reducing our contribution to global carbon gas emissions.

## 1. Health and safety

Bushveld Minerals recognises that the wellbeing of employees and communities is key for our long-term success, and we intend to build on the foundations already put in place at Vametco and Vanchem. We are determined to make our operations sustainable. This includes ensuring our employees enjoy a healthy and safe working environment, operating in an environmentally and socially responsible manner, and adding value for all stakeholders.



Our guiding principle is zero tolerance for deviations from safety regulations, whether by our own employees or contractors. We have instilled a work culture based on behavioural management that views safety and health as being of paramount importance. This was achieved through various safety campaigns implemented in 2019.

Training is directed at making sure our employees not only work responsibly for their own wellbeing, but also look out for their colleagues' health and safety. Our safety drive entails visible leadership and behavioural change coaching, inspections and training programmes that are conducted on site by both management and employees. We believe that measuring ourselves against industry-leading practices and implementing good safety and health systems and conditions will keep us in the forefront of health and safety in the industry.

Bushveld Vametco's safety performance for 2019 was zero fatalities and one lost-time injury. The Department of Mineral Resources' Mine Health and Safety inspectors paid six visits to the mine and issued one stoppage in terms of the Mine Health and Safety Act's Section 54. All findings were corrected, and action plans were implemented to prevent recurrence.

No occupational medical cases or claims were recorded in 2019. We conducted a health, hygiene and wellness programme for all contractors and employees, which included airborne pollutants, noise monitoring, and voluntary testing for HIV, high blood pressure, glucose and cholesterol.

## 2. Environmental management

Bushveld Minerals' environment stewardship is guided by the Environmental Management Programmes ('EMPs') that it is required to develop before commencing any mining and processing activities. The EMPs identify and address environmental impacts that could occur during the exploration, mining and mine closure phases. Incorporated within the EMP are reports and plans to proactively address the management of water, land, waste (non-hazardous and hazardous materials), air quality, energy consumption and greenhouse gas emissions.

Our objective is to align our activities with international standards, including those of the International Finance Corporation and ISO 14001:2015, which sets out guidelines and requirements for how an environmental management system should operate to achieve continual improvement.

Annual environmental performance assessment audits are conducted by an external environmental specialist and by regulatory authorities to assess the level of compliance with the conditions of the EMP and the mine's Environmental Authorisations. Environmental legal compliance audits were also performed by an independent specialist. No major findings were reported from any of these audits and no environmental penalties were imposed by the regulatory authorities.

### Vametco

Vametco is embarking on an Environmental Impact Assessment ('EIA') for its expansion project. The updated EIA will enable the operation to develop a comprehensive environmental management plan. Vametco plans to start the process of developing and implementing the ISO 14001:2015 Environmental Management System to align the environmental management of its operations with international standards.

### Water management

Water management is integral to our licence to operate, so compliance with all our obligations on our Water Use Licence is a priority. Vametco conducted all required internal and external Integrated Water Use Licence ('IWUL') audits in 2019. Action plans were developed based on the audits to improve water management.

Vametco adheres to an ongoing surface and groundwater monitoring programme. Sampling and analysis of various chemical constituents and groundwater level measurements are conducted on a monthly and quarterly basis, as required by the IWUL and South African National Standards drinking water quality standards, to ensure effective management of the water resources on site and in surrounding areas. We implement best practice measures for effective clean and dirty water separation, optimised recycling of used water and water balance.

In Bushveld Vametco Alloys' Water Use Licence there is an annual allocation of 1,624,811 m<sup>3</sup> water resource from boreholes, storm water and open pit seepage and canals. In 2019, despite an increase in production, only 77 per cent (1,251,114 m<sup>3</sup>) of the total water allocation for abstraction was utilised, resulting in a 23 per cent (373,697 m<sup>3</sup>) saving.

### Waste management

In general, our waste management is centred around separation at source, recycling and re-use. Compared with 2018, Bushveld Vametco improved its waste recycling by 11 per cent while waste to landfill declined by 29 per cent. Vametco conducted internal and external audits for its Waste Management Licence in 2019.

Regarding mineral waste, particularly the tailings dam and magnetite tailings storage facilities, an independent external specialist conducted audits to ascertain the facilities' structural stability. Both facilities were found to be stable and with no risk of unexpected failures, demonstrating our operational effectiveness and good controls.

### Air quality and environmental dust fallout

The Bojanala District Municipality granted Vametco an Atmospheric Emission Licence and we are dedicated to ensuring that we comply with it. This includes monitoring our stacks emissions and implementing management plans if they exceed the designated limits.

Capital projects, including the installation of off-gas scrubber systems and bag house systems, demonstrate our commitment to keep our emissions within standards. Our effectiveness is evident in the results of stack emissions monitoring conducted by independent third-party specialists.

## Sustainability: Value Beyond Compliance continued

Our fall out dust sampling points continuously present sample results which are below industrial limits of 1,200 mg/m<sup>2</sup> per day at the fence boundaries and therefore comply with the South African National Dust Control Regulations, 2013.

### Biodiversity Management

Vametco conducts annual plant and animal assessments as part of the biodiversity impact assessment. This includes an Invader Species Eradication Programme, in which we employ people from the local community. Establishment of vegetation and grass planting on areas meeting final rehabilitation criteria is conducted during the summer season.

### Mine rehabilitation and environmental liabilities

A closure cost review analysis for 2019 was conducted by a third-party consulting firm. No material change was reported compared with 2018. An appropriate financial provision adjustment to fund the gap will be made in the second quarter of our 2020 financial year. Concurrent rehabilitation is practised wherever possible to minimize environmental impacts during operation and reduce the final environmental liability.

### Quality Management System ('QMS'): ISO 9001:2015

Bushveld Vametco has continuously maintained its ISO 9001 certification. During the recertification audit conducted in 2019, the organisation demonstrated that its quality management system was in line with the requirements of the standard and that it complied with its own requirements.

The QMS is audited annually by the certification body, Bureau Veritas ('BV'). During the audit, Bushveld Vametco fulfilled its objectives of receiving no major non-conformities. The minor non-conformities raised received prompt attention and were submitted to BV.

### Vanchem

#### Occupational Health and Safety

One of our priorities is to provide a safe and healthy workplace for our employees, contractors, suppliers, and everyone who visits our operations.

One of our first priorities following our acquisition of Vanchem was to update our Occupational Health and Safety Policy and Procedures. The updated policy and procedures are meant to provide the leadership and resources required for all our workers to go home safe and well every day. The procedures also aim to ensure a systematic approach to anticipating, identifying, evaluating, controlling, monitoring, and managing occupational health and safety risks to make them "as low as reasonably practicable".

We have set a goal for our operations to have an Occupational Health and Safety Management System aligned to the ISO 45001:2018 standard by the end of 2020 and certified by the end of 2021.

#### Environment

Our operations impact the physical environment, including the land, air, water, and other important resources that we share with others. Our stakeholders expect us to manage and minimise any negative impacts our operations may have on the environment and we are committed to doing so through international best practice, including the IFC Performance Standards.

Since acquiring Vanchem, we have commissioned independent consultants to conduct various EIAs to evaluate the current status quo on environmental impacts and risks of our operation. For projects which need to progress to construction and operation, the EIA forms the basis of the site-specific environmental management system ('EMS').

We have set the goal of having an EMS aligned to the ISO 14001:2015 standard by the end of 2020 and certified by the end of 2021. This will ensure that we have systems in place to monitor and improve our environmental performance.

### Bushveld Energy

#### Participating in the circular economy

Through our subsidiary, Bushveld Energy, we are actively driving adoption of Vanadium Redox Flow Batteries ('VRFBs') in the global energy storage industry. Bushveld Energy's activities stretch over three key areas: electrolyte production; battery investment and manufacturing; and project development.

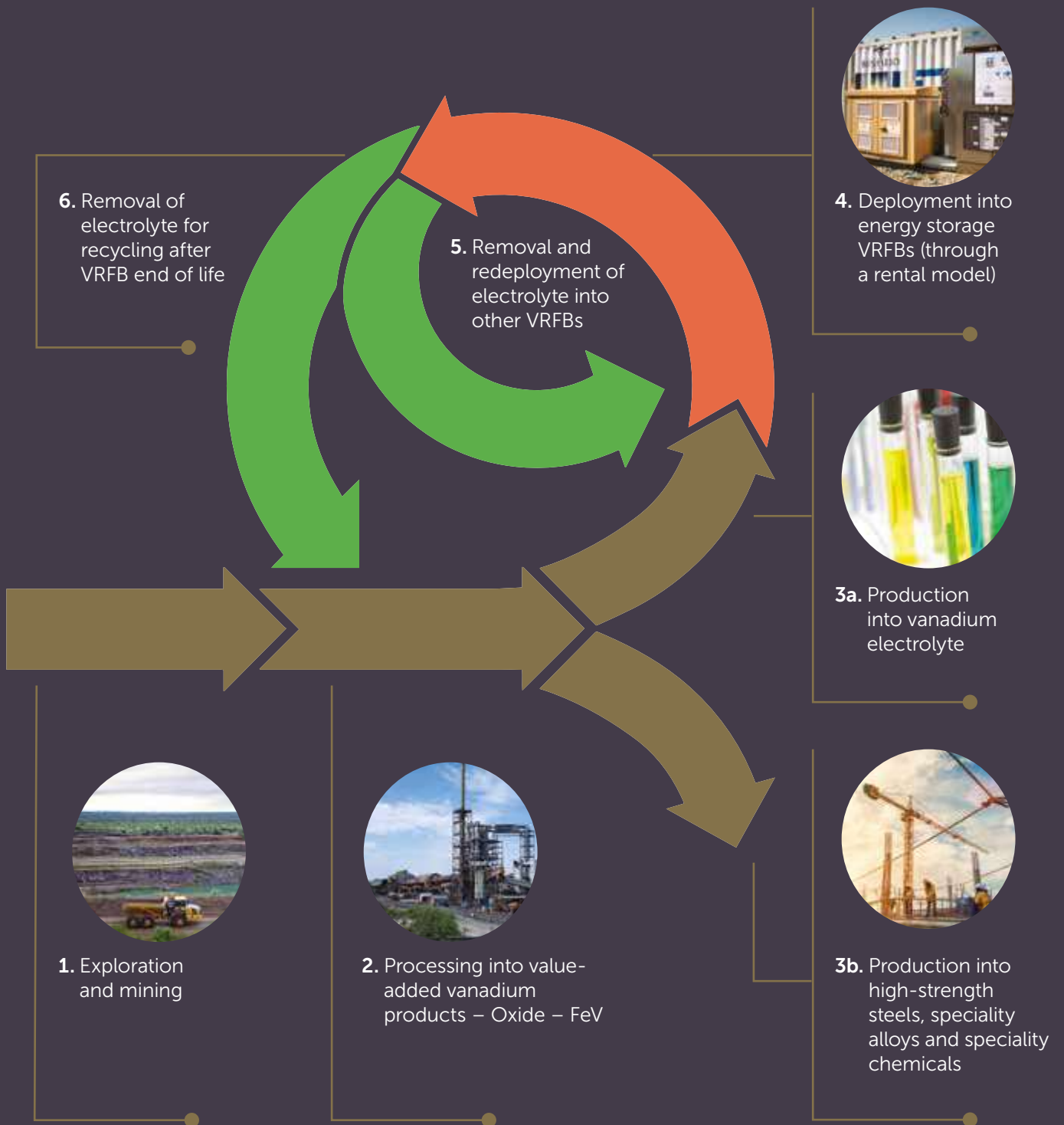
Bushveld Energy is developing a 1 MW mini-grid at Vametco, consisting of 2.5 MW of solar photovoltaics and 1 MW/4 MWh of VRFBs. The additional benefit of this project for Bushveld Minerals is that it is expected to contribute towards the reduction of the Company's carbon gas emissions through the use of renewable energy and storage.

VRFBs are designed to last for 20 years or more, so fewer batteries need to be deployed than would be the case for lithium batteries. The unique technical design allows full re-usability of the chemical electrolyte in the battery once the electrical and mechanical components wear out. That means that even after the 20-year lifetime of the battery is reached, the electrolyte can be redeployed into another battery. The electrolyte can be easily reprocessed by existing vanadium processing facilities, at minimal cost, into products such as ferrovandium and vanadium-pentoxide for use in high-strength steels and specialty alloys and chemicals.

Vanadium electrolyte is primarily made of water, allowing for easier processing than from other compound states. Only one mineral is extracted from vanadium electrolyte, whereas lithium, nickel, manganate, cobalt, etc. need to be separated out in a lithium battery. These opportunities may make vanadium the most circular economy-friendly mineral.



# Bushveld Energy Participating in the circular economy



## Sustainability: Value Beyond Compliance continued

### 3. Socio-economic development

Bushveld Minerals is not immune to global economic pressures and various domestic and international socio-political dynamics that affect the business sector and the community. All of these challenges contribute towards high levels of inequality, unemployment, and poverty and as a result raise our stakeholders' expectations of what the business sector can deliver.

#### Socio-economic development contributions: labour profile

Vametco and Vanchem employed a total of 664 people in the year under review. Bushveld Minerals' subsidiaries pay special attention to sourcing labour from host municipalities, which contributes directly towards local socio-economic development.

The tables below show Vametco's and Vanchem's labour profiles.

#### Vametco's labour profile

Geographical area	Number	%
Labour from within Madibeng Local Municipality	402	78
Labour from outside Bojanala District Municipality but from within South African borders	86	17
Labour from outside Madibeng Local Municipality but from within Bojanala District Municipality	28	5
Labour from outside the borders of South Africa	0	0
<b>Total</b>	<b>516</b>	<b>100</b>

#### Vanchem's labour profile

Geographical area	Number	%
Labour from within Emalahleni Local Municipality	133	90
Labour from outside Emalahleni Local Municipality but from within Nkangala District Municipality	9	6
Labour from outside Nkangala District Municipality but from within South African borders	6	4
Labour from outside the borders of South Africa	0	0
<b>Total</b>	<b>148</b>	<b>100</b>

#### Socio-economic development contributions: human resources development

Human resources development ('HRD') is one of the Company's important socio-economic goals. Bushveld Minerals invests in developing the skills of its employees and members of the host communities. The aim is to improve the quality of life of workers and members of the community while increasing their labour mobility and prospects of self-employment beyond Bushveld Minerals. The HRD programmes include learnerships, internships, bursaries, portable skills and Adult Education and Training. Below are the HRD programmes and achievements in 2019:

- Learnerships:** The learnership programmes are offered to both employees and non-employees. 22 learnerships were funded in 2019, and were for the following trades: Fitting, Fitting and Turning, Electrical, Instrument Mechanics, Rigging, Boiler making and Diesel Mechanics.
- Internships:** Five community members were part of one-year internship programmes (four Analytical Chemistry students and one Mechanical Engineering student). Furthermore, four community members benefited from two-year internship programmes (two in Finance, one in Geology and one in Electrical Engineering).
- Bursaries:** 38 bursaries were awarded. 24 of the bursary holders were females. Qualifications being pursued included medicine, accounting, engineering, information technology, geology, law, education and pharmacology.
- Portable skills:** There is continuous development of employees with computer skills. We trained 36 employees in 2019. The following portable skills were also offered to community members:
  - Certified Basic Computer Training to 41 community members.
  - Certified Basic Welding Training to 12 community members.
  - Certified Basic Plumbing Training to 20 community members.
- Adult Education and Training ('AET'):** This is an accredited curriculum that is presented to community members and employees to promote literacy, focusing on communication in English and numeracy. The curriculum ranges from pre-AET to level 4 (NQF1). In 2019 there were 18 learners from the community and four employees on this course.

## Socio-economic development contributions: Community Socio-Economic Investment project

Socio-Economic Development ('SED') is aimed at raising the standard of living of our host communities, in particular the previously disadvantaged. SED contributions are any monetary or non-monetary contribution implemented for individuals (natural individual or group of natural individuals) or communities, where at least 75 per cent of the beneficiaries are classified as black people. Our socio-economic development initiatives in 2019 amounted to over ZAR13 million and were targeted towards poverty alleviation, education, and skills and SMME development.

### 4. Stakeholder Engagement

Bushveld Minerals has developed a Stakeholder Engagement Strategy which forms the blueprint for building relationships with stakeholders, including our host communities and local landowners. The stakeholder engagement strategy was developed to enable Bushveld Minerals to develop a collaborative relationship with key stakeholders in support of its strategic objective – to become a fully integrated vanadium company.

The stakeholder engagement strategy builds on Bushveld's strategic intention to identify key stakeholders, their interests and requirements to develop appropriate engagement models. There were meaningful, transparent, and honest engagements with stakeholders in 2019.

Four key stakeholder engagement outcomes were set to support Bushveld Minerals' strategy:

- Socio-economic development, regulatory compliance, and creation of value beyond compliance in communities where we operate;
- Development of a strong South African vanadium industry, inclusive of a broad base of stakeholders (including support of Vanchem pre- and post-acquisition);
- Development of a policy and regulatory framework for the battery energy storage systems industry, including VRFBs, in the South African electricity market; and
- Expansion of VRFB deployments into the African continent and exports of vanadium, electrolyte, and the electrolyte rental product to key global markets (US, UK/EU and China).



## Our People

# Group Overview

The Bushveld Minerals Group employs exceptional people with outstanding capabilities and great potential in all areas of our business.

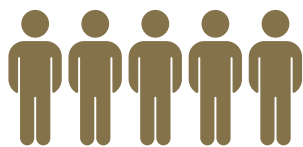
We aim to cultivate an environment in which our people can be entrepreneurial, learn and innovate while delivering tangible results. Our leadership strives to make a difference to everyone in our environment.

We want every employee to begin each day with a sense of purpose and end the day with a sense of accomplishment.

Over the past year, Bushveld's employee numbers have grown as we have attained two key strategic milestones: recruiting people with the appropriate skills and capabilities and acquiring Vanchem.

Our primary focus was to acquire diversity and depth of leadership skills to help us move the business to the next level of growth and smoothly integrate Vanchem into Bushveld Minerals. These appointments gave impetus to the achievement of our long-term business objectives and have helped to create a more diverse and inclusive group executive committee, with deep technical and leadership experience. Our business success is underpinned by having an inclusive culture which reflects the diversity of our employees and stakeholders. Embracing diversity drives social cohesion and enables us to tap into the full extent of the talents and potential of all those with whom we work.

At the end of the 2019 year, the Group employed 691 people across its subsidiaries and operations.



**Bushveld Minerals has a total of 691 employees and contractors**

### Vametco

Creating a work environment conducive to productivity and personal growth ranks high on the Company's human capital agenda.

### Group labour profile

Employment type	Bushveld Minerals Corporate Office	Bushveld Energy	Vametco	Vanchem	Lemur Holdings
Permanent	18	5	444		1
Fixed term contractors			29	148	
Learnership/Apprentices/ Internships/Graduates	3		43		
<b>Total headcount</b>	<b>21</b>	<b>5</b>	<b>516</b>	<b>148</b>	<b>1</b>

### Organisational health

In 2018 Bushveld Vametco employed the services of an external consulting firm to conduct an Organisational Health diagnostic on the basis of their Organizational Health Index ('OHI'). Organisational health is the organisation's ability to align around a common vision, execute that vision effectively, and renew itself through innovation and creative thinking. It has been found that companies that pay attention to their organisational health not only achieve measurable improvements in their organisational well-being but also demonstrate tangible performance gains in as little as six to 12 months.

The diagnostic was done by aggregating the views of our employees on management practices that drive nine key organisational dimensions collated through a structured survey. Scores were assigned to each practice and outcome, allowing the Company to see how it compares with others in the consulting firm's database.

The Company conducted the Organisational Health Index survey ('OHI survey') in December 2018 and again in December 2019, the outcomes of which resulted in the development of the Vametco Organisational Health Programme (Ke Nako Transformation Programme). Year-on-year, the team achieved significant shifts in all the OHI measurements, and the December 2019 results showed that Bushveld Vametco was among the top 25 per cent of companies in the consultancy firm's global database. The participation rate was 87 per cent of all employees and included more than 1,400 individual comments and suggestions.

The programme yielded a noteworthy year-on-year improvement in the overall health of our organisation.

### Establishing momentum

The Vametco team has managed to establish a rhythm of delivery that took the Company's production performance to a new level, reaching an all-time high production output of 2,833 mtV for the full 2019 year. This was achieved through 81 initiatives and the completion of 259 individual milestones.

We are confident that we will achieve our growth targets at the required cost levels through disciplined execution. The program continues to drive Vametco's strategies through the following priorities:

### Stabilising and improving production

– Vametco produced record levels of production from magnetite in the period after the annual shutdown. Given the systems and ownership that was established, management is confident that these production levels will not only be sustained but improved upon.

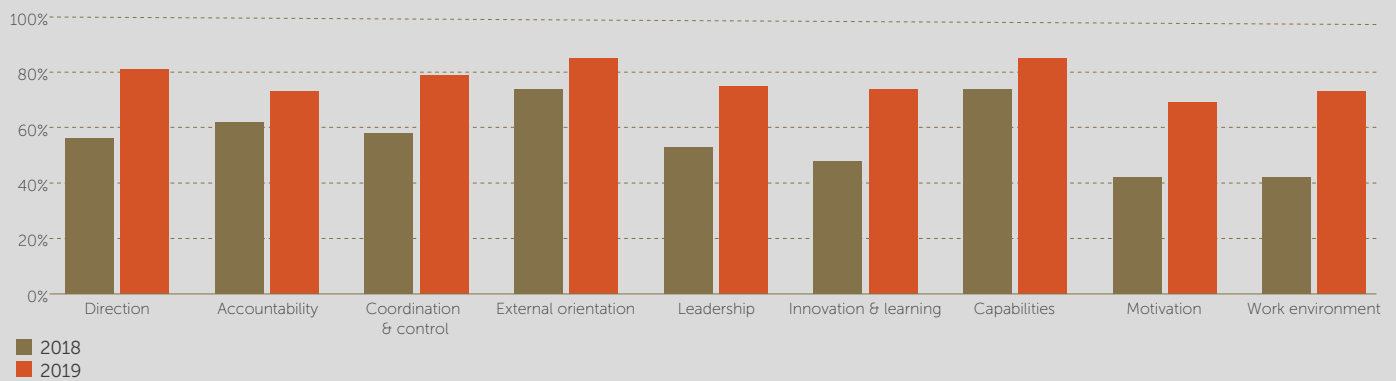
### Maintaining cost efficiency

– given current depressed vanadium prices, it is critical that cost control is maintained without sacrificing operational stability. The necessary systems and controls are in place to position Vametco to take full advantage of the next price uptick.





## Year-on-year Vametco's Organisational Health Index Results



- With a health score of 77, Bushveld Vametco now finds itself among the **top 25 per cent healthiest companies in the consultancy company database**.
- **Improvements** are seen across **all health outcomes**, with the biggest jump (+31 points) on Work Environment.
- Similarly to last year, **External Orientation** shows as the **organisation's spike**; Bushveld Vametco has also **excelled in Coordination & Control**.

**Our People** continued

**Organisational health**

– through various initiatives and special events, the employees and leadership of Vametco were mobilised and equipped with the necessary skills not only to deliver their targets but to excel as a dynamic mining organisation in South Africa.

The wider Vametco team has gone through an exciting transformation and intends to further improve sustainability, be responsible towards our communities and the environment and create value for our shareholders.

**Vanchem**

In the last quarter of 2019, Bushveld Minerals concluded the acquisition of Vanchem. A Section 197 transfer of all current Vanchem employees was agreed as part of the purchase agreements and Competition Commission submissions. At the time of closing the transaction, Vanchem had 155 fixed-term contractors ('FTCs') on its books. In terms of Section 197, these employees were transferred to Vanchem (apart from a few that retired) on better terms and conditions of employment than they had enjoyed previously.

In addition, we managed to retain key individuals as part of the acquisition, culminating in a successful Section 197 transfer of former Vanchem employees into Vanchem with no people-related disruption in business operations.

Our ability to attract, integrate and retain high-calibre skills and human capabilities while preserving job security remains at the top of the Company's human capital agenda. For this reason, we have simultaneously invested time and resources in best practice talent acquisition while building a solid remuneration and reward framework, aimed at rewarding high performance and at the same time retaining critical skills.

**2020 Human Resources Priorities**

Our priorities for 2020 are informed by the Group Human Resources strategy underpinned by the Group Strategic Priorities.

Bushveld Minerals sees all its employees as long-term strategic partners, sharing the common objective of building a sustainable business for the mutual benefit of all stakeholders. We believe in a shared human capital identity and integrated employee experience across our operations,

underpinned by people management practices that foster the performance, growth and prosperity of all our employees.

Skilled and engaged employees, working in a safe and productive environment, are able to innovate and drive operational excellence, enabling us to create value for our stakeholders.

STRATEGIC PILLAR	FOCUS AREA
<b>Shared Human Capital Identity</b>	<ul style="list-style-type: none"> <li>– <b>Leadership</b> – Shared leadership ethos and leadership talent management including leadership succession management;</li> <li>– <b>Culture</b> – Post-acquisition culture integration for the group and its operations;</li> <li>– <b>Employee Wellness and Relations</b> – Focus on building an integrated group approach to employee relations, with fully-engaged employees who will thrive and give their best to achieve their own and the Company's objectives.</li> </ul>
	<ul style="list-style-type: none"> <li>– <b>Integrated talent management practices</b> <ul style="list-style-type: none"> <li>• Talent acquisition: enhance our ability to attract great talent across all operations;</li> <li>• Performance: ensure that business leaders have the requisite set of competencies and tools to shape and drive a performance culture;</li> <li>• Talent development: investment in the improvement of both leadership and technical competencies across the group;</li> <li>• Remuneration and reward: group-wide implementation of the remuneration and reward philosophy and policy.</li> </ul> </li> <li>– <b>Bushveld employer branding</b> <ul style="list-style-type: none"> <li>• Develop an integrated internal and external Bushveld Minerals employer brand. Leverage the Group's employee value proposition to strengthen its reputation as a preferred employer for both existing and prospective employees.</li> </ul> </li> </ul>
<b>Integrated Employee Experience</b>	





## Governance

# Corporate Governance Report

The Board collectively recognises that a high standard of corporate governance is of paramount importance to continue to deliver the Company's strategy, create long-term value and maintain our licence to operate. In accordance with the AIM Rules requiring all AIM-listed companies to adopt and comply with a recognised corporate governance code, the Company adopted and complies with the Quoted Companies Alliance Corporate Governance Code ('QCA Code'), which is most suited to Bushveld's needs and size.

The Company's website includes a Corporate Governance Statement that explains how the ten principles of the QCA Code are applied by Bushveld. This can be found at <http://www.bushveldminerals.com/corporate-governance/>.

This Annual Report further details below how Bushveld is applying the QCA Code and how it supports Bushveld's medium- to long-term success. The QCA Code is clear that companies need to deliver growth, long-term shareholder value and that this requires an efficient, effective and dynamic management framework. It should be accompanied by good communication, which helps to promote confidence and trust.

### Principle 1: Establish a strategy and business model which promotes long-term value for investors

Bushveld Minerals is a low-cost, vertically-integrated primary vanadium producer with a diversified product portfolio. The Company's assets are located in South Africa, which hosts the largest high-grade primary vanadium districts in the world. Through Bushveld Energy, the Company's energy storage component manufacturer and project developer, focused on vanadium-based energy storage systems called Vanadium Redox Flow Batteries ('VRFBs'), Bushveld Minerals plays a pivotal role in the development and promotion of VRFB technology.

Bushveld Minerals' vision is to be one of the world's lowest-cost and vertically-integrated primary vanadium producers, recognised for its diversified vanadium product portfolio, operating efficiency and value creation.

The overriding objective of the Board is to direct the business to ongoing success and deliver long-term shareholder value. To achieve this, an operating model has been adopted that defines how to deliver and execute the strategy by defining the structures in which to operate and the capabilities required.

Bushveld Minerals' strategy and compelling investment case are outlined on page 04 of this report.

While the Company's focus is on the vanadium platform, it has additional investments in an integrated coal mining and power generation project in Madagascar, through its wholly-owned subsidiary Lemur Holdings, and an eight per cent shareholding in AIM-listed AfriTin Mining Limited.



### Principle 2: Seek to understand and meet shareholder needs and expectations

The Board is committed to providing effective communication with shareholders and attaches great importance to delivering clear and transparent information on the Company's activities and strategy.

The Bushveld Minerals Investor Relations team is dedicated to communicating the Bushveld Minerals value proposition to both institutional and private investors, as well as the broader market. This is successfully achieved through active engagement with investors, research analysts and journalists via a combination of investor roadshows, proprietary webinars, attendance at conferences focused on the mining and energy storage sectors and engagement with selective media.

The Board views the Annual General Meeting ('AGM') as the main forum for communicating directly with investors. Notice of the AGM is sent to shareholders at least 21 days before the meeting and the event is attended by the directors, either in person or via teleconference, who are available to answer questions raised by shareholders. At the AGM, various resolutions are proposed and voted on by the shareholders, either by attending the meeting or appointing a proxy to vote on their behalf if unable to attend in person. The results of the voting are released as soon as practicable after the AGM has closed. Beyond the AGM, the Company engages with its shareholders throughout the year across various platforms such as roadshows and conferences. These engagements are key as they provide valuable feedback in the decision-making process and determine how the Company can best meet shareholder expectations.

Significant developments and regular operational updates are disseminated through stock exchange announcements via the Regulatory News Service (RNS) and can be found on the Company's website at <http://www.bushveldminerals.com/regulatory-news-rns/>. The website also has a wealth of information for existing and potential shareholders, including a corporate video, project descriptions, investor presentations, financial and technical reports, analyst research, webcasts and certain shareholder information.

Any shareholder enquiries can be directed to [info@bushveldminerals.com](mailto:info@bushveldminerals.com) and to [chika.edeh@bushveldminerals.com](mailto:chika.edeh@bushveldminerals.com).



	<b>2019</b>
<b>Roadshows</b>	
London	March
Cape Town and Johannesburg	May
New York	June
London and New York	October
<b>Site visits</b>	
Vametco and VRFB Eskom Site Visit	January
<b>Reporting</b>	
Q1 2019 Operational Updates	May
Q2 2019 Operational Updates	July
2018 Full year Results	June
H1 2019 Results	September
Q3 2019 Operational Updates	November
Q4 2019 Operational Updates	January 2020
<b>Annual General Meeting</b>	July
<b>Conferences</b>	
Mining Indaba, Cape Town	February
121 Mining Investment, Cape Town	February
Benchmark Mineral Intelligence World Tour (Standard Bank), Cape Town	February
Africa Energy Indaba, Johannesburg	February
28th BMO Global Metals & Mining – Hollywood, Florida	February
World Bank's Batteries, Energy Storage and the Renewable Future Workshop, Cape Town	February
Power & Electricity World Africa, Johannesburg	March
Exane BNP Paribas: Natural Resources Conference, London	March
Vanitec, Chengdu	April
Africa Utility Week, Cape Town	May
Benchmark Minerals World Tour, London	June
Junior Indaba, Johannesburg	June
World Bank Energy storage partnership, Paris	June
Macquarie Conference, London	June
International Flow Battery Forum, Lyon	July
RMB Morgan Stanley Off Piste Investor Conference, Cape Town	September
World Economic Forum on Africa, Cape Town	September
Power Week Africa, Johannesburg	September
CRU Ryan's Notes Ferroalloys – Orlando, Florida	October
South Africa Energy Conference, Johannesburg	October
Johannesburg Indaba, Johannesburg	October
Macquarie Green Energy Conference (New Frontiers GEC), London	October
African Solar Energy Forum, Accra	October
South African Investment Conference, Johannesburg	November

## Governance

# Corporate Governance Report continued

### Principle 3:

#### Take into account wider stakeholder and social responsibilities and their implications for long-term success

Bushveld Minerals recognises that successful execution of its business strategy requires it to build and maintain meaningful, well-functioning relationships with its multiple stakeholders. These include government, regulatory authorities, funders, partners, employees, contractors, customers and, very importantly, the communities in which our projects and operations are based. We see our socio-economic role going beyond the creation of jobs and revenue for South Africa, to acting as an agent for transforming these communities.

More information on this can be found within our Sustainability Report on page 54.

### Principle 4:

#### Embed effective risk management, considering both opportunities and threats, throughout the organisation

The Board has primary responsibility for establishing and maintaining the Company's internal controls and risk management systems, which are designed to meet the particular needs of the Company and the risks to which it is exposed. The responsibility for reviewing the adequacy and effectiveness of these controls and risk management systems has been delegated to the Audit Committee. While the Board is aware that no system can provide absolute assurance against material misstatement or loss, in view of the increased activity and further development of the Company, continuing reviews of internal controls are undertaken to ensure that they are adequate and effective.

To manage the Company's inherent risk, we have conducted a detailed risk analysis, together with risk mitigation strategies. The risks that are detailed on page 50 are the principal risk factors that could impact the Company's ability to deliver on our long-term strategic objectives. As such, we have put significant effort into analysing these risks and putting in place initiatives to manage them.

The Board considers that the frequency of Board meetings and the level of detail presented to the Board for its consideration in relation to the operations of the Company provide an appropriate process to identify, evaluate and manage significant risks relevant to the operations on a continuous basis. This is coupled with the reports received from the Company's external, independent auditor, via the Audit Committee, on the state of its internal controls and whether any perceived gaps in the control environment require remedial action.

There is currently no internal audit function, however, to align with the Company's growth trajectory the Audit Committee will be appointing an internal auditor in due course.

### Principle 5:

#### Maintaining the Board as a well-functioning, balanced team led by the Chair

The overriding objective of the Bushveld Minerals' Board is to direct the business to ongoing success and deliver long-term shareholder value. To achieve this, an efficient and effective operating model is required, coupled with clear communication which promotes confidence and trust.

The 2019 Board consisted of a Non-Executive Chairman (Ian Watson), a Senior Non-Executive Director (Michael Kirkwood), two additional Non-Executive Directors (Jeremy Friedlander and Anthony Viljoen) and two Executive Directors (the Chief Executive Officer and the Finance Director, Fortune Mojapelo and Tanya Chikanza, respectively). The Chairman and two of the non-Executive Directors are deemed to be independent. The Board is satisfied that it has achieved a suitable balance between independence, on the one hand, and knowledge of the Company on the other, enabling it to discharge its duties effectively. Biographies and details of the committees of which each of the directors is a member are on pages 74 and 75.

The Board holds formal quarterly meetings and meets outside those events as and when necessary. The executive directors work full-time for the Company and the expectation is that the non-executive directors will spend 30 days per annum on work for the Company.

The Board met formally four times during the year ended 31 December 2019, with an additional eleven meetings held to consider matters falling outside the quarterly cycles. Attendance was as follows:

Ian Watson	15
Michael J. Kirkwood	13
Jeremy Friedlander	13
Anthony Viljoen	14
Fortune Mojapelo	15
Geoff Sproule (resigned 30 September 2019)	7
Tanya Chikanza (appointed 1 October 2019)	5

The Board is supported by Audit, Remuneration, Nomination and Disclosure Committees that operate within specific terms of reference and are described further in Principle 9 below.

### Principle 6:

#### Ensure that the Directors pool the necessary up-to-date experience, skills, and capabilities

The Directors of Bushveld Minerals have been appointed to the Company because of the skills and experience they offer, as well as their personal qualities and capabilities. Full biographical details of the Directors are included on pages 74 and 75, which provides an indication of their breadth of skills and experience. The Board is also able to engage independent advisors should the need arise.

The Board is determined to ensure that it continues to have the right balance of directors. This is a continuous process, with the Nomination Committee regularly reviewing the composition of the Board to ensure that it has the necessary breadth and depth of skills to support the ongoing strategy of Bushveld Minerals. In addition to this, at least one-third of directors retire by rotation and offer themselves for re-election every year, which is voted on by shareholders at the AGM.

At the end of September 2019, Geoff Sproule stepped down from the Board as Finance Director and was replaced by Tanya Chikanza. As the biographical details on page 74 show, Tanya is a Chartered Accountant who has extensive experience in managing publicly-listed companies' relationships with financial markets. She has thirty years' experience in international equity and debt capital markets, strategy, corporate finance, and audit. Her deep understanding of the South African mining industry, along with her experience in engaging debt and equity investors, comes at an important time as the Company moves into its next stage of development.

After year-end, the Company appointed Dolly Mokgatle as an Independent Non-Executive Director to the Board. Dolly's extensive expertise in respect of South Africa's power network, coupled with her in-depth knowledge of energy policy, will be valuable to the Company as it pursues its energy strategy. In addition, her corporate experience, derived from participation in numerous company boards over the years, strengthens our governance. Her full biography can be found on page 75.

### Principle 7:

#### Evaluate Board performance based on clear and relevant objectives, seeking continuous improvement

The Board recognises the importance of regularly reviewing the effectiveness of its performance and the ability of the members to work together to achieve the Company's objectives, as well as that of its committees and the individual directors.

Responsibility for assessing and monitoring the performance of the executive directors lies with the independent non-executive directors, using agreed key performance indicators. Further detail can be found in our Remuneration Report on page 80.

The Board as a whole evaluates its own performance internally, and that of the committees, and uses the process to identify opportunities for improvement. The Nomination Committee is responsible for reviewing the structure, size, and composition (including skills, knowledge, experience and diversity) of the Board and making recommendations to the Board on any changes. Succession planning for directors and other senior executives is also the responsibility of the Nomination Committee.

## Governance

# Corporate Governance Report continued

### Principle 8:

#### **Promote a corporate culture that is based on ethical values and behaviours**

In building a strong governance framework, we have aimed to ensure that ethical values and behaviours are embedded within the culture of Bushveld Minerals. The Board is very conscious that the tone and culture that it sets will impact all aspects of the Group and the way that employees behave and operate.

The Company seeks to ensure that responsible business practices are fully integrated into the management of its operations, which is essential for operational excellence and to deliver Bushveld's strategy.

All directors and employees are bound by a confidentiality agreement that forms part of their service agreements or employment contracts, as the case may be.

In addition, the Company has the following policies in place:

#### Anti-Corruption and Bribery Policy

It is the Company's policy to conduct all of its business in an honest and ethical manner. We take a zero-tolerance approach to bribery and corruption and are committed to acting professionally, fairly and with integrity in all our business dealings and relationships, wherever we operate.

#### Share Dealing Policy

The Company has adopted a policy for dealing in its shares, which incorporates all obligations under both Rule 21 of the AIM Rules for Companies and Article 19 of the Market Abuse Regulations.

The policy explains the circumstances in which shares in the Company can be bought or sold by directors and relevant employees, along with the requirements and procedures that have to be followed when dealing in the Company's shares. In addition to this, the Company has a Memorandum on Inside Information providing additional information on applicable laws and possible sanctions, market abuse provisions and communication requirements.

#### Social Media Policy

While the Company recognises the benefits that social media engagement can have in helping it reach out to stakeholders, this policy is in place to facilitate the responsible use of social media and minimise the risks to the Company through its misuse, which can bring a company into disrepute.



**Principle 9:****Maintain governance structures and processes that are fit for purpose and support good decision-making by the Board**

The Board's role is to provide strategic leadership to the Company within a framework of prudent and effective controls enabling risk to be assessed and managed.

Matters reserved for the attention of the Board include, *inter alia*:

- Board membership and powers, including the appointment and removal of Board members and determining the terms of reference of the Board;
- Establishing the overall control framework, including the operating model that defines how to deliver and execute strategy by defining the structures in which to operate;
- Key commercial matters, including the approval of the budget and financial plans, changes to the Company's capital structure, the Company's business strategy, acquisitions and disposals of businesses and capital expenditure;
- The approval of financial statements, dividends and significant changes in accounting practices; and
- Stock exchange-related issues, including the approval of the Company's announcements and communications with both shareholders and the stock exchange.

The Board is supported by committees that have the necessary skills and knowledge to discharge their duties and responsibilities effectively. These committees consist mostly of non-executive directors. Descriptions of the various committees are provided below.

**Audit Committee**

The Audit Committee has responsibility for monitoring the integrity of the financial statements of the Company, including its annual and half yearly reports, interim management statements, preliminary results announcements and any other announcements relating to financial performance before they are presented to the Board for approval. In addition to this, its duties include reviewing and reporting on the Company's internal financial controls and risk management systems.

The Audit Committee is responsible for recommending the appointment of the auditors and reviewing and monitoring their independence and objectivity. The Committee has unrestricted access to the auditors.

Meetings are held at least three times a year at appropriate intervals in the financial reporting and audit cycle, and as otherwise required.

**Remuneration Committee**

The Remuneration Committee determines the framework for the remuneration of the Company's Chairman and executive directors and, as appropriate, other senior management, including pension entitlements, share option schemes and other benefits.

Remuneration of non-executive directors is a matter for the Board. No directors or senior managers are involved in any decisions on their own remuneration.

**Disclosure Committee**

The purpose of the Disclosure Committee is oversight of the implementation of the governance and procedures associated with the assessment, control, and disclosure of inside information in relation to the Company.

**Nomination Committee**

The Nomination Committee is responsible for reviewing the structure, size and composition of the Board, making recommendations to the Board with regard to any changes, succession planning for directors and senior management, preparing a description of the role and capabilities required for a particular appointment and nominating candidates to fill Board positions as and when they arise. The Committee also makes recommendations to the Board concerning membership of the Audit, Remuneration and Disclosure Committees, in consultation with the Chairman of each of those committees.

## Governance

# Corporate Governance Report continued

### **Principle 10:**

#### **Communicate how the Company is governed and is performing by maintaining a dialogue with shareholders and other relevant stakeholders**

The Board is committed to providing effective communication with shareholders and attaches great importance to delivering clear and transparent information on the Company's strategy, activities and financial position.

Results of the AGM, significant developments and regular operational updates are disseminated through stock exchange announcements via RNS and can be found on the Company's website at <http://www.bushveldminerals.com/regulatory-news-rns/>.

The Company's website has a wealth of corporate information, including a corporate video, project descriptions, investor presentations, financial and technical reports, analyst research, webcasts and certain shareholder information.

The Head of Investor Relations is the primary point of contact for shareholders and plays a key part in encouraging shareholder interaction and listening to feedback.

Any shareholder enquiries can be directed to [info@bushveldminerals.com](mailto:info@bushveldminerals.com) and to [chika.edeh@bushveldminerals.com](mailto:chika.edeh@bushveldminerals.com).

# Report of the Audit Committee

## Report of the Audit Committee

This report provides details of the role of the Audit Committee and the duties it has undertaken during the year under review.

The Audit Committee comprises Independent Non-Executive Directors Michael Kirkwood, Jeremy Friedlander and Non-Executive Director Anthony Viljoen. Post year end, the Board added to the Audit Committee, through the appointment of Dolly Mogkatle. The Audit Committee meets at least three times a year at appropriate intervals in the financial reporting and audit cycle and as otherwise required. Other directors including the Finance Director and other individuals, as well as the external auditor, may be invited to attend all or part of any meeting, as and when required.

The members of the Audit Committee have relevant financial experience through the various leadership roles they have held as set out in their biographical details on pages 74 and 75.

The Audit Committee has access to sufficient resources in order to carry out its duties, including access to the Company Secretary for assistance as required. The committee gives due consideration to applicable laws and regulations, the Quoted Companies Alliance Corporate Governance Guidelines for Small and Mid-Sized Quoted Companies and the requirements of the London Stock Exchange's rules for AIM companies, as appropriate.

The Audit Committee will review its effectiveness periodically and will conduct an annual review of its constitution and terms of reference to ensure it is operating at maximum effectiveness. Changes arising from these reviews are recommended to the Board for approval.

The Chairman of the committee reports formally to the Board on its proceedings after each meeting on all matters within its duties and responsibilities, and how it has discharged its responsibilities.

## Responsibilities of the Audit Committee

Key duties of the Audit Committee include:

- monitoring the integrity of the Company's financial reporting;
- reviewing the consistency of, and any changes to, accounting policies both on a year-on-year basis and across the Company and its group and reviewing whether management has followed appropriate accounting standards and made appropriate estimates and judgements, taking into account the views of the external auditor;
- reviewing and reporting to the Board of Directors on significant financial reporting issues and judgements which they contain, having regard to the matters communicated to it by the auditor.
- reviewing the Company's internal financial controls and internal control and risk management systems;
- reviewing the adequacy and security of the Company's whistleblowing facilities for employees and contractors, and ensuring that these facilities allow for investigation and appropriate follow up action in respect of any reports made;
- reviewing the Company's systems, procedures and controls for detecting fraud, the Company's bribery and money laundering systems and controls, and the adequacy and effectiveness of its compliance function;
- considering annually whether there is a need for an internal audit function, taking into account the growth of the Company, the scale, diversity and complexity of the Company's activities and the number of employees, as well as cost and benefit considerations;
- making recommendations to the Board (to be put to shareholders for approval at the Annual General Meeting) in relation to the appointment of the external auditor;
- managing and overseeing the relationship with the external auditors, including their terms of engagement and remuneration; and
- meeting regularly with the external auditors and reviewing their findings.

## Governance

# Report of the Audit Committee continued

### Financial reporting

The Audit Committee reviewed and assessed the Company's financial reporting in the period, including its half-year report, results announcements and this Annual Report. This review included an assessment of the consistency of, and changes to, accounting policies, estimates and judgements; the methods used to account for significant or unusual transactions; the appropriateness of the accounting standards used; the clarity and completeness of disclosures and the context in which statements are made; and a review of material disclosures regarding audit and risk management in the financial statements, including in the strategic report and this corporate governance statement.

In reviewing the Company's financial statements, the Audit Committee has considered the Company's accounting policies, particularly in relation to the treatment of the Vanchem acquisition and the consequential gain on bargain purchase arising from the acquisition, as well as the accounting estimates and judgements as described on pages 116 and 117. A further significant focus for the Audit Committee has been the impact of Covid-19 on the going concern assumptions and viability of the Group. The potential risks to the Group include a decline in vanadium prices as well as operational stoppages, resulting in reduced ability to sell its products as well as volatile market conditions, all of which could impact the Group's cashflows and ability to comply with its financial covenants. In mitigation, the Group has modelled a variety of scenarios around cash preservation and cost containment that show the Group's ability to continue to operate sustainably.

In addition to the publicly-released reports, the Committee's review covered management reports as well as reports from and discussions with the external auditor. The Audit Committee provided comment and feedback on this Annual Report before finalisation and approval.

The review concluded that, taken as a whole, this Annual Report is fair, balanced and understandable and provides the information necessary for shareholders to assess the Company's position, performance, business model and strategy.

### Internal audit

The Company does not currently have an internal audit function. The Audit Committee considers annually whether there is a need for an internal audit function, taking into account the growth of the Company, the scale, diversity and complexity of the Company's activities and its number of employees, as well as cost and benefit considerations.

The Audit Committee has concluded that, as a result of the acquisition of Vanchem and the various other growth initiatives in the group, there is now a need for an internal audit function. An assessment is under way to determine the costs and benefits of insourcing or outsourcing the function, after which the appointment will be made. The role is expected to be filled in the 2020 financial year.

### External auditor

The Audit Committee is responsible for overseeing the Company's relationship with the external auditor.

The Board appointed RSM UK Audit LLP as the Company's auditor in the period and the Audit Committee has recommended to the Board that shareholders be asked to approve the re-appointment of RSM UK Audit LLP as auditor at the Annual General Meeting.

The Audit Committee discharged its duties, in accordance with its terms of reference, during the period to 31 December 2019, including:

- approving the engagement of the external auditor, reviewing and approving the annual audit plan;
- meeting regularly with the external auditor;
- reviewing the findings of the audit of the financial statements for the period ended 31 December 2019 with the external auditor;
- reviewing the management representation letter requested by the external auditor before it was signed by management and management's response to the auditor's findings and recommendations; and
- reviewing the effectiveness of the audit process.

### Non-audit services

A policy is in place to govern the supply of non-audit services by the external auditor, in order to safeguard independence and objectivity. The policy sets out the recommended maximum fees that should be payable for non-audit services as a percentage of the audit fee and contains guidelines as to the circumstances where a proposed engagement should be subject to a tender process.

In the current period, following the appointment of RSM UK Audit LLP as statutory auditor, there were no fees paid for non-audit services.



## Whistleblowing

The Company has adopted a whistleblowing policy to ensure that staff are able to raise concerns about malpractice or impropriety without fear of reprisals. The policy encourages all staff to maintain high standards in their work and to report any wrongdoing which falls short of these standards. It commits the Company to treat all such disclosures in a confidential and sensitive manner. The group receives reports regarding any significant allegations made, details of investigations and the outcomes. No significant issues were reported during the year.

## Risk management and internal control

The Audit Committee is mandated to keep the Company's internal control and risk management systems under review. Internal controls and risk management systems are in place to support the integrity of the financial reporting process and the preparation of accounts. These systems include policies and procedures to ensure that adequate accounting records are maintained and transactions are recorded accurately and fairly to permit the preparation of financial statements in accordance with IFRS.

The key elements of the Company's system of internal controls are discussed on page 100 of this report.

The Audit Committee's review of the system of internal controls is supplemented by reports from the external auditors regarding issues identified during their engagement, particularly those relating to control weaknesses, and the responses from management.

**Michael J. Kirkwood**  
**Audit Committee Chair**  
23 June 2020  
Bushveld Minerals

## Board of Directors

### Ian Watson (77)

**Independent Non-Executive  
Chairman**

**Appointed to Board**  
March 2012

#### Experience

A mining engineer with experience in the South African mining sector.

A professional engineer and a member of the Engineering Council of South Africa.

Previous roles include Managing Director of Northam Platinum.

A former CEO of Platmin Limited and International Ferro Metals (SA).

Consulting Engineer at Gold Fields of South Africa Limited.

#### Qualifications

National Diploma in Mining from Witwatersrand Technical College School of Mines.

Mine Manager's Certificate of Competency, Republic of South Africa.

#### Board Committee membership

Chairman of the Disclosure and Nomination Committees and a member of the Remuneration Committee.

### Fortune Mojapelo (44)

**Co-founder and Chief  
Executive Officer**

**Appointed to Board**  
March 2012

#### Experience

Co-founder and Chief Executive of Bushveld Minerals, a role he has held from the inception of the Company.

Co-founder and Director of Bushveld Energy.

A founding shareholder of VM Investment Company, a principal investment and advisory company focusing on mining projects in Africa.

Played a leading role in the origination, establishment and project development of several junior mining companies in Africa.

Worked at McKinsey & Company as a consultant on corporate strategy and organisational development in several sectors in South Africa and Nigeria.

#### Qualifications

BSc (Actuarial Science) from the University of Cape Town.

#### Board Committee membership

Disclosure and Nomination Committees.

### Tanya Chikanza (54)

**Finance Director**

**Appointed to Board**  
October 2019

#### Experience

Has a global and market-facing perspective with 30 years in international equity and debt capital markets, strategy, corporate finance and audit.

Previously spent nine years at dual-listed Lonmin Plc where, as Executive Vice President of Corporate Strategy, Investor Relations and Corporate Communication, she helped to steer Lonmin's return to profitability in 2018 and led the recent all-share transaction with Sibanye Stillwater.

Executive Director at Smith's Corporate Advisory in London.

Vice President Corporate Finance at JP Morgan Cazenove.

#### Qualifications

Qualified Chartered Accountant.

Member of the Institute of Chartered Accountants of Zimbabwe.



## Anthony Viljoen (43)

### Non-Executive Director

#### Appointed to Board

March 2012, Executive Director.  
Appointed Non-Executive Director in  
November 2017

#### Experience

Chief Executive Officer of AIM-listed  
AfriTin Mining Limited since 2017.

Executive Director of Bushveld  
Minerals from March 2012 to  
November 2017.

A mining entrepreneur and founding  
shareholder and director of VM  
Investment Company, a principal  
investment and advisory company  
focusing on mining.

Involved in the establishment and  
project development of a number of  
junior mining companies across Africa.

Previously worked at Deutsche Bank,  
Barclays Capital in London and Loita  
Capital Partners.

#### Qualifications

BSc (Business and Agricultural  
Economics) from the University  
of KwaZulu-Natal.

Postgraduate Diploma in Finance  
Banking and Investment Management  
from the University of KwaZulu-Natal.

#### Board Committee Membership

Audit Committee.

## Jeremy Friedlander (65)

### Independent Non- Executive Director

#### Appointed to Board

March 2012

#### Experience

Established McCreedy Friedlander  
in 1993, which became one of the  
premier property agencies in South  
Africa and listed it in 1998 on the JSE.

A director of Onslow Resources  
(oil and gas in Namibia and Yemen).

Business development director of a  
number of Avana companies involved  
in uranium, coal, gold, oil and gas and  
industrial minerals.

Recently involved in the establishment  
of a number of natural resource  
projects, predominantly in Africa  
and South America.

#### Qualifications

BA LLB from the University  
of Cape Town.

#### Board Committee Membership

Audit, Disclosure and  
Remuneration Committees.

## Michael J. Kirkwood (73)

### Senior Independent Non-Executive Director

#### Appointed to Board

April 2018

#### Experience

Chairman of corporate advisory firm  
Ondra LLP and also serves on the  
Board of AngloGold Ashanti Limited.

Previously chairman of Circle  
Holdings plc.

Served on the boards of UK Financial  
Investments, Eros International plc,  
Kiddle plc and as Deputy Chairman  
of the PricewaterhouseCoopers  
Advisory Board.

Spent 31 years with Citigroup, latterly  
as UK chairman.

Held appointments as president of  
the Chartered Institute of Bankers,  
deputy chairman of the British Bankers  
Association, and as inaugural chairman  
of British-American Business.

Was appointed a Companion of the  
Order of St Michael and St George in  
the Queen's Birthday Honours in 2003.

#### Qualifications

Graduate of Stanford University,  
California.

#### Board Committee Membership

Chairman of the Audit and  
Remuneration Committees  
and a member of the  
Nomination Committee.

## Dolly Mokgatle (64)

### Independent Non- Executive Director

#### Appointed to Board

March 2020

#### Experience

A former Managing Director of the  
Transmission Group at Eskom  
and held various roles, including  
Executive Director of Corporate  
Affairs, Senior General Manager:  
Growth and Development and  
Acting Legal Manager.

Served on the steering committee of  
the Electricity War Room for electricity  
supply industry restructuring, both  
within and outside Eskom.

From 2005 until 2009, she held the role  
of Deputy Chairperson of the National  
Energy Regulator of South Africa and  
chaired the Electricity Committee.

Current chairperson of Total South  
Africa and a Non-Executive Director  
of Rothschild (South Africa), Bid  
Corporation and Telkom SA.

Has served as a Non-Executive  
Director of Kumba Iron Ore, Sasfin  
Bank and Hudaco Industries, and  
chaired the Board of Zurich Insurance  
Co South Africa.

#### Qualifications

B Proc from University of the North,  
South Africa.

LLB (Law) – University of  
the Witwatersrand.

Higher Diploma in Tax Law –  
University of the Witwatersrand.

Attorney of the High Court of  
South Africa (non-practising).

#### Board Committee Membership

Audit Committee.





## Executive Management Team

### Fortune Mojapelo (44)

**Co-founder and Chief Executive Officer since March 2012**

#### Experience

Co-founder and Chief Executive of Bushveld Minerals, a role he has held from the inception of the Company.

Co-founder and Director of Bushveld Energy.

A founding shareholder of VM Investment Company, a principal investment and advisory company focusing on mining projects in Africa.

Played a leading role in the origination, establishment and project development of several junior mining companies in Africa.

Worked at McKinsey & Company as a consultant on corporate strategy and organisational development in several sectors in South Africa and Nigeria.

#### Qualifications

BSc (Actuarial Science) from the University of Cape Town.

### Tanya Chikanza (54)

**Finance Director since October 2019**

#### Experience

Has a global and market-facing perspective with 30 years in international equity and debt capital markets, strategy, corporate finance and audit.

Previously spent nine years at dual-listed Lonmin PLC where, as Executive Vice President of Corporate Strategy, Investor Relations and Corporate Communication, she helped to steer Lonmin's return to profitability in 2018 and led the recent all-share transaction with Sibanye Stillwater.

Executive Director at Smith's Corporate Advisory in London.

Vice President Corporate Finance at JP Morgan Cazenove.

#### Qualifications

Qualified Chartered Accountant.

Member of the Institute of Chartered Accountants of Zimbabwe.

### Bertina Symonds (53)

**General Manager of Vametco since April 2019**

#### Experience

Over 20 years' experience in mining and beneficiation.

A former General Manager of the Nkomati Nickel Mine owned by JSE-listed African Rainbow Minerals, a role she held from 2015.

Possesses a strong leadership, production and commercial background and a solid track record in general management, stakeholder engagement and operations improvement.

Held a range of other senior positions within Nkomati, including as Head of the Department of Concentrate Production and Concentrate Production Manager.

#### Qualifications

BSc Honours (Chemistry) from Rand Afrikaans University (now University of Johannesburg).

Master of Business Leadership from the University of South Africa.





## André Strydom (43)

**General Manager of Vanchem since August 2019**

### Experience

Qualified Chemical Engineer with experience in project development, construction, and commissioning.

Over 18 years of mining and beneficiation experience.

Previously General Manager at Sadiola and Yatela mines operated by AngloGold Ashanti, a role he held since 2012.

### Qualifications

B.Eng (Chemical Engineering) specialising in Mineral Processing from the Potchefstroom University for Christian Higher Education (now known as North West University).

MBA from University of Liverpool.

## Mikhail Nikomarov (39)

**Chief Executive Officer of Bushveld Energy since April 2015**

### Experience

Over 15 years of international business experience in energy and finance, including as CEO and co-founder of Bushveld Energy since 2015.

Seven years with McKinsey & Company in Moscow and Johannesburg, advising national governments, utilities and manufacturers on growth strategy and policy and leading operational turnarounds in the energy sector.

Three years as Portfolio Manager at Sovereign Bank, USA (now Santander Bank).

Chairman of the Board, South African Energy Storage Association.

Chair, Energy Storage Committee, Vanitec (the global association of vanadium producers).

### Qualifications

BA (History) and BA (Economics) from University of Massachusetts.

Diploma in Economics from London School of Economics.

MBA from INSEAD.

## Prince Nyati (42)

**Chief Executive Officer of Lemur Holdings since November 2017**

### Experience

Over 15 years' experience developing energy and mining projects in sub-Saharan Africa.

Started his career in oil and gas and petrochemicals in the US and has worked in Zambia, South Africa, India and Singapore for companies including Shell Oil, Total Petrochemicals, Eskom and Tata Power.

As Africa Group Head at Tata Power, Prince evaluated over 100 mine assets and 50 power opportunities in 30 countries.

Worked on transactions representing over US\$1 billion in value.

Other experience includes commodity trading, specialising in domestic and seaborne coal.

Involved in the development and financial close of a 120 MW hydro-electric project in Zambia as well as two wind farm projects (235 MW) in South Africa.

Served on the boards of Cennergi and the Tsitsikamma and Amakhala Wind Projects.

### Qualifications

BA from the University of Zambia.

MBA from the University of Houston.



## Executive Management Team

### Sihle Mdluli (39)

#### Director Strategy and Corporate Services since June 2019

##### Experience

Former Director and Operations Transformation leader at Deloitte Africa's Strategy and Operations practice.

Spent over nine years assisting clients in defining and executing their strategies and improving their cost per output unit in a sustainable manner.

Has extensive experience in building stakeholder value in the mining and public sectors, focusing on Strategy Formulation and Execution, Business Model Transformation, Recovery and Turnaround Strategy, Capital Projects Efficiency, Collaborative Facilitation and Stakeholder Engagement.

Prior to Deloitte, she spent over six years at De Beers, where she acquired experience in mining, plant operations, general management and diamond sales.

##### Qualifications

BSc Engineering (Metallurgy) from the University of the Witwatersrand.

MBA from Wits Business School.

Program for Management Development from Gordon Institute of Business Science.

### Ken Greve (59)

#### Director Corporate Development since January 2019

##### Experience

Mining Engineer with extensive experience in project management, project development, business and company valuations, mergers and acquisitions, logistics contracts and specialised financing, particularly in the resources industry.

Held senior corporate finance and investment banking roles at Gold Fields of South Africa, JP Morgan, Kumba Resources and BHP Billiton, where he was Vice President of Strategy & Business Development in South Africa.

Previously held various directorships, including at Richards Bay Minerals, where he oversaw the Black Empowerment transaction.

Member of the South African Institute of Mining and Metallurgy.

##### Qualifications

Mining Engineering degree from the University of the Witwatersrand.

BCom Honours (Economics) from the University of South Africa.

### Viki Rapelas (41)

#### Director Legal and Compliance since January 2019

##### Experience

Admitted Attorney of the High Court of South Africa since 2004.

Admitted Notary and Conveyancer since 2012.

Legal Advisor to the Bushveld Minerals group since 2007.

18 years of transactional advisory, mergers and acquisitions and general corporate and commercial law experience.

##### Qualifications

BProc and LLB from Rand Afrikaans University (now University of Johannesburg).





## Mpume Makhubela (42)

**Group Human Resources Director since September 2017**

### Experience

Founding Chief Executive at Huvest People Solutions since October 2014.

Divisional Director for Human Resources and Marketing at Liberty Corporate for three years.

Spent a year at Vodacom as Executive Head of Human Resources.

Spent a total of six years in the Alexander Forbes Group in various roles, including Head of Human Resources at Investment Solutions and AF Risk and Insurance services.

Human Resources Manager at Nedbank.

Started her career in 1996, with seven years as a Human Resources Consultant at Santam.

### Qualifications

BTech in Human Resources from Tshwane University of Technology.

International Executive Development Management Certificate from the University of the Witwatersrand and London Business School.

A Certified Remunerations Practitioner with SARA and World at Work.

Human Resources Excellence Programme Certification from IMD (Switzerland).



## Technical Advisors

### Professor Morris Viljoen (79)

#### Experience

Over 30 years' experience in the mining industry, following a role with JCI in base metals (including nickel, copper antimony, gold and platinum) exploration and mining in southern Africa and as consulting geologist for Rustenburg Platinum Mines (part of Anglo American Platinum).

Held the position of Professor of Mining Geology at the University of Witwatersrand for 13 years and established the Centre for Applied Mining and Exploration Geology, which has identified and developed mineral projects including the Amalia and Blaaubank lode gold deposits, the Akanani/AfriOre Platinum Project and the Uramin Uranium Project.



### Professor Richard Viljoen (79)

#### Experience

Over 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 Leeudoorn 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.

Has also completed numerous competent person's reports for projects including the Witwatersrand South Reef project, Doornkop mine project and the Uramin uranium project.



## Governance

# Remuneration Report

## PART 1: BACKGROUND STATEMENT FROM THE REMUNERATION COMMITTEE CHAIRMAN

### Dear Shareholders,

On behalf of the Bushveld Minerals Limited Remuneration Committee (the 'Committee') I am pleased to provide you with the remuneration report for the year ended 31 December 2019.

Our aim in preparing this report is to ensure that our shareholders and stakeholders better understand our approach to remunerating executives and the wider employee base. This includes the key principles we use to determine our reward framework and ensure that our executives are focused on delivering long-term shareholder value consistent with our vision and strategy.

Following the progress made in respect of enhanced disclosure during the 2018 review period, and in light of Bushveld's future plans to list on the JSE, this report is presented in the King IV™ recommended format, while taking cognisance of the requirements of being an AIM-listed company during the review period. As Bushveld is not subject to JSE listing requirements, the policy and implementation reports are not put to non-binding shareholder votes.

The Committee is pleased to report on the successful implementation of our new short- and long-term incentives during 2019. This provided a solid base for crafting the Group and subsidiary performance measures for 2020.

### Business performance overview

The table below outlines key performance indicators for the Bushveld Minerals Group over a two-year period. The Group reported remarkable underlying performance in its subsidiaries in the form of production volumes and operational improvements during the 2019 performance year. These improvements did not however translate into commensurate improvements in the financial indicators owing to a marked decline in vanadium prices during 2019 relative to 2018. Further detail on the Group's performance is detailed in the Finance Director's statement. Please refer to page 34 of this report for further analysis and an account of the Group's financial performance.

INDICATOR (US\$)	FY19	FY18
EBIT	<b>22,253,811</b>	95,175,078
EBITDA	<b>32,641,956</b>	101,214,417
CLOSING CASH & CASH EQUIVALENTS	<b>34,011,557</b>	42,019,123
ADJUSTED ROIC*	<b>33%</b>	54%
CLOSING SHARE PRICE	<b>20p</b>	38.75p

\* adjusted ROIC includes the bargain gain benefit from the strategic acquisition, which was acquired at a consideration below the fair value of the business.

### Role of the Committee and key decisions taken

The Committee was established by the Bushveld Minerals Board ("Board") to act as the Remuneration Committee of the Group and its subsidiaries (the "Group"). The Committee is responsible for and oversees the governance of all Group remuneration matters. It is specifically responsible for determining the individual remuneration of directors (executive and non-executive) and senior executives. In order to discharge its responsibility in this regard, the Committee is required to:

- Oversee the establishment of a remuneration policy that will promote the achievement of strategic objectives, encourage individual performance and support Bushveld's long-term interests. The final approval of the policy rests with the Board;
- Determine the remuneration framework applicable to executives of Bushveld Minerals; and
- Review the Group's remuneration strategy and its implementation on an annual basis.

The Committee successfully implemented the new remuneration policy presented during 2018. In the 2019 financial period the Committee delivered the following:

#### Executive remuneration

- Review of the total remuneration against external benchmarks;
- Recommendation of individual remuneration for executives;
- Reviewed and approved the package of the incoming Finance Director; and
- Reviewed and considered director remuneration best practices to ensure that Bushveld's current practices remain progressive and relevant.



**Non-executive director remuneration**

- a. Reviewed and benchmarked the non-executive directors' fees for onward approval by the Board. No adjustments were recommended for 2020.

**Group-wide remuneration matters**

- a. Review of the Group-wide remuneration policy;
- b. Consideration of fair and responsible pay (see details below);
- c. Review of retirement and risk benefits across the Group.

**Performance – relating to forthcoming performance cycle**

- a. Setting short-term performance targets;
- b. Setting performance targets for LTI awards and approving LTI awards.

**Compliance**

- a. Reviewed and approved the Committee's annual work plan;
- b. Reviewed and approved the Remuneration Report for publication aligned to best practice.

**Fair and Responsible Remuneration**

During the past year the Committee actively engaged on the subject of fair and responsible remuneration. The Committee's stance is that 'fair' remuneration is impartial and free from discrimination. It is also free from self-interest, prejudice or favouritism.

It is rational, and not based on an irrational or emotional basis. 'Fair' does not mean 'the same' and remuneration levels will differ according to a number of factors, such as productivity, performance, skill, experience, risk and complexity, degree of challenge, level of responsibility of decision making, consequence and impact on the organisation. Equal contributions to performance should, however, be rewarded equally. The Company's policy on fair and responsible remuneration can be summarised as follows:

**Responsible pay**

- a. All variable pay is subject to the achievement of stretched performance conditions, carefully calibrated and selected by the Committee, ensuring a close alignment with shareholder value creation over the long term;
- b. A portion of the Short-term Incentive (STI) is deferred and delivered as shares. The Long-term Incentive (LTI) is subjected to a post-vesting holding period. Both these measures ensure longer shareholder alignment;
- c. The link between pay and performance is publicly disclosed by the Company in its remuneration report;
- d. The Committee and ultimately the Board reviews and approves the remuneration of directors and senior management, ensuring independence and transparency;
- e. Although remuneration is benchmarked, affordability is a key consideration when making pay adjustments. Variable pay is subject to reduction (malus) and recoup (claw-back). Executives are also expected to build and maintain a minimum shareholding in the Company.

**Fair pay**

- a. Proper job profiles are in place for all roles within the organisation. Jobs are evaluated in accordance with a robust methodology and employees are remunerated in accordance with the determined pay scales;
- b. The Group is committed to eliminating any existing unfair discrimination/unjustified differentiation within its remuneration dispensation and preventing future practices of discrimination/differentiation;
- c. Horizontal fairness is applied and employees performing the same or similar job requirements at the same or similar level of performance receive similar remuneration, aligned to the Group pay scale;
- d. Vertical fairness is applied by assessing the pay ratio between the CEO and the pay levels of employees below the executive level;
- e. Pay is well administered, with employees paid accurately, on time and in a way that is convenient.

## Governance

# Remuneration Report continued

## PART 1: BACKGROUND STATEMENT FROM THE REMUNERATION COMMITTEE CHAIRMAN CONTINUED

The Company conducted the following benchmarks and pay analysis during the period to test the principles of responsible and fair pay:

### Gini coefficient

- a. An internal Gini-coefficient was determined on a total reward basis and it was established that the Company's Gini-coefficient is more favourable than the South African mining-specific and SA National benchmarks (based on the PwC REMchannel® database);
- b. The Committee will continue to monitor this on an annual basis.

### Executive pay benchmarks

- a. Executives and executive directors are paid in line with the Group's pay policy. Their guaranteed packages are pegged between the lower quartile and median of the market;
- b. Executive pay is benchmarked against a bespoke comparator group with similar company features to the Group or subsidiary to ensure the reliability and validity of the data against which we benchmark ourselves.

### Pay policy for shareholder alignment

- a. All STI and LTI participants are subjected to malus and claw-back provisions;
- b. Furthermore, incentives (STI and LTI) are directly linked to business performance by way of Group and subsidiary performance targets.

### Shareholder engagement

As our shareholder register reflects more institutional shareholders, we will engage to obtain views and comments on our remuneration policy and its implementation. For the time being, the Remuneration Committee will respond to any inward enquiries relating to this report.

### Future focus areas

In 2020 the focus will be on the embedding of the Group's Remuneration and Performance philosophy into the wider people management framework, so as to create total alignment in the Group's Human Capital Agenda referred to in the "Our People" section of the report.

Furthermore, the Committee will prioritise the completion of the design and implementation of the Vametco ESOP as well as ensure full integration of all the Group subsidiaries within the existing remuneration policy and framework.

### Remuneration advisors

The Committee re-employed the services of PricewaterhouseCoopers ("PwC"), an independent professional services firm with a global remuneration practice, to act as independent advisors to the Committee. The Committee is satisfied that they act independently.

We encourage and pursue open and regular dialogues with all our stakeholders. Your constructive input is valued and appreciated as we continue to improve the remuneration system. On behalf of the Remuneration Committee, I thank you for your continued support and feedback regarding our remuneration framework.

**Michael J. Kirkwood**

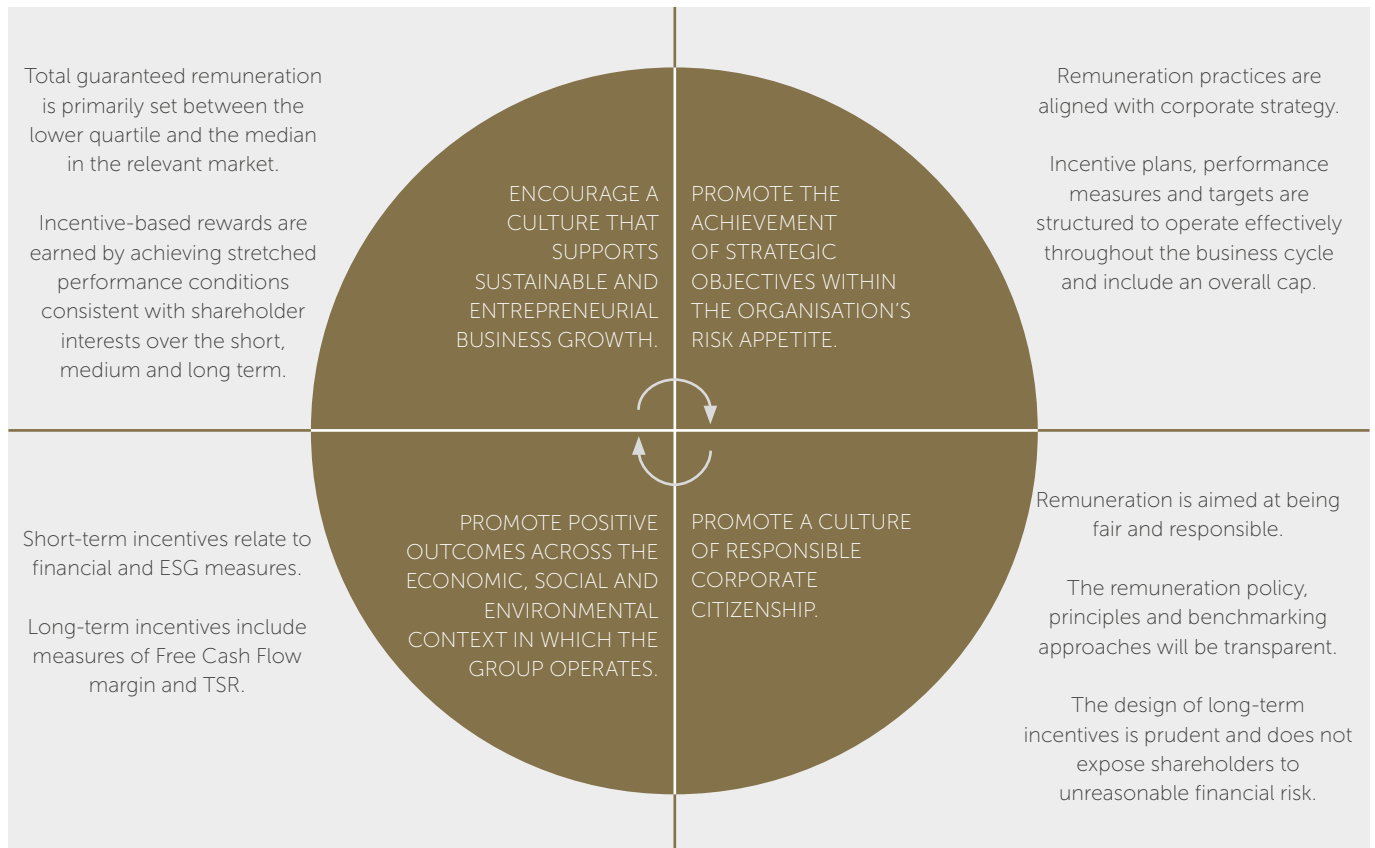
**Chairman of the Remuneration Committee**

## PART TWO: REMUNERATION POLICY

### General Remuneration Policy

The Group Remuneration Policy seeks to enable Bushveld Minerals, to attract, motivate and retain high-performing individuals. It guides decision-making in relation to all aspects of remuneration and supports the execution of strategic deliverables, as expressed in the Group's performance framework.

The policy applies to Bushveld Minerals', head office employees, Bushveld Energy, Bushveld Vanchem and Lemur. Employees of Bushveld Vametco Alloys are excluded at this stage, but the Committee aims for the policy to be rolled out to all subsidiaries where it makes sense, taking into account existing contractual obligations, terms and conditions of employment. The remuneration policy is anchored on the following remuneration **philosophy statements and principles**:



## Governance

# Remuneration Report continued

## PART TWO: REMUNERATION POLICY CONTINUED

### Elements of remuneration

The Bushveld Minerals remuneration structure is made up of a combination of fixed and variable pay. The fixed pay component is referred to as the Total Guaranteed Pay (TGP) and the variable component includes the Group's Short-term Incentives (STI) and Long-term Incentives (LTI). The main objective of the TGP is to provide individuals with a fixed income, priced in line with the market and aligned with the job that they do.

The variable pay component is performance-related, designed to reward superior performance and to align the interests of executives and management with those of the shareholders over the medium and long term. Below is a summary of the policy as it applies to designated employees in the organisation (exclusions as explained above), together with the link to strategy.

Remuneration element	Policy
<b>Total Guaranteed Pay, comprising fixed cash salary plus benefits</b>	
<b>Policy</b>	Our policy is to set TGP for all levels of staff between the lower quartile and median while the total package opportunity (inclusive of incentives) is set at the median or above in the case of the achievement of stretched targets, subject to discretion in the case of business needs to attract scarce skills to the company.
<b>Policy's link to Company strategy</b>	In light of the fact that the Group is still in a growth phase, the Committee has determined to set fixed pay for all employees between the lower quartile and the median.
<b>Approach to benchmarking and salary adjustments</b>	<p>For executives, the benchmark is derived from listed companies with a similar profile to that of Bushveld Minerals. Other employees are benchmarked against the mining circle of PwC's REMchannel® Remuneration Survey.</p> <p>The total cost of annual increases for all employees who fall outside collective bargaining agreements is approved by the Committee and set in accordance with expected market movement and affordability.</p> <p>Distribution of increases to employees outside the bargaining forums is done with reference to individual performance, inflation, internal equity, competence and potential. Increases occur annually with effect from 1 January.</p>
<b>Benefits</b>	Benefits include a Medical Aid, Retirement Fund, Group Life Cover, Disability Benefit and Death Benefit.

### Short-term incentives (STI)

<b>Purpose</b>	<p>The purpose of the STI is to align the interest of employees with those of shareholders on an annual basis. For managerial level employees, the STI has a deferred component, aligning employees with shareholders beyond the short-term.</p> <p>The STI is partly paid in cash and partly deferred into shares for employees on managerial levels, while non-managerial employees receive their STI in cash. The STI gives employees an incentive to achieve the Group's annual goals, with payment levels based on both business (Group and/or subsidiary) and personal performance, depending on the level of the employee.</p>
<b>Policy's link to Company strategy and performance measures</b>	<p>The STI is designed to encourage and reward superior performance and to align the interests of employees as closely as possible with the interests of shareholders. Annual Group performance targets as well as subsidiary targets and measures are set and approved by the Board. Following the annual Board strategy review process, it approves the strategic focus areas for the year, and these are translated into a Group performance balanced scorecard which reflects on-target and stretch deliverables for the year. These would include measures such as:</p> <ul style="list-style-type: none"> <li>– Consolidated Economic Profit;</li> <li>– Group Strategic Priorities (as mandated by the Board);</li> <li>– Production Costs (Mining and Processing);</li> <li>– Production Volumes (Mining and Processing);</li> <li>– Normalised Revenue (Mining and Processing);</li> <li>– LTIFR, Community Development and Environmental Targets.</li> </ul> <p>Participants with line of sight on Group financial targets as well as strategic priorities will be allocated a split weighting between the Group performance targets and functional targets. As a consequence of Covid-19, only targets that could be approved for 2020 are disclosed below.</p>



Remuneration element	Policy																																										
<b>Eligibility</b>	All employees of Bushveld Minerals' head office, Bushveld Energy, Bushveld Vanchem and Lemur, as well as the General Manager of Bushveld Vametco Alloys. Other employees of Bushveld Vametco Alloys are excluded at this stage, but the Committee aims for the policy to be rolled out to all subsidiaries where it makes sense, taking into account existing contractual obligations, terms and conditions of employment.																																										
<b>Bonus formula</b>	<p>The STI operates as follows:</p> <p>Qualifying Annual TGP x On-Target Incentive Percentage x ((Personal Score x Personal Weighting) + (Business Score x Business Weighting));</p> <p>For qualifying participants (middle management and above), the STI is partly paid in cash (annual bonus) and partly deferred (deferred bonus) which is then settled as bonus awards under the LTI (as described below);</p> <p>The remainder of the participants (non-managerial) receive the full STI in cash.</p>																																										
<b>On-target incentive percentages</b>	The on-target incentive percentages are determined per grade and expressed as a percentage of an employee's qualifying TGP. The on-target incentive percentages will be determined by the Remuneration Committee from time to time, informed by prevailing market trends. The on-target ranges are indicated below.																																										
<b>Performance measure weightings</b>	<p>A combination of financial and personal measures are used, each with an assigned weighting depending on seniority. Executive performance is heavily weighted toward business performance, to ensure executive and shareholder alignment.</p> <p>The following weightings apply at Group and subsidiary level respectively:</p> <p><b>Group:</b></p> <table border="1"> <thead> <tr> <th>Level</th> <th>Business weighting</th> <th>Personal weighting</th> </tr> </thead> <tbody> <tr> <td>CEO and CFO</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Executives</td> <td>70%</td> <td>30%</td> </tr> <tr> <td>Senior management</td> <td>60%</td> <td>40%</td> </tr> <tr> <td>Middle management or Professional Specialists</td> <td>50%</td> <td>50%</td> </tr> <tr> <td>Non-managerial</td> <td>0%</td> <td>100%</td> </tr> </tbody> </table> <p><b>Subsidiary:</b></p> <table border="1"> <thead> <tr> <th>Level</th> <th>Business weighting</th> <th>Personal weighting</th> </tr> </thead> <tbody> <tr> <td>Executives</td> <td>60%</td> <td>40%</td> </tr> <tr> <td>Senior management</td> <td>50%</td> <td>50%</td> </tr> <tr> <td>Middle management or Professional specialists</td> <td>40%</td> <td>60%</td> </tr> <tr> <td>Non-managerial</td> <td>0%</td> <td>100%</td> </tr> </tbody> </table> <p><b>Subsidiary weightings for Vametco executives are implemented as follows:</b></p> <table border="1"> <tbody> <tr> <td>Personal Weighting</td> <td>40%</td> <td></td> </tr> <tr> <td>Business – Vametco</td> <td>40%</td> <td>= 60% business weighting</td> </tr> <tr> <td>Business – Group</td> <td>20%</td> <td></td> </tr> </tbody> </table>	Level	Business weighting	Personal weighting	CEO and CFO	80%	20%	Executives	70%	30%	Senior management	60%	40%	Middle management or Professional Specialists	50%	50%	Non-managerial	0%	100%	Level	Business weighting	Personal weighting	Executives	60%	40%	Senior management	50%	50%	Middle management or Professional specialists	40%	60%	Non-managerial	0%	100%	Personal Weighting	40%		Business – Vametco	40%	= 60% business weighting	Business – Group	20%	
Level	Business weighting	Personal weighting																																									
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Business – Vametco	40%	= 60% business weighting																																									
Business – Group	20%																																										
<b>Business performance measures and targets</b>	<p>As mentioned above, the business score will include a combination of financial and non-financial performance measures. The applicable targets are disclosed below. Performance outcomes are measured on the following business scale:</p> <table border="1"> <thead> <tr> <th>Performance achievement</th> <th>Business score</th> </tr> </thead> <tbody> <tr> <td>Threshold performance</td> <td>50%</td> </tr> <tr> <td>Target performance</td> <td>100%</td> </tr> <tr> <td>Stretch performance</td> <td>150%</td> </tr> </tbody> </table>	Performance achievement	Business score	Threshold performance	50%	Target performance	100%	Stretch performance	150%																																		
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## Governance

# Remuneration Report continued

## PART TWO: REMUNERATION POLICY CONTINUED

Remuneration element	Policy																		
<b>Personal performance measures and targets and related personal score</b>	<p>The personal score will be dependent on the personal performance rating of the employee for the relevant financial year. Personal performance achievement will translate into the following personal scores. A personal score below threshold acts as a gatekeeper, which means even if the business score was achieved, a participant with a personal score below threshold will not qualify for any bonus.</p> <table border="1"> <thead> <tr> <th>Rating</th> <th>Description</th> <th>Performance Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Non performance</td> <td>0%</td> </tr> <tr> <td>2.5</td> <td>Threshold</td> <td>50%</td> </tr> <tr> <td>3</td> <td>On Target</td> <td>100%</td> </tr> <tr> <td>4</td> <td>Exceeds expectation</td> <td>125%</td> </tr> <tr> <td>5</td> <td>Stretch performance</td> <td>150%</td> </tr> </tbody> </table>	Rating	Description	Performance Score	1	Non performance	0%	2.5	Threshold	50%	3	On Target	100%	4	Exceeds expectation	125%	5	Stretch performance	150%
Rating	Description	Performance Score																	
1	Non performance	0%																	
2.5	Threshold	50%																	
3	On Target	100%																	
4	Exceeds expectation	125%																	
5	Stretch performance	150%																	
<b>STI opportunity</b>	<p>Threshold, target and stretch performance levels are set for each performance target. No bonus is payable if threshold performance is not achieved. The on-target and stretch bonus levels for executives are explained below under the heading "Package Design".</p>																		
<b>Deferral operation</b>	<p>For employees who hold jobs graded between Paterson Grades D and F, the STI is partly paid in cash (annual bonus) and partly deferred (deferred bonus) which is then settled as bonus awards under the LTI (as described below). The deferral is designed to further align management's short-term interests with those of the shareholders. The cash vs deferred on-target percentages are as follows:</p> <table border="1"> <thead> <tr> <th rowspan="2">Occupational Level</th> <th colspan="2">On-target Bonus as a % of Qualifying TGP</th> </tr> <tr> <th>Annual Bonus</th> <th>Deferred Bonus</th> </tr> </thead> <tbody> <tr> <td>CEO and CFO</td> <td>45%</td> <td>28%</td> </tr> <tr> <td>Executives</td> <td>35%</td> <td>23%</td> </tr> <tr> <td>Senior management</td> <td>30%</td> <td>18%</td> </tr> <tr> <td>Middle management or Professional specialists</td> <td>20%</td> <td>8%</td> </tr> </tbody> </table>	Occupational Level	On-target Bonus as a % of Qualifying TGP		Annual Bonus	Deferred Bonus	CEO and CFO	45%	28%	Executives	35%	23%	Senior management	30%	18%	Middle management or Professional specialists	20%	8%	
Occupational Level	On-target Bonus as a % of Qualifying TGP																		
	Annual Bonus	Deferred Bonus																	
CEO and CFO	45%	28%																	
Executives	35%	23%																	
Senior management	30%	18%																	
Middle management or Professional specialists	20%	8%																	
<b>Long-term incentives (LTI)</b>																			
<b>Purpose</b>	<p>The Company adopted a new LTI, namely the Conditional Share Plan ('CSP') during 2018. The purpose of the CSP is to align the interests of executives with those of shareholders over the medium to long-term. Awards vest after a three-year period and are then subject to a further two-year holding period.</p>																		
<b>Policy's link to Company strategy</b>	<p>LTIs are inherently retentive but there are no schemes specifically in place for the sole purpose of retaining key employees. Through the delivery of real equity, employees will become shareholders in the Company.</p>																		
<b>Nature of LTI</b>	<p>In terms of the CSP, eligible employees will receive conditional rights to shares and the following instruments are available:</p> <ul style="list-style-type: none"> <li>– Performance awards are subject to forward-looking Company performance conditions, measured over a three-year performance period. Awards will vest subject to the achievement of the performance measures and continued employment for the duration of the vesting period.</li> <li>– Bonus awards linked to STI performance which is deferred and subject to continued employment but is not subject to forward-looking performance vesting conditions.</li> </ul>																		
<b>Eligibility</b>	Middle management and above																		
<b>Instruments and their application</b>	A mix between performance and bonus awards will be awarded. The policy as it applies to executives is explained in the "Package Design" section below.																		
<b>Performance measures and period</b>	<p>Performance awards are subject to performance measures over a three-year period. To ensure Group alignment, all performance awards will be subject to Group performance measures.</p> <p>Applicable performance measures will be determined by the Committee each time an award is made and will be communicated to participants in the award letter. Once the CSP has been implemented, retrospective achievement against targets will be disclosed. The LTI targets include:</p> <ul style="list-style-type: none"> <li>– Free Cash Flow Margin   <b>40%</b></li> <li>– Total shareholder return (Absolute TSR)   <b>60%</b></li> </ul> <p>As a consequence of Covid-19, targets for these performance measures will still be determined for the 2020 allocation by the RemCo.</p>																		

Remuneration element	Policy
<b>Award levels</b>	Intended on-target award levels are expressed as a percentage of TGP and are disclosed in the package design section below.
<b>Vesting levels</b>	In recognition of the fact that TGP is set between the lower quartile and median, the CSP will comprise of an outperformance element in the case of superior performance as follows: <ul style="list-style-type: none"> <li>– Threshold performance – 50% linear vesting</li> <li>– Target performance – 100% linear vesting</li> <li>– Stretch performance – 250% linear vesting</li> </ul>
<b>Vesting period</b>	All awards are subject to a three-year vesting period, where after the shares will be settled. In addition, at the discretion of the Committee, 50% of vested shares are subjected to an additional two-year holding period during which they cannot be disposed of, post vesting retrospectively. During the holding period the vested shares may also be subject to claw-back, as explained in further detail below.
<b>Dilution limit</b>	The Company voluntarily imposed a dilution limit for the CSP. Up to 5% of the issued share capital can be issued in settlement of awards granted under the CSP. When required under listing rules, the Company would seek to formalise the limit in a general meeting.

## 2020 performance targets

In light of the uncertainty imposed on our business operations by Covid-19, the Board took a decision not to publish the 2020 Group financial KPIs. The Committee has agreed financial and non-financial targets for the year, and these are the approved non-financial/ESG targets.

The approved ESG targets are outlined below:

Key performance area	Weighting	Key performance indicator	Threshold	On target	Stretch
<b>Occupational health &amp; safety</b>	30%				
	40	Total Recordable Injury Frequency Rate (TRIFR)	≥5% performance improvement	≥18% performance improvement	≥20% performance improvement
	40	Lost Time Injury Frequency Rate (LTIFR)	≥5% performance improvement	≥18% performance improvement	≥20% performance improvement
	20	New Occupational disease cases	N/A	N/A	N/A
<b>Environment</b>	25%				
	70	Responsible environmental stewardship	No Major Environmental Incidents	Additional: Compliance rating on environment assessment audits	Additional: Environmental management system that incorporates international standards such as IFC
	30	Global vanadium advocacy	Active participation in Vanitec processes that address Vanadium environmental matters	Additional: Active advocacy on benefit of vanadium to sustainability, in areas such as the circular economy	
<b>Social license to operate</b>	25%				
	100	Acquire and maintain social license to operate	Compliance to applicable regulatory frameworks (MCII, B-BBEE & DTI Codes, etc)	Additional: Adherence to MCIII plan milestones and the development of Value Beyond Compliance strategies	Additional: Effective cross-functional internal forums such as transformational forums inclusive of General Management, Finance, Procurement, HR and Stakeholder
<b>Governance</b>	20%				
	100	Adherence to the QCA Corporate Governance Code	Full adherence to the QCA Code	Threshold + 100% year-on-year improvement as per Board approved Governance annual workplan	

The Committee will continue to keep a close eye on the impact of Covid-19 on the business and will monitor its financial performance accordingly. As the year progresses, and in the event that the full impact of Covid-19 on the business becomes more apparent, the Committee will be better placed to make appropriate amendments to the STI metrics that would be fair to all stakeholders, both employees and shareholders.

## Governance

# Remuneration Report continued

## PART TWO: REMUNERATION POLICY CONTINUED

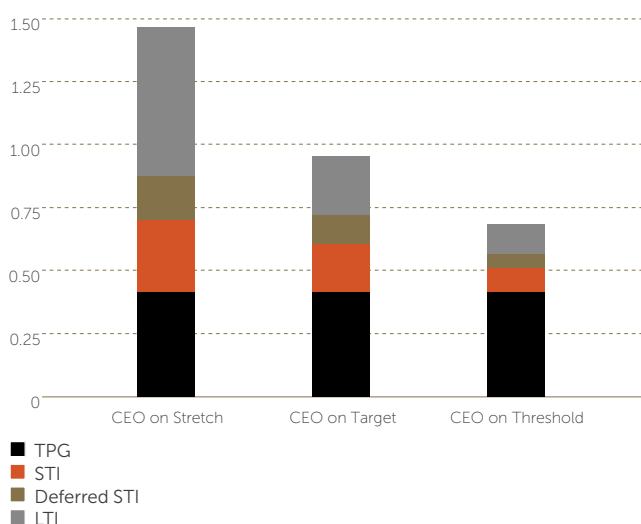
### Package design

The remuneration policy is linked to our strategy and is an enabler for the achievement of the Group's key performance indicators.

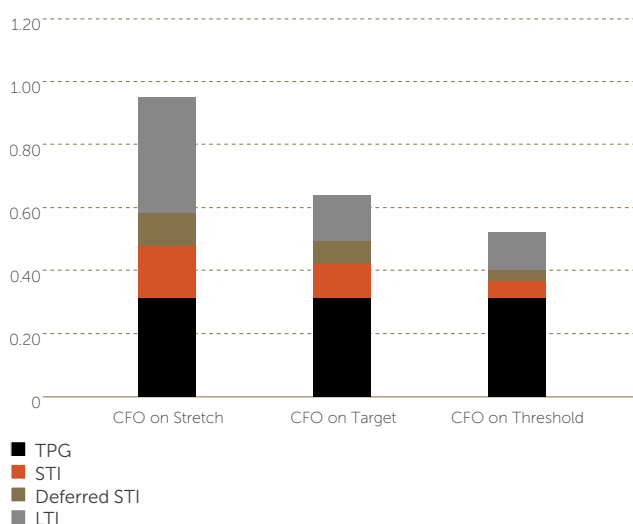
The structure of the remuneration package supports the Group's strategic objectives and is made up of fixed and variable remuneration.

The mix between fixed and variable pay for executive directors linked to various performance outcomes (Threshold, On-target and Stretch) under the terms of the policy are indicated in the following graphs:

CEO (US\$ (millions))



CFO (US\$ (millions))



### Further detail relating to executives and directors

#### Minimum Shareholding Requirements

To ensure further shareholder alignment, executives are required to build up and maintain a percentage of their TGP in unencumbered Company shares over a three-year period from date of implementation of the policy, or appointment.

This shareholding can be built up as desired by executives. Any existing shareholding, as well as vested Conditional Share Plan (CSP) shares (including those that are subject to the holding period), will be taken into consideration when calculating the shareholding percentage.

The required shareholding levels, as a percentage of TGP (before tax) are as follows:

Chief Executive Officer	200%
Finance Director	175%
Other Executives	150%

#### Malus and Claw-Back Policy

As a result of increased corporate governance requirements pertaining to executive remuneration, variable remuneration is subject to malus and claw-back. The purpose of such a policy is to give the board the discretion to recoup vested, settled and/or paid incentives (also referred to a "claw-back") and to reduce and cancel any unvested and/or unpaid incentive remuneration (also referred to as "malus") when trigger event(s) occur.

The policy may be implemented by the Board where there were material misstatements of financial results or other calculation errors that resulted in the overpayment of incentives and gross misconduct on the part of the employee leading to dismissal. The policy applies to all variable pay as follows:

- Unpaid STIs and unvested LTIs are subject to malus as a pre-vesting forfeiture provision.
- Paid STI and 50% of vested LTIs may be subject to claw-back as a post vesting recoupment of paid and vested incentives.
- LTIs that are subject to a holding period will be subject to claw-back as follows: 25% can be clawed back for a one-year period post vesting and the final 25% for a two-year period post vesting.



## Executive employment contracts and termination of employment

During this period the Committee appointed ENS Africa, one of the largest independent law firms in South Africa, to review existing and draft new executive employment contracts that include restraint of trade provisions. All newly-appointed executives are engaged on the basis of the new contract and tied to a six-month restraint period.

The STI and LTI make a distinction between fault and no-fault terminations as follows:

STI & LTI	
Fault termination (resignation and dismissal)	The incentive is forfeited
No-fault termination (termination due to death, ill health, disability, retrenchment, sale of an employer, retirement)	A pro-rata portion of the incentive is received, based on the number of complete months in service, and in the case of performance shares awards are adjusted for performance. The unvested or unpaid portion will lapse

## Shareholder engagement

Bushveld Minerals is committed to fair, responsible and transparent remuneration. As such the Company invites shareholders to engage with the Group on remuneration-related matters. In response to shareholder queries, where appropriate, the Board may resolve to amend relevant elements of the remuneration policy.

## Non-executive director fees

Non-executive directors are appointed to the Bushveld Minerals Group based on their ability to contribute competence, insights and experience appropriate to assisting the Group to set and achieve its objectives. Consequently, fees are set at levels to attract and retain the calibre of directors necessary to contribute to a highly effective board.

They do not participate in either the STI or LTI. No arrangements exist for compensation in respect of loss of office. The aggregate fees of all directors shall not exceed GBP500,000 per annum, or such higher amount as may be determined by ordinary resolution (*excluding amounts payable under any other provisions of the Articles*).

The current approved fee structure is as follows:

Board Position	Annual Fee – US\$
Chairman	98,303
Non-executive director	52,428
Senior non-executive director	65,535
Board Committee Chairperson	Annual Fee – US\$
Remuneration committee	6,554
Audit committee	6,554
Nominations committee	3,277
Disclosure committee	3,277

## PART THREE: REMUNERATION IMPLEMENTATION REPORT

### TGP increases awarded to executives versus other employees

In line with the company's philosophy to address the wage gap, higher increases were awarded to lower levels of staff. The following TGP increases were awarded with effect from January 2020:

Occupational Level	% Increase
Top Management	4.5%
Executives	5%
Middle management/professional specialists	5.5%
Non-management	7%

No TGP adjustments were made in 2019.

## Governance

# Remuneration Report continued

## PART THREE: REMUNERATION IMPLEMENTATION REPORT CONTINUED

### 2019 STI outcomes

#### Metrics and weightings

The relative weighting and composition of Group and Individual objectives for 2019 were:

Performance category	CEO and CFO	Other Executives	Subsidiary Executives
Personal performance	20%	30%	40%
Business performance	80%	70%	60%

#### Business targets and outcomes

Measure	Weighting	2019 Target			2019 outcomes
		Threshold	Target	Stretch	
Consolidated Economic Profit (EVA = RONA vs WACC)	70	RONA = WACC	RONA = WACC + 1.5%	RONA = WACC + 3%	150%
ESG	30	80% of target	100% of target	150% of target	100%
Safety performance	33%	5%	10%	15%	100%
Health (compliance)	33%	90%	95%	100%	100%
Community (number of business disruptions)	33%	2	0	0	100%

The overall weighted business performance achievement is 135%, resulting in the achievement of a stretch business performance outcome.

#### Personal targets and outcomes

Depending on the participant's role, personal metrics and targets were set and evaluated with reference to the following performance categories:

- Strategy Implementation
- Production Volumes
- Production Costs
- Capital Projects
- Sustainability
- Organisational Health

#### STI calculation and payments

The STI is calculated based on the following formula, which incorporates six variables derived from the end of year performance evaluation scores:

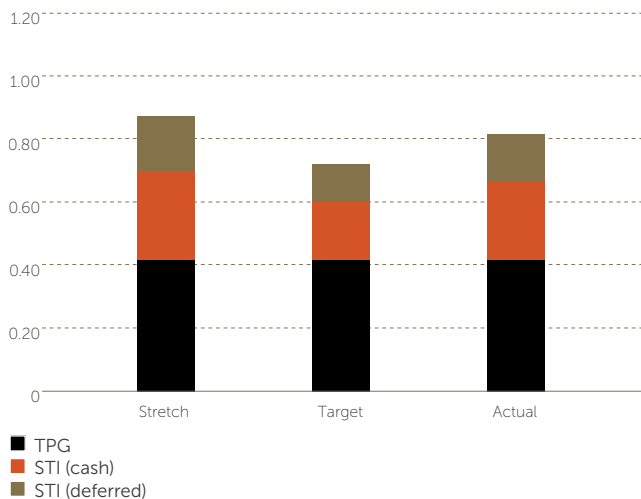
Qualifying Annual TGP x On-Target Incentive Percentage x ((Personal Score x Personal Weighting) + (Business Score x Business Weighting)).

In this context, STIs (cash and deferred shares) were as follows for the CEO, who was the only eligible executive during 2019.

Name	TGP USD	On-target incentive percentage	Personal Score	Personal weighting	Business score	Business weighting	Cash bonus USD	Deferred bonus (shares)
F. Mojapelo	415,188	73%	119%	20%	135%	80%	246,154	153,163

Actual CEO STI against on-target and stretch

STI outcome (US\$ (millions))



## 2019 conditional shares awarded

The CSP comprises two elements: performance shares and bonus shares. During 2019, conditional performance shares were granted while bonus shares will be awarded during 2020 for performance relating to the 2019 financial year.

Conditional performance shares are subject to a three-year vesting period, where after the shares may be settled subject to performance conditions being met. The threshold, on-target and stretch performance shares to which the CEO is entitled are outlined below, conditional on the Company meeting its long-term performance targets:

Threshold – 50%	Target – 100%	Stretch – 250%
339,286	678,572	1,696,429

On-target performance share allocation

Name	On target conditional award	Percentage of TGP
F Mojapelo	678,572	57%
T Chikanza	–	–

## Payments for former directors

### Exit package and cash payment in lieu of shares – Geoff Sproule

Mr. Geoff Sproule retired in the course of 2019 after serving as the Group Finance Director since 2012. The committee approved an exit package made up of a pre-tax cash payment of US\$106,200, in lieu of retrospective/historical shares that were granted to him and declared in the 2017 remuneration report.

Mr. Sproule had been granted 1,080,350 shares on an 8.40p share price at a ZAR16.9117 exchange rate. In addition, a pre-tax retirement exit package of US\$244,980 was paid to him in recognition of his years of service and commendable contribution to the Group in its formative years.

## Minimum shareholding requirements

Minimum shareholding requirements for the executives were adopted at the beginning of this financial year. Executives are given three years from this date, or the date of their employment, to build up the required shareholding. The current levels of ownership are depicted below:

Executive	% of TGP held in shares (as at 31 Dec 2019)	MSR target and target date
F. Mojapelo	589%	200% (31 Dec 2021)
T. Chikanza	0%	150% (1 Oct 2022)

## Governance

# Remuneration Report continued

## PART THREE: REMUNERATION IMPLEMENTATION REPORT CONTINUED

### Remuneration disclosure

#### Remuneration paid to executive directors during the year

##### Single figure of remuneration table:

Name	Year	Guaranteed pay USD	Benefits USD	STI <sup>1,2</sup> USD	LTI Reflected USD	Other	Total single figure of Remuneration USD
<b>Executive directors</b>							
F Mojapelo <sup>3,4</sup>	2019	416,230	–	246,772	153,547	–	<b>816,550</b>
	2018	340,234	–	–	2,532,206	–	<b>2,872,440</b>
T Chikanza <sup>5</sup>	2019	78,043	–	–	–	–	<b>78,043</b>
	2018	–	–	–	–	–	<b>–</b>
G Sproule <sup>6,7</sup>	2019	55,225	–	–	–	342,094	<b>397,319</b>
	2018	129,701	–	–	125,735	–	<b>255,436</b>

##### Footnotes:

- 1 No STI was paid during the 2018 financial year.
- 2 The STI included in the 2019 financial year relates to the cash component received relating to performance in the 2019 financial year.
- 3 The LTI reflected in the 2019 financial year includes the bonus share awards which relate to performance in the 2019 financial year and will be awarded after year end.
- 4 The LTI reflected in the 2018 financial year includes the retrospective award made in August 2018 at the award date share price of \$0.36, which is subject to a 12 month lock-in period. Refer to the approved notice for more detailed information regarding the retrospective scheme.
- 5 T Chikanza was employed as CFO on 1 October 2019 and therefore only 3 months' remuneration is included. She did not qualify for an STI or LTI award during the 2019 financial year.
- 6 The LTI reflected in the 2018 financial year includes the cash payment in lieu of shares in terms of the retrospective award made in January 2018 at the award date value of \$125,735, which was only paid in the 2019 financial year. Refer to the approved notice for more detailed information regarding the retrospective scheme.
- 7 G Sproule retired as CFO on 30 June 2019 and acted as a director until 30 September 2019 (without receiving remuneration), therefore only 6 months' remuneration is included. He received an exit package included under 'Other' which consisted of cash.

\* All amounts for the 2019 single figure disclosure were converted to US dollars using an average exchange rate of 14.4513 for the 2019 financial year.

#### Schedule of unvested awards and cash flow on settlement

Names	Award date	Vesting date	Opening balance on 1 Jan 2018 <sup>1</sup>	Granted during 2018 <sup>2</sup>	Forfeited during 2018	Settled during 2018	Closing balance on 31 Dec 2018 <sup>3</sup>	Cash value of receipts 2018 (USD)	Estimated closing fair value on 31 Dec 2018 (USD)
<b>Executive directors</b>									
<b>F Mojapelo</b>									
– Retrospective share award <sup>2,3</sup>	Aug–18	Aug–19	–	7,000,000	–	–	7,000,000	–	3,430,000
<b>CSP awards:</b>									
– Performance share award	Jan–19	Jan–22	–	–	–	–	–	–	–
<b>G Sproule</b>									
– Retrospective cash award <sup>4</sup>	Jan–18	Jan–18	–	125,735	–	–	125,735	–	125,735

Names	Granted during 2019	Forfeited during 2019	Settled during 2019	Closing balance on 31 Dec 2019	Cash value of receipts 2019 (USD) <sup>5</sup>	Estimated closing fair value on 31 Dec 2019 (USD) <sup>6</sup>
<b>Executive directors</b>						
<b>F Mojapelo</b>						
– Retrospective share award <sup>2,3</sup>	–	–	–7,000,000	–	2,532,206	–
<b>CSP awards:</b>						
– Performance share award	678,572	–	–	678,572	–	136,863
<b>G Sproule</b>						
– Retrospective cash award <sup>4</sup>	–	–	–125,735	–	125,735	–



## Footnotes:

- 1 There were no long-term incentive awards made in prior years therefore the balance at the beginning of the 2018 financial year is zero.
- 2 The retrospective award made in the 2018 financial year for F Mojapelo consisted of share awards, subject to a 12 month lock-in period.
- 3 The retrospective awards are included in the 2018 financial year at the year end share price of \$0.49 and an estimated vesting percentage of 100%.
- 4 G Sproule received a cash payment in lieu of shares in terms of the retrospective award made in January 2018 which vested immediately, but will only be settled in the 2019 financial year. For purposes of disclosure, \$1 equals one unit therefore the award consists of 125,735 units @ \$1 per unit.
- 5 Includes the proceeds from the awards settled during the year.
- 6 The performance share awards for the 2019 financial year are included at the year end share price of \$0.26 with an estimated vesting percentage of 76.8%.

Bonus share award: A bonus share award will be made under the CSP to the CEO in the 2020 financial year relating to performance in the 2019 financial year.

### Non-executive director fees paid during the year

No increases to the fees of non-executive directors were approved for the 2020 year. The fees paid during 2019 compared to 2018 are disclosed below.

Non-executive directors	2019 Fees received by non-executive directors (USD)						Total fees received 2019	Total fees received 2018
	Board	Remuneration Committee Chair	Audit Committee Chair	Nominations Committee Chair	Attendance of ad-hoc meetings	Disclosure Committee Chair		
Ian Watson	98,304	–	–	3,277	11,797	3,277	116,655	68,851
Michael Kirkwood	65,536	6,554	6,554	–	11,797	–	90,440	48,792
Jeremy Friedlander	52,429	–	–	–	11,797	–	64,226	40,730
Anthony Viljoen	52,429	–	–	–	9,175	–	61,604	38,184

## Governance

# Directors' Report

The Directors of Bushveld Minerals Limited ('Bushveld' or the Group) hereby present their report together with the consolidated financial statements for the year ended 31 December 2019.

## Principal activities, business review and future developments

Bushveld Minerals is a low-cost, vertically-integrated primary vanadium producer with a diversified vanadium product portfolio, supplying approximately 3,000 mtVp.a. of the global vanadium market from Vametco and Vanchem. The Group has recently acquired Vanchem, this acquisition ensures that the Group is in a solid position to achieve its production target of more than 8,400 mtVp.a.

The acquisition is consistent with the Group's long-term strategy of acquiring existing, low-cost scalable brownfield operating assets in South Africa to expedite the development of the Group's significant and high-grade resource base.

Bushveld Energy is an energy storage component manufacturer and project developer focused on vanadium-based energy storage systems called Vanadium Redox Flow Batteries ('VRFBs'). Bushveld Energy plays a pivotal role in the development and promotion of VRFB technology within the growing global energy storage market. The Group also has interests in an integrated thermal coal mining and independent power producer project in Madagascar.

Bushveld Minerals is the holding company of several companies. The Group structure is described in Note 1 of the financial statements.

Reviews of the Group's financial and operational performance and future developments are provided in the Chairman's Statement, Chief Executive Officer's review and the Finance Director's review on pages 06, 10 and 34 respectively.

## Results and dividend

The Group's results show a profit before tax for the year of US\$83.3 million (2018: profit of US\$86.6 million). While its value proposition to shareholders is primarily of a capital growth nature, the intention is to create shareholder value through delivering on strategy. Further analysis of the results is disclosed in the Finance Director's statement.

## Share capital and funding

Full details of the authorised and issued share capital, together with details of the movements in the Company's issued share capital during the year, are shown in Note 28. The Company has one class of ordinary shares which carry no right to fixed income. Each share carries the right to one vote at general meetings of the Company.

## Directors

The Directors who served the Company since 1 January 2019 are as follows:

Fortune Mojapelo	Chief Executive Officer
Tanya Chikanza	Finance Director (Appointed October 2019)
Ian Watson	Chairman and Independent Non-Executive Director
Michael J. Kirkwood	Senior Independent Non-Executive Director
Anthony Viljoen	Non-Executive Director
Jeremy Friedlander	Independent Non-Executive Director
Dolly Mokgatle	Independent Non-Executive Director (Appointed March 2020)
Geoffrey Sproule	Finance Director (Resigned October 2019)

## Directors' interests

The Directors' beneficial interests in the shares of the Company at 31 December 2019 were:

	Ordinary shares of 1p each 31 December 2019	Ordinary shares of 1p each 31 December 2018
Fortune Mojapelo	16,660,000	16,660,000
Tanya Chikanza	–	–
Ian Watson	3,555,000	3,555,000
Michael J. Kirkwood	300,000	300,000
Anthony Viljoen	16,826,667	16,826,667
Jeremy Friedlander	1,050,000	1,050,000
Dolly Mokgatle	–	–
Geoffrey Sproule	1,500,000	1,500,000

The Bushveld Minerals remuneration structure includes an incentive component which includes the Short-term Incentives (STI) and Long-term Incentives (LTI) schemes. Refer to the remuneration report for details of options awarded and the vesting thereof.

## Directors' indemnity insurance

The Group has maintained insurance throughout the year for its Directors and officers against the consequences of actions brought against them in relation to their duties for the group.

## Employee involvement policies

The Group places considerable value on the awareness and involvement of its employees in the Group's activities. Within the bounds of commercial confidentiality, information is disseminated to all levels of staff about matters that affect the progress of the Group, and that are of interest and concern to them as employees.

## Creditor payment policy and practice

The group's policy is to ensure that, in the absence of disputes, all suppliers are dealt with in accordance with its standard payment policy and it abides by the terms of payment agreed with suppliers when agreeing the terms of each transaction. Suppliers are made aware of the terms of payment.

## Related party transactions

Details of related party transactions are detailed in Note 35 of the financial statements.

## Events after the reporting date

Events after the reporting date are detailed in Note 36 of the financial statements, including the Covid-19 pandemic, the impact of which is also described in the Chairman's Statement, Chief Executive's Review and Finance Director's Report.

**Governance**

# Directors' Report continued

**Statement as to disclosure of information to auditor**

The Directors who were in office on the date of approval of these financial statements have confirmed that, as far as they are aware, there is no relevant audit information of which the auditor is unaware. Each of the Directors have confirmed that they have taken all the steps that they ought to have taken as Directors in order to make themselves aware of any relevant audit information and to establish that it has been communicated to the auditor.

**Auditor**

The Company's auditor is RSM UK Audit LLP.

**Electronic communications**

The maintenance and integrity of the Group's website is the responsibility of the Directors. The work carried out by the auditor does not involve consideration of these matters and, accordingly, the auditor accepts no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the website.

The group's website is maintained in compliance with AIM Rule 26.

By order of the Board



**Tanya Chikanza**  
**Finance Director**

23 June 2020



# Statement of Directors' Responsibilities

The Directors are responsible for preparing the Annual Report and the financial statements in accordance with applicable law and regulations.

Guernsey company law requires the Directors to prepare group financial statements for each financial year in accordance with generally-accepted accounting principles. The Directors are required by the AIM Rules of the London Stock Exchange to prepare group financial statements in accordance with International Financial Reporting Standards ('IFRS') as adopted by the European Union ('EU').

The financial statements of the Group are required by law to give a true and fair view of the state of the group's affairs at the end of the financial year and of the profit or loss of the Group and are required by IFRS, as adopted by the EU, to fairly present the financial position and performance of the Group.

The Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and of the profit or loss of the Group for that year.

In preparing the Group financial statements, the Directors are required to:

- (i) select suitable accounting policies and apply them consistently;
- (ii) make judgements and accounting estimates that are reasonable and prudent;
- (iii) state whether they have been prepared in accordance with IFRS as adopted by the EU; and
- (iv) prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group's transactions, and disclose with reasonable accuracy, at any time, the financial position of the Group and enable them to ensure that the financial statements comply with applicable law. They are also responsible for safeguarding the assets of the Group and taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the Group's website. Legislation in Guernsey governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

The Directors confirm they have discharged their responsibilities as noted above.

## Financial Statements

# Independent Auditor's Report

## *To the Members of Bushveld Minerals Limited*

### *For the year ended 31 December 2019*

### Opinion

We have audited the financial statements of Bushveld Minerals Limited and its subsidiaries (the 'group') for the year ended 31 December 2019 which comprise of the Consolidated Statement of Profit and Loss and Other Comprehensive Income, Consolidated Statement of Financial Position, Consolidated Statement of Changes in Equity, Consolidated Statement of Cash Flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union.

In our opinion, the financial statements:

- give a true and fair view of the state of the group's affairs as at 31 December 2019 and of the group's profit for the year then ended;
- are in accordance with IFRSs as adopted by the European Union; and
- comply with the requirements of The Companies (Guernsey) Law, 2008.

### Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the Directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the Directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

### Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current year and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the group financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

### Acquisition of Vanchem and gain on bargain purchase

The acquisition of Vanchem in November 2019 had a material impact on the Statement of Financial Position and required the directors to make significant judgements and estimates in determining whether Vanchem met the IFRS 3 definition of a business at acquisition date and in estimating the fair value of the assets and liabilities acquired. The acquisition resulted in a gain on bargain purchase of US\$60.6 million being recognised, which had a material impact on the group's result for the year. The acquisition was determined to be a key audit matter due to the allocation of resources during the audit and the level of judgement involved.

Our work included:

- Review of the Sale and Purchase Agreement.
- Consideration of the application of IFRS 3 Business Combinations to the transaction, including whether the Vanchem operations met the definition of 'a business' at the date of acquisition.
- Audit of the consideration recognised including consideration of the terms of the convertible loan note and consultation with RSM valuation specialists.
- Review of the work of a component auditor in corroborating and challenging the valuation of the assets acquired, including audit of the valuation methodology and the credentials and qualifications of the independent valuer.
- Visit to the acquired Vanchem operations and tour of the facilities.
- Challenge of management on the appropriateness of recognising a bargain purchase.
- Audit of the disclosures included in the financial statements in respect of the transaction.

The related disclosures are included in Note 8 in the financial statements.

## Impact of Covid-19 and assessment of going concern

The Covid-19 pandemic resulted in a cessation of operations at the Group's production sites in South Africa from the end of March 2020 through to 1 May 2020. As a result of the direct impact of Covid-19 on the Group's operations and the wider impact on global markets and economies, the directors updated their assessment of the appropriateness of the going concern basis of preparation to take account of the impact of the pandemic.

The assessment of risks in an uncertain economic environment requires judgement, and a risk of material misstatement arises in respect of an incorrect application of the going concern basis of preparation or the failure to disclose a material uncertainty. As a result, the potential impact of the Covid-19 outbreak was considered to be one of most significance in the audit and was therefore determined to be a key audit matter.

Our work included:

- Checking the integrity and accuracy of the cashflow forecasts and covenant calculations as provided to the Board of directors by management
- Challenging management on the reasonableness of the assumptions made in the forecasts, particularly in respect of production levels, vanadium prices, operating costs and capital expenditure
- Corroborating the reasonableness of assumptions and explanations provided by management to supporting information where available
- Stress-testing management's cashflow forecasts to assess the impact of assumptions worse than those included in management's forecasts
- Considering mitigating actions available to management and the level of headroom in the forecasts under various scenarios
- Discussing our findings with management and the Audit Committee
- Auditing the accuracy and completeness of disclosures made in the financial statements in respect of going concern and the impact of Covid-19
- Review of the work of component auditors on the going concern basis of preparation adopted in the financial statements of significant components

The directors have set out their analysis of the potential impact of the Covid-19 pandemic on the Group's operations and financial position in the description of the principal risks on pages 50 to 53, the going concern statement on page 108, the Finance Directors' statement on pages 38 to 39 and the post balance sheet events note on page 145.

## Our application of materiality

When establishing our overall audit strategy, we set certain thresholds which help us to determine the nature, timing and extent of our audit procedures. When evaluating whether the effects of misstatements, both individually and on the financial statements as a whole, could reasonably influence the economic decisions of the users we take into account the qualitative nature and the size of the misstatements. Materiality for the group financial statements as a whole was calculated as \$2,240,000. We agreed with the Audit Committee that we would report to them all unadjusted differences in excess of \$112,000, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

## An overview of the scope of our audit

The audit was scoped to ensure that we obtained sufficient and appropriate audit evidence in respect of:

- the significant business operations of the group
- other operations which, irrespective of size, are perceived as carrying a significant level of audit risk whether through susceptibility to fraud, or for other reasons
- the appropriateness of the going concern assumption used in the preparation of the financial statements

The audit was scoped to support our audit opinion on group financial statements of Bushveld Minerals Limited and was based on group materiality and an assessment of risk at group level.

Where components of the group were considered significant, the group engagement team were involved in the component auditor's planning and risk assessment and reviewed the component auditor's work in accordance with ISA (UK) 600. The Bushveld Vametco Holdings Proprietary Limited group and Bushveld Vanchem Proprietary Limited were identified as significant components and we visited the offices of the component auditors in South Africa to review the audit working papers and discuss the audit issues with the component auditors.

## Financial Statements

# Independent Auditor's Report continued

## *To the Members of Bushveld Minerals Limited*

### *For the year ended 31 December 2019*

### Other information

The Directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

### Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where The Companies (Guernsey) Law 2008 requires us to report to you if, in our opinion:

- proper accounting records have not been kept by the parent company; or
- the financial statements are not in agreement with the accounting records; or
- we have failed to obtain all the information and explanations which, to the best of our knowledge and belief, are necessary for the purposes of our audit.

### Responsibilities of Directors

As explained more fully in the Directors' responsibilities statement set out on page 97, the Directors are responsible for the preparation of the group's financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the group or to cease operations, or have no realistic alternative but to do so.

### Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (UK), we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Directors.
- Conclude on the appropriateness of the Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the group to cease to continue as a going concern.



- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, including the FRC's Ethical Standard, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current year and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

### Use of this report

This report is made solely to the company's members, as a body, in accordance with section 262 of The Companies (Guernsey) Law 2008. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

**RSM UK Audit LLP, Auditor**  
**Chartered Accountants**

25 Farringdon Street  
London, EC4A 4AB

23 June 2020

## Financial Statements

# Consolidated Statement of Profit or Loss and Other Comprehensive Income

*For the year ended 31 December 2019*

	Notes	2019 US\$	2018 US\$
<b>Continuing operations</b>			
Revenue	5	116,514,112	192,089,845
Cost of sales		(56,198,919)	(65,273,543)
<b>Gross profit</b>		<b>60,315,193</b>	126,816,302
Other operating income		922,385	7,420,109
Selling and distribution costs		(7,556,687)	(10,661,706)
Other mine operating costs		(3,865,303)	(2,508,971)
Idle plant costs		(2,893,286)	(2,688,422)
Administration expenses	6	(24,668,491)	(23,202,234)
<b>Operating profit</b>		<b>22,253,811</b>	95,175,078
Finance income	9	3,593,142	1,987,333
Finance costs	10	(1,669,456)	(1,233,406)
Share based payment economic empowerment transaction	34	–	(3,232,425)
Gain on bargain purchase	8	60,586,633	–
Movement in earnout estimate	30	(1,510,572)	(6,091,514)
<b>Profit before taxation</b>		<b>83,253,558</b>	86,605,066
Taxation	11	(14,005,965)	(37,604,907)
<b>Profit for the year</b>		<b>69,247,593</b>	49,000,159
<b>Consolidated other comprehensive income:</b>			
<b>Items that may not be reclassified to profit or loss:</b>			
Changes in the fair value of financial assets at fair value through other comprehensive income	22	(359,045)	659,007
Other fair value movements		110,175	21,796
<b>Total items that may not be reclassified to profit or loss</b>		<b>(248,870)</b>	680,803
<b>Items that may be reclassified to profit or loss:</b>			
Currency translation differences		6,413,737	(13,715,270)
<b>Total comprehensive income for the year</b>		<b>75,412,460</b>	35,965,692
<b>Profit attributable to:</b>			
Owners of the parent		61,968,301	30,215,509
Non-controlling interest		7,279,292	18,784,650
		<b>69,247,593</b>	49,000,159
<b>Total comprehensive income attributable to:</b>			
Owners of the parent		67,136,957	17,181,042
Non-controlling interest		8,275,503	18,784,650
		<b>75,412,460</b>	35,965,692
<b>Earnings per share</b>			
<b>Profit per ordinary share</b>			
Basic earnings per share (in cents)	12	5.51	2.90
Diluted earnings per share (in cents)	12	5.45	–

All results relate to continuing activities.

The accounting policies on pages 108 to 117 and the notes on pages 106 to 145 form an integral part of the consolidated financial statements.

# Consolidated Statement of Financial Position

*As at 31 December 2019*

	Notes	2019 US\$	2018 US\$
<b>Assets</b>			
<b>Non-Current Assets</b>			
Intangible assets – exploration and evaluation	13	59,408,821	57,150,425
Property, plant and equipment	14	185,269,063	47,881,162
Investment properties	16	2,905,449	2,816,007
Deferred tax	18	173,892	3,004,141
Financial assets – investments	17	4,420,891	–
<b>Total Non-Current Assets</b>		<b>252,178,116</b>	110,851,735
<b>Current Assets</b>			
Inventories	19	35,082,342	17,193,018
Trade and other receivables	20	4,427,793	32,586,185
Restricted investment	21	6,605,465	5,388,953
Current tax receivable		493,178	251,382
Financial assets at fair value	22	1,952,227	2,311,272
Cash and cash equivalents	23	34,011,557	42,019,123
<b>Total Current Assets</b>		<b>82,572,562</b>	99,749,933
<b>Total Assets</b>		<b>334,750,678</b>	210,601,668
<b>Equity and Liabilities</b>			
Share capital	28	15,357,271	14,921,079
Share premium	28	111,067,064	101,003,256
Retained income	28	83,415,438	21,447,137
Foreign currency translation reserve	28	(1,655,861)	(7,073,387)
Fair value reserve	28	(620,349)	(371,479)
<b>Equity attributable to owners of the parent</b>		<b>207,563,563</b>	129,926,606
Non-controlling interest		33,527,723	29,712,446
<b>Total Equity</b>		<b>241,091,286</b>	159,639,052
<b>Liabilities</b>			
<b>Non-Current Liabilities</b>			
Post-retirement medical liability	26	2,331,325	2,377,737
Environmental rehabilitation liability	27	17,844,066	6,632,607
Deferred consideration	30	7,108,819	17,427,512
Borrowings	24	41,756,152	–
Lease liabilities	15	4,677,338	–
<b>Total Non-Current Liabilities</b>		<b>73,717,700</b>	26,437,856
<b>Current Liabilities</b>			
Trade and other payables	25	15,721,502	20,203,795
Provisions	29	3,432,619	4,320,965
Lease liabilities	15	787,571	–
<b>Total Current Liabilities</b>		<b>19,941,692</b>	24,524,760
<b>Total Liabilities</b>		<b>93,659,392</b>	50,962,616
<b>Total Equity and Liabilities</b>		<b>334,750,678</b>	210,601,668

The consolidated financial statements and the notes on pages 106 to 145, were approved by the board of directors on 23 June 2020 and were signed on its behalf by:



**Tanya Chikanza**  
Finance Director

The accounting policies on pages 108 to 117 and the notes on pages 106 to 145 form an integral part of the consolidated financial statements.

## Financial Statements

# Consolidated Statement of Changes in Equity

For the year ended 31 December 2019

	Share capital US\$	Share premium US\$	Foreign exchange translation reserve US\$	Warrant reserve US\$	Fair value reserve US\$	Retained income US\$	Total attributable to equity holders of the group/ company US\$	Non-controlling interest US\$	Total equity US\$
<b>Balance at 1 January 2018</b>	<b>11,817,573</b>	<b>69,222,661</b>	<b>1,881,579</b>	<b>2,113,866</b>	<b>(1,052,282)</b>	<b>(13,121,418)</b>	<b>70,861,979</b>	<b>36,371,168</b>	<b>107,233,147</b>
Profit for the year	-	-	-	-	-	30,215,509	30,215,509	18,784,650	49,000,159
Other comprehensive income, net of tax:									
Currency translation differences	-	-	(8,954,966)	-	-	-	(8,954,966)	(4,760,304)	(13,715,270)
Fair value movement on investments	-	-	-	-	659,007	-	659,007	-	659,007
Other fair value movements	-	-	-	-	21,796	-	21,796	-	21,796
<b>Total comprehensive income for the year</b>	<b>-</b>	<b>-</b>	<b>(8,954,966)</b>	<b>-</b>	<b>680,803</b>	<b>30,215,509</b>	<b>21,941,346</b>	<b>14,024,346</b>	<b>35,965,692</b>
Transaction with owners:									
Issue of shares	2,556,053	27,548,150	-	-	-	-	30,104,203	-	30,104,203
Exercise of warrants	547,453	4,232,445	-	-	-	-	4,779,898	-	4,779,898
Reserve transfer	-	-	-	(2,113,866)	-	2,113,866	-	-	-
Change in non-controlling interest	-	-	-	-	-	2,239,180	2,239,180	(19,739,180)	(17,500,000)
Dividends paid to non-controlling interest	-	-	-	-	-	-	-	(943,888)	(943,888)
<b>Balance at 1 January 2019</b>	<b>14,921,079</b>	<b>101,003,256</b>	<b>(7,073,387)</b>	<b>-</b>	<b>(371,479)</b>	<b>21,447,137</b>	<b>129,926,606</b>	<b>29,712,446</b>	<b>159,639,052</b>
Profit for the year	-	-	-	-	-	61,968,301	61,968,301	7,279,292	69,247,593
Other comprehensive income, net of tax:									
Currency translation differences	-	-	5,417,526	-	-	-	5,417,526	996,211	6,413,737
Fair value movement on investments	-	-	-	-	(359,045)	-	(359,045)	-	(359,045)
Other fair value movements	-	-	-	-	110,175	-	110,175	-	110,175
<b>Total comprehensive income for the year</b>	<b>-</b>	<b>-</b>	<b>5,417,526</b>	<b>-</b>	<b>(248,870)</b>	<b>61,968,301</b>	<b>67,136,957</b>	<b>8,275,503</b>	<b>75,412,460</b>
Transaction with owners:									
Issue of shares	436,192	10,063,808	-	-	-	-	10,500,000	-	10,500,000
Dividends paid to non-controlling interest	-	-	-	-	-	-	-	(4,460,226)	(4,460,226)
<b>Balance at 31 December 2019</b>	<b>15,357,271</b>	<b>111,067,064</b>	<b>(1,655,861)</b>	<b>-</b>	<b>(620,349)</b>	<b>83,415,438</b>	<b>207,563,563</b>	<b>33,527,723</b>	<b>241,091,286</b>

Note 28 28

The accounting policies on pages 108 to 117 and the notes on pages 106 to 145 form an integral part of the consolidated financial statements.

# Consolidated Statement of Cash Flows

## *For the year ended 31 December 2019*

	Note	2019 US\$	2018 US\$
<b>Cash flows from operating activities</b>			
Profit before taxation		83,253,558	86,605,066
<b>Adjustments for:</b>			
Depreciation property, plant and equipment	14	10,388,145	6,039,339
Fair value economic empowerment transaction	34	–	3,232,425
Gain on bargain purchase	8	(60,586,633)	–
Movement in earnout estimate	30	1,510,572	6,091,514
Finance income	9	(3,593,142)	(1,987,333)
Finance costs	10	1,669,456	1,233,406
Changes in working capital		4,586,737	(25,350,569)
Income taxes paid		(8,767,312)	(30,923,733)
<b>Net cash from operating activities</b>		<b>28,461,381</b>	<b>44,940,115</b>
<b>Cash flows from investing activities</b>			
Finance income	9	3,593,142	1,987,333
Acquisition of business	8	(30,713,500)	–
Purchase of property, plant and equipment	14	(13,320,897)	(11,205,702)
Payment of deferred consideration	30	(3,600,000)	(17,500,000)
Purchase of investments	17	(4,420,891)	–
Purchase of exploration and evaluation assets	13	(1,268,697)	(1,553,219)
<b>Net cash from investing activities</b>		<b>(49,730,843)</b>	<b>(28,271,588)</b>
<b>Cash flows from financing activities</b>			
Finance costs		(108,596)	–
Net proceeds from issue of shares and warrants	28	–	4,139,825
Net proceeds from capital raised	24	–	19,006,177
Net proceeds/(repayment) of borrowings	24	18,582,864	(6,907,035)
Lease payments		(726,668)	–
Dividends paid		(4,460,226)	–
<b>Net cash from financing activities</b>		<b>13,287,374</b>	<b>16,238,967</b>
<b>Total cash movement for the year</b>		<b>(7,982,088)</b>	<b>32,907,494</b>
Cash at the beginning of the year		42,019,123	9,739,632
Effect of translation of foreign rate		(25,478)	(628,003)
<b>Total cash at end of the year</b>	23	<b>34,011,557</b>	<b>42,019,123</b>

The accounting policies on pages 108 to 117 and the notes on pages 106 to 145 form an integral part of the consolidated financial statements.



## Financial Statements

# Notes to the Consolidated Financial Statements

*For the year ended 31 December 2019*

## 1. Corporate information and principal activities

Bushveld Minerals Limited ('Bushveld') was incorporated and domiciled in Guernsey on 5 January 2012 and admitted to the AIM market in London on 26 March 2012.

The address of the Company's registered office is 18-20 Le Pollet, St Peter Port, Guernsey. The consolidated financial statements of the Company as at and for the year ended 31 December comprise of the Company and its subsidiaries (The 'Group') and the Group's interest in equity accounted investments.

Bushveld Resources Limited ('BRL') is an investment holding company formed to invest in resource-based vanadium mining and exploration companies in South Africa. The South African subsidiaries of BRL are Bushveld Vanchem (Proprietary) Limited ('Vanchem'), Pamish Investments No. 39 (Proprietary) Limited ('Pamish 39'), Amaraka Investments No. 85 (Proprietary) Limited ('Amaraka 85'), Bushveld Minerals SA (Proprietary) Limited, Great 1 Line Investment (Proprietary) Limited, Gemsbok Magnetite (Proprietary) Limited, Caber Trade and Invest 1 (Proprietary), Bushveld Vametco Alloys (Proprietary) Limited, Bushveld Vametco Holdings (Proprietary) Limited, Bushveld Vametco Properties (Proprietary) Limited, Bushveld Vanadium 1 (Proprietary) Limited and Bushveld Vanadium 2 (Proprietary) Limited.

The Lemur subsidiaries are integrated coal and power project development companies. The Lemur subsidiaries are the holder of 11 concession blocks in South West Madagascar covering the Imaloto Coal Basin.

As at 31 December 2019, the Bushveld Group comprised of:

Company	Note	Equity holding and voting rights	Country of incorporation	Nature of activities
Bushveld Minerals Limited		N/A	Guernsey	Ultimate holding company
Bushveld Resources Limited	1	100%	Guernsey	Holding company
Ivanti Resources Proprietary Limited	2	100%	South Africa	Mining and manufacturing company
Pamish Investments 39 (Pty) Limited	2	64.00%	South Africa	Mining and manufacturing company
Amaraka Investments 85 (Pty) Limited	2	68.50%	South Africa	Vanadium and iron ore exploration
Bushveld Minerals SA (Pty) Limited	2	100%	South Africa	Group support services
Bushveld Vanchem (Pty) Limited	13	100%	South Africa	Processing company
Great 1 Line Invest (Pty) Limited	2	62.5%	South Africa	Vanadium and iron ore exploration
Gemsbok Magnetite (Pty) Limited	2	74%	South Africa	Vanadium and iron ore exploration
Caber Trade and Invest 1 (Pty) Limited	2	51%	South Africa	Vanadium and iron ore exploration
Bushveld Vanadium 2 (Pty) Limited	2	100%	South Africa	Mining and manufacturing company
Bushveld Energy Limited	1	84.00%	Mauritius	Holding company
Bushveld Energy Company (Pty) Limited	4	100%	South Africa	Energy development
Bushveld Vametco Hybrid Mini Grid Company (RF) (Pty)	12	100%	South Africa	Energy development
Bushveld Vametco Limited	2	100%	Guernsey	Holding company
Strategic Minerals Connecticut LLC	7	100%	United States	Holding company
Bushveld Vanadium 1 (Pty) Limited	8	100%	South Africa	Holding company
Bushveld Vametco Holdings (Pty) Limited	11	74%	South Africa	Holding company
Bushveld Vametco Alloys (Pty) Limited	9	100%	South Africa	Mining and manufacturing company
Bushveld Vametco Properties (Pty) Limited	10	100%	South Africa	Property owning company
Lemur Holdings Limited	1	100%	Mauritius	Holding company
Coal Mining Madagascar SARL	5	99%	Madagascar	Coal exploration
Imaloto Power Project Limited	3	100%	Mauritius	Holding company
Imaloto Power Project Company SARL	6	99.00%	Madagascar	Power generation company
Lemur Investments Limited	3	100%	Mauritius	Holding company
Enerox Holdings Limited	4	50%	Guernsey	Holding company

1 Held directly by Bushveld Minerals Limited.

2 Held by Bushveld Resources Limited.

3 Held by Lemur Holdings Limited.

4 Held by Bushveld Energy Limited.

5 Held by Lemur Investments Limited.

6 Held by Imaloto Power Limited.

7 Held by Bushveld Vametco Limited.

8 Held by Strategic Minerals Connecticut LLC.

9 Held by Bushveld Vametco Holdings (Pty) Limited.

10 Held by Vametco Alloys (Pty) Limited.

11 Held by Bushveld Vanadium 1 (Pty) Limited.

12 Held by Bushveld Energy Company (Pty) Limited.

13 Held By Bushveld Vanadium 2 (Pty) Limited.

## 2. Adoption of new and revised standards

### Accounting standards and interpretations applied

IFRS 16 Leases	The new standard recognises a right of use asset and a lease liability for almost all leases and requires them to be accounted for in a consistent manner. This introduces a single lessee accounting model and eliminates the previous distinction between an operating lease and a finance lease.
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### Accounting standards and interpretations not applied

Standards, amendments and interpretations to existing standards that are not yet effective and have not been early adopted by the Group:

IFRS 17 Insurance Contracts	The new standard requires insurance liabilities to be measured at a current fulfilment value and provides a more uniform measurement and presentation approach for all insurance contracts. These requirements are designed to achieve the goal of a consistent, principle-based accounting for insurance contracts.
IFRS 9 Prepayment Features with Negative Compensation – (Amendments to IFRS 9)	Under IFRS 9, a debit instrument can be measured at amortised cost or at fair value through other comprehensive income, provided that the contractual cash flows are 'solely payments of principal and interest on the principal amount outstanding' (the SPPI criterion) and the instrument is held within the appropriate business model for that classification. The amendments to IFRS 9 clarify that a financial asset passes the SPPI criterion regardless of the event or circumstance that causes the early termination of the contract and irrespective of which party pays or receives reasonable compensation for the early termination of the contract.
IFRS 10 and IAS 28 Sale or Contribution of Assets between an Investor and its Associate or Joint Venture – (Amendments to IFRS 10 and IAS 28)	The amendments address the conflict between IFRS 10 and IAS 28 in dealing with the loss of control of a subsidiary that is sold or contributed to an associate or joint venture.
IFRS 3, Definition of a Business – (Amendments to IFRS 3)	The IASB issued amendments to the definition of a business in IFRS 3 Business Combinations to help entities determine whether an acquired set of activities and assets is a business or not. They clarify the minimum requirements for a business, remove the assessment of whether market participants are capable of replacing any missing elements, add guidance to help entities assess whether an acquired process is substantive, narrow the definitions of a business and of outputs, and introduce an optional fair value concentration test. New illustrative examples were provided along with the amendments.
IAS 1 and IAS 8 – Definition of Material – (Amendments to IAS 1 and IAS 8)	In October 2018, the IASB issued amendments to IAS 1 Presentation of Financial Statements and IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors to align the definition of 'material' across the standards and to clarify certain aspects of the definition. The new definition states that, 'Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity'.
AIP IFRS 11 Joint Arrangements: Previously held interests in a joint operation	The amendment clarifies that if a party participates in, but does not have joint control of, a joint operation and subsequently obtains joint control of the joint operation (which constitutes a business as defined in IFRS 3) that, in such cases, previously held interests in the joint operation are not remeasured.
AIP IAS 12 Income Taxes: Income tax consequences of payments on financial instruments classified as equity	The amendment specifies that the income tax consequences on dividends are recognised in profit or loss, other comprehensive income or equity according to where the entity originally recognised the events or transactions which generated the distributable reserves.
AIP IAS 23 Borrowing Costs: Borrowing costs eligible for capitalisation	The amendment specifies that when determining the weighted average borrowing rate for purposes of capitalising borrowing costs, the calculation excludes borrowings which have been made specifically for the purposes of obtaining a qualifying asset, but only until substantially all the activities necessary to prepare the asset for its intended use or sale are complete.

The Directors anticipate that the adoption of these Standards and Interpretations, which become effective for annual periods beginning on or after 1 January 2020, in future periods will have no material impact on the financial statements of the Group.

**Financial Statements**

# Notes to the Consolidated Financial Statements continued

*For the year ended 31 December 2019*

**3. Significant accounting policies****Basis of accounting**

These financial statements have been prepared in accordance with International Financial Reporting Standards, International Accounting Standards and Interpretations (collectively 'IFRS') issued by the International Accounting Standards Board ('IASB') as adopted by the European Union ('EU adopted IFRS').

The financial year covers the 12 months to 31 December 2019. The comparative period covered the 12 month period to 31 December 2018.

The consolidated financial statements have been prepared under the historical cost basis, except for the revaluation of certain financial instruments and investment properties to fair value. Historical cost is generally based on the fair value of the consideration given in exchange for the assets. The principal accounting policies are set out below.

**Going concern**

The group closely monitors and manages its liquidity risk, cash forecasts are regularly produced and sensitivities run for different scenarios including, but not limited to, changes in commodity prices and different production profiles from the group's producing assets. The Group will continue to prioritise operational performance, cost efficiencies and synergies across Vametco and Vanchem, and will maintain a disciplined approach towards managing capital expenditure and optimising operating margins. Our operations resumed in early May following a 35-day national Covid-19 lockdown, in South Africa during which Vanchem was non-operational and Vametco was classified as essential services and had limited production. Based on the current status of the group's finances, having considered going concern forecasts and reasonably possible investments, downside and Covid-19 scenarios, the group's forecasts demonstrate it will have sufficient liquidity headroom to meet its obligations in the ordinary course of business for the next 12 months from the date of approval of the financial statements.

Accordingly the directors are satisfied that the group continues to adopt the going concern basis of accounting in preparation of the 31 December 2019 financial statements.

**Basis of consolidation****Subsidiaries**

Subsidiaries are all entities (including structured entities) over which the group has control. The group controls an entity when the group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the group. They are deconsolidated from the date that control ceases.

The group applies the acquisition method to account for business combinations. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The group recognises any non-controlling interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets.

Acquisition-related costs are expensed as incurred.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Subsequent transactions that do not result in the obtaining of control are accounted for as equity transactions as follows:

- The carrying amounts of the controlling and non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary
- Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid is recognised directly in equity and attributed to the owners of the parent

Any contingent consideration to be transferred by the group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in accordance with IFRS 9 either in profit or loss or as a change to other comprehensive income. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between group companies are eliminated. Unrealised losses are also eliminated. When necessary amounts reported by subsidiaries have been adjusted to conform to the group's accounting policies.

## Disposal of subsidiaries

When the group ceases to have control, any retained interest in the entity is re-measured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

## Non-controlling interests

Non-controlling interests in subsidiaries are identified separately from the group's equity therein. Those interests of non-controlling shareholders that present ownership interests entitling their holders to a proportionate share of the net assets upon liquidation are initially measured at fair value. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests' share of subsequent changes in equity. Total comprehensive income is attributed to non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Black Economic Empowerment ('BEE') interests are accounted for as non-controlling interests on the basis that the group does not control these entities.

## Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the board of directors, which makes strategic decisions.

## Foreign currencies

### Functional and presentational currency

The individual financial statements of each group company are prepared in the currency of the primary economic environment in which they operate (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each group company are expressed in US Dollars, which is the presentation currency for the consolidated financial statements.

### Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement.

**Financial Statements**

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

**3. Significant accounting policies continued****Foreign currencies continued**

## Group companies

The results and financial position of all the group entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- a) assets and liabilities for each statement of financial position presented are translated at the closing rate;
- b) income and expenses for each income statement are translated at average exchange rates (unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rate on the dates of the transactions); and
- c) all resulting exchange differences are recognised in other comprehensive income.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate. Exchange differences arising are recognised in other comprehensive income.

**Revenue recognition**

## Sale of goods/products

IFRS 15 requires revenue from contracts with customers to be recognised when the separate performance obligations are satisfied, which is when control of promised goods or services are transferred to the customer.

The entity satisfies a performance obligation by transferring control of the promised goods/products to the customer. In the standard 'control of an asset' refers to the ability to direct the use of, and obtain substantially all of the remaining benefits from, the asset. Control includes the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset.

The group recognises revenue at the amount that reflects the consideration to which the entity expects to be entitled in exchange for transferring goods or services to a customer. Revenue with contract customers is generated from sale of goods and is recognised upon delivery of the goods to the customer, at a point in time and comprises the invoiced amount of goods to customers, net of value added tax.

**Cost of sales**

When inventories are sold, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised. The amount of any write-down of inventories to net realisable value and all losses of inventories are recognised as an expense in the period in which the write-down or loss occurs.

**Share based payments**

The Group may issue equity-settled share based payment instruments to BBE shareholders to either obtain or retain BEE credentials. Equity-settled share-based payments are measured at the fair value of the instruments at the date of the grant.

In addition, equity-settled share-based compensation benefits are provided to directors and employees under the Group's incentive schemes.

Equity-settled transactions are awards of shares, or options over shares, that are provided to employees in exchange for the rendering of services.

The cost of equity-settled transactions are measured at fair value on grant date. Fair value is independently determined using either the Binomial or Black-Scholes option pricing model that takes into account the exercise price, the term of the option, the impact of dilution, the share price at grant date and expected price volatility of the underlying share, the expected dividend yield and the risk free interest rate for the term of the option, together with non-vesting conditions that do not determine whether the consolidated entity receives the services that entitle the employees to receive payment. No account is taken of any other vesting conditions.



The cost of equity-settled transactions is recognised as an expense with a corresponding increase in equity over the vesting period. The cumulative charge to profit or loss is calculated based on the grant date fair value of the award, the best estimate of the number of awards that are likely to vest and the expired portion of the vesting period. The amount recognised in profit or loss for the period is the cumulative amount calculated at each reporting date less amounts already recognised in previous periods.

Market conditions are taken into consideration in determining fair value. Therefore any awards subject to market conditions are considered to vest irrespective of whether or not that market condition has been met, provided all other conditions are satisfied.

If equity-settled awards are modified, as a minimum an expense is recognised as if the modification has not been made. An additional expense is recognised, over the remaining vesting period, for any modification that increases the total fair value of the share-based compensation benefit as at the date of modification.

If the non-vesting condition is within the control of the consolidated entity or employee, the failure to satisfy the condition is treated as a cancellation. If the condition is not within the control of the consolidated entity or employee and is not satisfied during the vesting period, any remaining expense for the award is recognised over the remaining vesting period, unless the award is forfeited.

If equity-settled awards are cancelled, it is treated as if it has vested on the date of cancellation, and any remaining expense is recognised immediately. If a new replacement award is substituted for the cancelled award, the cancelled and new award is treated as if they were a modification.

## Finance income

Interest revenue is recognised when it is probable that economic benefits will flow to the group and the amount of revenue can be measured reliably. Interest revenue is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount on initial recognition.

## Taxation

The tax expense represents the sum of the tax currently payable and deferred tax.

The tax charge is based on taxable profit for the year. The group's liability for current tax is calculated by using tax rates that have been enacted or substantively enacted by the reporting date.

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amount of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit, and is accounted for using the 'balance sheet liability' method.

Deferred tax liabilities are recognised for all taxable temporary differences and deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised. Deferred tax is calculated at the tax rates that are expected to apply to the year when the asset is realised or the liability is settled based upon rates enacted and substantively enacted at the reporting date. Deferred tax is charged or credited to profit or loss, except when it relates to items credited or charged to other comprehensive income, in which case the deferred tax is also dealt with in other comprehensive income.

## Intangible exploration and evaluation assets

All costs associated with mineral exploration and evaluation including the costs of acquiring prospecting licences; mineral production licences and annual licences fees; rights to explore; topographical, geological, geochemical and geophysical studies; exploratory drilling; trenching, sampling and activities to evaluate the technical feasibility and commercial viability of extracting a mineral resource; are capitalised as intangible exploration and evaluation assets and subsequently measured at cost.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 3. Significant accounting policies continued

#### Intangible exploration and evaluation assets continued

If an exploration project is successful, the related expenditures will be transferred at cost to property, plant and equipment and amortised over the estimated life of the commercial ore reserves on a unit of production basis (with this charge being taken through profit or loss). Where a project does not lead to the discovery of commercially viable quantities of mineral resources and is relinquished, abandoned, or is considered to be of no further commercial value to the group, the related costs are recognised in profit or loss.

The recoverability of capitalised exploration costs is dependent upon the discovery of economically viable ore reserves, the ability of the group to obtain necessary financing to complete the development of ore reserves and future profitable production or proceeds from the extraction or disposal thereof.

#### Impairment of exploration and evaluation assets

Whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable, the asset is reviewed for impairment. Assets are also reviewed for impairment at each reporting date in accordance with IFRS 6. An asset's carrying value is written down to its estimated recoverable amount (being the higher of the fair value less costs to sell and value in use) if that is less than the asset's carrying value. Impairment losses are recognised in profit or loss.

An impairment review is undertaken when indicators of impairment arise but typically when one of the following circumstances applies:

- unexpected geological occurrences that render the resources uneconomic; or
- title to the asset is compromised; or
- variations in mineral prices that render the project uneconomic; or
- variations in the foreign currency rates; or
- the group determines that it no longer wishes to continue to evaluate or develop the field.

#### Property, plant and equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation, except for investment properties which are carried at fair value. Depreciation is calculated on the straight line method to write off the cost of each asset (less residual value) over its estimated useful life as follows:

Buildings and other improvements	20–25 years
Plant and machinery	15–20 years
Motor vehicles, furniture and equipment	4–10 years
Decommissioning asset	Life of mine
Waste stripping asset	21 months

Repairs and maintenance is generally charged in profit and loss during the financial period in which it is incurred. However renovations are capitalised and included in the carrying amount of the asset when it is probable that future economic benefits will flow to the group. Major renovations are depreciated over the remaining useful life of the related asset.

An item of property, plant and equipment is derecognised upon disposal or when no future benefits are expected from its use or disposal. Any gain or loss arising from de-recognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the income statement in the year the asset is derecognised.

#### Investment property

Investment property is initially measured at cost and subsequently at fair value with any change therein recognised in profit or loss. Any gain or loss on disposal of investment property (calculated as the difference between the net proceeds from disposal and the carrying amount of the item) is recognised in profit or loss.

## Impairment of property, plant and equipment

At each reporting date, the group reviews the carrying amounts of its tangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where the asset does not generate cash flows that are independent from other assets, the group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Where there has been a change in economic conditions that indicate a possible impairment in a cash-generating unit, the recoverability of the net book value relating to that field is assessed by comparison with the estimated discounted future cash flows based on management's expectations of future commodity prices and future costs.

The recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted. If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised as an expense immediately, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease. Where conditions giving rise to impairment subsequently reverse, the effect of the impairment charge is also reversed as a credit to the income statement, net of any depreciation that would have been charged since the impairment.

## Inventories

Inventories are valued at the lower of cost or estimated net realisable value. Cost is determined on the following basis:

Raw materials	weighted average cost
Consumable stores	weighted average cost
Work in progress	weighted average cost
Finished product	weighted average cost

The cost of finished product and work in progress comprises of raw materials, direct labour, other direct costs, and related production overheads (based on normal operating capacity) but excludes borrowing costs.

Net realisable value is the estimated selling price in the ordinary course of business, less costs of completion and selling expenses.

## Financial assets and liabilities

Financial assets and financial liabilities are recognised in the group's statement of financial position when the group becomes a party to the contractual provisions of the instrument. Financial instruments are classified into specified categories dependent upon the nature and purpose of the instruments at the time of initial recognition. All financial assets are recognised as loans and receivables or available for sale investments and all financial liabilities are recognised as other financial liabilities.

## Financial assets

The Group initially measures all financial assets at fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs. Financial assets are classified at initial recognition and subsequently measured at amortised cost, fair value through other comprehensive income (OCI) or fair value through profit or loss.

The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them.

In order for a financial asset to be classified and measured at amortised cost or fair value through OCI, it needs to give rise to cash flows that are 'solely payments of principal and interest' (SPPI) on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level.

The Group's business model for managing financial assets refers to how it manages its financial assets in order to generate cash flows. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both.

**Financial Statements**

# Notes to the Consolidated Financial Statements continued

*For the year ended 31 December 2019*

**3. Significant accounting policies continued****Trade and other receivables**

Trade and other receivables are stated initially recognised at the fair value of the consideration receivable and subsequently measured at amortised cost using the effective interest method, less any allowance for expected credit losses. Allowances for expected credit losses are recognised when there is objective evidence that the group will be unable to collect all of the amounts due under the terms of the receivable, the amount of such a provision being the difference between the carrying amount and the present value of the future expected cash flows associated with the impaired receivable.

**Restricted investment**

Restricted investment comprises of short-term deposits with an original maturity of three months or less and an investment in an investment fund. These funds are dedicated towards future rehabilitation expenditure on the mine property.

**Cash and cash equivalents**

Cash and cash equivalents comprise cash at hand and deposits on a term of not greater than three months.

**Trade and other payables**

Trade and other payables are initially recognised at fair value. They are subsequently measured at amortised cost using the effective interest rate method.

**Investments and other financial assets**

Listed shares held by the group that are traded in an active market are classified as being available for sale and are stated at fair value. The fair value of such investments is determined by reference to quoted market prices.

IFRS 9 requires all equity investments to be measured at fair value. The default approach is for all changes in fair value to be recognised in profit or loss (FVPL). However, for equity investments that are not held for trading, entities can make an irrevocable election at initial recognition to classify the instruments at FVOCI, with all subsequent changes in fair value being recognised in other comprehensive income (OCI). This election is available for each separate investment.

Under this new FVOCI category, fair value changes are recognised in OCI while dividends are recognised in profit or loss.

Although it might appear similar to the AFS category in IAS 39, it is important to note that this is a new measurement category which is different. In particular, under the new category, on disposal of the investment the cumulative change in fair value must remain in OCI and is not recycled to profit or loss. However, entities have the ability to transfer amounts between reserves within equity.

**Financial assets at fair value through profit or loss**

Financial assets not measured at amortised cost or at fair value through other comprehensive income are classified as financial assets at fair value through profit or loss. Typically, such financial assets will be either: (i) held for trading, where they are acquired for the purpose of selling in the short-term with an intention of making a profit, or a derivative; or (ii) designated as such upon initial recognition where permitted. Fair value movements are recognised in profit or loss.

**Financial assets at fair value through other comprehensive income**

Financial assets at fair value through other comprehensive income include equity investments which the consolidated entity intends to hold for the foreseeable future and has irrevocably elected to classify them as such upon initial recognition.

## Financial liabilities and equity

Financial liabilities (including loans and advances due to related parties) and equity instruments are classified according to the substance of the contractual arrangements entered into. An equity instrument is any contract that evidences a residual interest in the assets of the group after deducting all of its liabilities. When the terms of a financial liability are negotiated with the creditor and settlement occurs through the issue of the Company's equity instruments, the equity instruments are measured at fair value and treated as consideration for the extinguishment of the liability. Any difference between the carrying amount of the liability and the fair value of the equity instruments issued is recognised in profit or loss.

### Convertible loan

Interest-bearing loans are recorded initially at their fair value, net of direct transaction costs. Such instruments are subsequently carried at their amortised cost and finance charges, including premiums payable on settlement, redemption or conversion, are recognised in profit or loss over the term of the instrument using the effective rate of interest.

Instruments where the holder has the option to redeem for cash or convert into a pre-determined quantity of equity shares are classified as compound instruments and presented partly as a liability and partly as equity.

Instruments where the holder has the option to redeem for cash or convert into a variable quantity of equity shares are classified separately as a loan and a derivative liability.

Where conversion results in a fixed number of equity shares, the fair value of the liability component at the date of issue is estimated using the prevailing market interest rate for a similar non-convertible instrument. The difference between the proceeds of issue and the fair value assigned to the liability component, representing the embedded option to convert the liability into equity of the group, is included in equity. Where conversion is likely to result in a variable quantity of equity shares the related derivative liability is valued and included in liabilities.

The interest expense on the liability component is calculated by applying the prevailing market interest rate for similar non-convertible debt to the instrument. The difference between this amount and the interest paid is added to the carrying value of the convertible loan note.

Derivative liabilities are revalued at fair value at the reporting date, and changes in the valuation amounts are credited or charged to the profit or loss.

### Warrants

Warrants issued by the company are recorded at fair value on initial recognition net of transaction costs. The fair value of warrants granted is recognised as an expense or as share issue costs, with a corresponding increase in equity. The fair value of the warrants granted is measured using the Black Scholes valuation model for options without market conditions and using the binomial method for those with market conditions, taking into account the terms and conditions under which the options were granted. The amount recognised as an expense is adjusted to reflect the actual number of warrants that vest.

### IFRS 16 Leases

The group elected to apply IFRS 16 utilising the modified retrospective approach, no cumulative effect of initially applying IFRS 16 was identified and recognised as an adjustment to the opening balance of retained earnings. The cumulative impact on the adoption of IFRS 16 resulted in the recognition of right of use assets, lease liabilities and the resultant deferred tax. Refer to Note 15 for the detail on the right of use assets and lease liabilities. Comparative information has not been restated.

For contracts previously classified as leases under IAS 17 Leases, the group has reassessed whether the contract is or contains a lease upon initial transition to the new standard and has also performed an assessment to identify significant contracts which have not previously been classified as leases, but which may be a lease under the new standard.



## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 3. Significant accounting policies continued

#### Provisions

##### General

Provisions are recognised when the group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Where the group expects some or all of a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognised as a separate asset but only when the reimbursement is virtually certain. The expense relating to any provision is presented in the statement of comprehensive income, provisions are discounted using a current pre-tax rate that reflects, where appropriate, the risks specific to the liability. Where discounting is used the increase in the provision due to the passage of time is recognised as a finance cost.

##### i. Environmental rehabilitation liability

The group is exposed to environmental liabilities relating to its operations. Full provision for the cost of environmental and other remedial work such as reclamation costs, close down and restoration costs and pollution control is made based on the estimated cost as per the Environmental Management Program Report. Annual increases in the provisions relating to change in the net present value of the provision and inflationary increases are shown in the statement of comprehensive income as a finance cost. Changes in estimates of the provision are accounted for in the year the change in estimate occurs, and is charged to either the statement of comprehensive income or the decommissioning asset in property, plant and equipment, depending on the nature of the liability.

##### ii. Post-retirement medical liability

The liability in respect of the defined benefit medical plan is the present value of the defined benefit obligation at the reporting date together with adjustments for actuarial gains/losses. Any actuarial gains or losses are accounted for in other comprehensive income. The defined benefit obligation is calculated annually by independent actuaries using the projected unit of credit method.

##### iii. Provident fund contributions

The group's contributions to the defined contribution plan are charged to profit and loss in the year to which they relate.

### Use of estimates and judgements

In the application of the group's accounting policies, the directors are required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates in particular, information about significant areas of estimation uncertainty considered by management in preparing the financial statements is described below:

##### i. Decommissioning and rehabilitation obligations

Estimating the future costs of environmental and rehabilitation obligations is complex and requires management to make estimates and judgements as most of the obligations will be fulfilled in the future and contracts and laws are often not clear regarding what is required. The resulting provisions are further influenced by changing technologies, political, environmental, safety, business and statutory considerations.

##### ii. Asset lives and residual values

Property, plant and equipment are depreciated over its useful life taking into account residual values, where appropriate. The actual lives of the assets and residual values are assessed annually and may vary depending on a number of factors. In reassessing asset lives, factors such as technological innovation, product life cycles and maintenance programmes are taken into account. Residual value assessments consider issues such as future market conditions, the remaining life of the asset and projected disposal values.

**iii. Post-retirement employee benefits**

Post-retirement medical aid liabilities are provided for certain existing employees. Actuarial valuations are based on assumptions which include employee turnover, mortality rates, the discount rate, health care inflation costs and rates of increase in costs.

**iv. Surface rights liabilities**

The group has provided for surface lease costs that would accrue to the owners of the land on which the mine is built. The quantum of the amounts due post implementation of the Mineral and Petroleum Resources Development Act (MPRDA) and the granting of the new order mining right to the group is somewhat uncertain, and need to be negotiated with such owners. The group has conservatively accrued for possible costs in this regard, but the actual obligation may be materially different when negotiations with the relevant parties are completed.

**v. Revaluation of investment properties**

The group carries its residential investment properties at fair value. The group engaged an independent valuation specialist to assess the fair value as at 31 December 2019 for residential properties. For residential properties, it measures land and buildings at revalued amounts with changes in fair value being recognised in other comprehensive income. Land and buildings were valued by reference to market-based evidence, using comparable prices adjusted for specific market factors such as nature, location and condition of the property. The key assumptions used to determine the fair value of the residential properties are provided in Note 16.

**vi. Impairment of exploration and evaluation assets**

Determining whether an exploration and evaluation asset is impaired requires an assessment of whether there are any indicators of impairment, including by reference to specific impairment indicators prescribed in IFRS 6 – Exploration for and Evaluation of Mineral Resources. If there is any indication of potential impairment, an impairment test is required based on value in use of the asset. The valuation of intangible exploration assets is dependent upon the discovery of economically recoverable deposits which, in turn, is dependent on future vanadium and iron ore prices, future capital expenditures and environmental and regulatory restrictions. The directors have concluded that there are no indications of impairment in respect of the carrying value of intangible assets at 31 December 2019 based on planned future development of the projects and current and forecast commodity prices. See Note 12 for details of exploration and evaluation assets.

**vii. IFRS 3 Business combination**

In accounting for the acquisition of Vanchem as a business combination, the company assessed whether Vanchem met the IFRS 3 definition of 'a business'. IFRS 3 states that 'a business consists of inputs and processes applied to those inputs that have the ability to create outputs' and we have concluded that, at the date of acquisition, Vanchem had inputs (inventories and plant and equipment with installed capacity), processes (methodology, manufacturing ability, intellectual property and a skilled workforce) and the ability to produce outputs in the form of vanadium products.

IFRS 3 requires an acquirer to measure the cost of the acquisition at the fair value of the consideration paid, and measure acquired identifiable assets and liabilities at their fair values, with any excess of acquired assets and liabilities over the consideration paid (a 'bargain purchase') recognised in profit or loss immediately. As detailed in Note 8, the company engaged an independent valuation expert to value the assets acquired using the cost approach, which we consider to be the most appropriate fair value measurement technique given the nature of the assets acquired and the circumstances of the acquisition.

Where a business combination results in a bargain purchase, IFRS 3 requires that the acquirer to reassess whether it has correctly identified all of the assets and liabilities acquired and to review the procedures used to measure the fair values recognised at the acquisition date.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

### 4. Segmental reporting

The reporting segments are identified by the directors of the group (who are considered to be the chief operating decision makers) by the way that group's operations are organised. As at 31 December 2019 the group operated within four operating segments, mineral exploration activities for iron ore and vanadium, vanadium mining and production, coal exploration and energy. Activities take place in South Africa (iron ore, vanadium and energy) and Madagascar (coal).

### Segment revenue and results

The following is an analysis of the group's revenue and results by reportable segment.

	Vanadium and iron ore exploration US\$	Vanadium mining and production US\$	Energy US\$	Total US\$
<b>Year ended 31 December 2019 Results</b>				
Segment revenue	–	116,442,585	71,527	116,514,112
Segment costs	–	(83,752,365)	(530,041)	(84,282,406)
Segmental (loss)/profit	–	32,690,220	(458,514)	32,231,706
<b>Year ended 31 December 2018 Results</b>				
Segment revenue	–	192,089,845	–	192,089,845
Segment costs	(2,721,652)	(84,051,698)	(231,540)	(87,004,890)
Segmental (loss)/profit	(2,721,652)	108,038,147	(231,540)	105,084,955

During the year there were no costs incurred for the exploration of vanadium and iron ore as well as the coal segment. Costs attributable to both segments were of a capital nature.

The reconciliation of segmental profit to the group's profit before tax is as follows:

	Year ended 31 December 2019 US\$	Year ended 31 December 2018 US\$
Segmental profit	32,231,706	105,084,955
Unallocated costs	(9,977,896)	(13,142,302)
Gain on bargain purchase	60,586,633	–
Movement in earnout estimate	(1,510,572)	(6,091,514)
Finance income	3,593,142	1,987,333
Finance costs	(1,669,455)	(1,233,406)
Profit before tax	83,253,558	86,605,066

Unallocated costs relate primarily to corporate costs and parent company overheads not attributable to a specific segment.

## Other segmental information

	Vanadium and iron ore exploration US\$	Vanadium mining and production US\$	Coal exploration US\$	Bushveld Energy US\$	Total US\$
<b>31 December 2019</b>					
Intangible assets – exploration and evaluation	56,827,085	–	2,581,736	–	59,408,821
<b>Total reportable segmental net assets</b>	<b>56,827,085</b>	<b>201,456,855</b>	<b>2,581,736</b>	<b>6,760,468</b>	<b>267,626,144</b>
Unallocated net liabilities					(26,534,858)
<b>Total consolidated net assets</b>					<b>241,091,286</b>
<b>31 December 2018</b>					
Intangible assets – exploration and evaluation	55,639,067	–	1,511,358	–	57,150,425
<b>Total reportable segmental net assets</b>	<b>55,639,067</b>	<b>132,200,627</b>	<b>1,511,358</b>	<b>(420,254)</b>	<b>188,930,798</b>
Unallocated net liabilities					(29,291,746)
<b>Total consolidated net assets</b>					<b>159,639,052</b>

Unallocated assets and liabilities relate to corporate and parent company assets and liabilities not attributable to a specific segment.

## 5. Revenue

	2019 US\$	2018 US\$
<b>Revenue from contracts with customers</b>		
Sale of goods	116,442,585	191,344,909
Rendering of services	–	744,936
Bushveld Energy services rendered	71,527	–
	<b>116,514,112</b>	192,089,845
<b>Disaggregation of revenue from contracts with customers</b>		
The company disaggregates revenue from customers as follows:		
<b>Sale of goods</b>		
Local sales of vanadium – NV12	4,118,063	16,931,800
Local sales of vanadium – NV16	87,076	101,232
Local sales of vanadium – MVO	2,406	243,651
Export sales of vanadium – NV12	17,083,662	18,183,896
Export sales of vanadium – NV16	95,011,546	155,884,330
Export sales of vanadium – AMV	139,832	–
	<b>116,442,585</b>	191,344,909
<b>Rendering of services</b>		
Bushveld Energy services rendered	71,527	–
Export tolling – MVO	–	744,936
	<b>71,527</b>	744,936
<b>Total revenue from contracts with customers</b>	<b>116,514,112</b>	192,089,845

Revenue with contract customers is generated from sale of goods and is recognised upon delivery of the goods to the customer, at a point in time and comprises the invoiced amount of goods to customers, net of value added tax.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 6. Administrative expenses by nature

	2019 US\$	2018 US\$
<b>The profit for the year has been arrived at after charging:</b>		
Shares issued to directors and senior employees	–	8,333,360
Staff costs	<b>9,616,139</b>	7,166,859
Depreciation of property, plant and equipment	<b>232,131</b>	182,159
Professional fees	<b>7,619,272</b>	1,886,507
Bad debts	<b>3,016,120</b>	–
Foreign exchange loss	–	91,082
Other	<b>4,184,829</b>	5,542,267
<b>Total administrative expenses</b>	<b>24,668,491</b>	23,202,234

### 7. Staff costs

Details of directors' remuneration are included in Note 35 (related party transactions) and the Remuneration Report.

### 8. Acquisitions

#### 8.1 Acquisition of Bushveld Vanchem Business

On 7 November 2019, the Bushveld group completed the acquisition of 100% of the Vanchem Plant as well as 100 per cent of Ivanti Propriety Limited from Duferco Investments ('Duferco').

A viable business case for Vanchem Vanadium Products 'VVP' was formulated with key focus on ore feedstock from within the Group (Mokopane) and a refurbishment programme, and presented to the Board of Directors ('BoD') in June 2018. The BoD approved that Bushveld reopened negotiations with Duferco, including revised commercial terms and an extended exclusivity period. An approach to Duferco was made and an initial agreement was reached with Duferco which resulted in the execution of the term sheet on 5 December 2018. The agreement was for a Transaction consideration of US\$68 million. The US\$68 million was made up of deposit of US\$6.8 million payable when the definitive agreements had been executed (01 May 2019) with the balance of US\$61.2 million payable on then-envisaged Transaction closing dates of 30 June 2019 or 30 September 2019 (long stop date). The final executed purchase price of US\$53.5 million plus a working capital adjustment for the acquisition was renegotiated in September 2019, the fair value of the consideration price is reflected in section C below.



Acquisition rationale remained clear:

- Would significantly contribute toward Bushveld's Vanadium production growth strategy of 8,400 tVpa in the next five years;
- Brownfields expansion (total acquisition and refurbishment capex was estimated to be around US\$140 million for circa 4,200 tVpa capacity including Mokopane mine development, this compared favourably against the then estimated US\$350 million capital requirement to develop and build 5,400 tV facility at Mokopane);
- Would facilitate the expeditious development of Mokopane, preserving the tenure of the project and ensuring the option for an end-to-end production facility would be crystallised;
- Would provide geographic diversification with Bushveld production now in two geographic locations;
- Would provide production diversification – moving from a one kiln company to a four-kiln group;
- Would provide product diversification – moving from a single product offering to a wider range of products comprised of Nitrovan, FeV, V<sub>2</sub>O<sub>5</sub> and specialized chemical products;
- Significant NPV at long-term FeV price estimates at a conservative long-term FeV price;
- Increased footprint reduces Group overhead cost structure;
- Improved IP and market presence adds value with long-term off-take agreements;
- Assist and expedites the development of Bushveld's own marketing channel; and
- In a benign vanadium price environment of 2018, Vanchem's 6 months annual financial statements to 31 March 2019 presented net profit amount in excess of ZAR200 million operating at less than 20% of capacity.

This acquisition of Vanchem demonstrates the value in the Company's growth strategy of targeting brownfields processing infrastructure which can be acquired at a lower price compared to the cost of building a greenfield operation, providing a lower risk and a quicker path to production. This has been reflected in Bushveld agreeing and paying an amount far less than the fair value of the assets and liabilities assumed. The Mokopane resource will also enable Bushveld to create a fully integrated vanadium production facility within the Group.

## A. Consideration transferred

The following table summarises the acquisition date fair value of each major class of consideration transferred.

Fair value consideration	US\$
Cash	30,713,500
Deferred Consideration (i)	409,323
Working Capital Adjustment (ii)	1,665,063
Convertible Loan (iii)	23,000,000
<b>Total fair value of consideration</b>	<b>55,787,886</b>

### i. Deferred Consideration

The group has agreed to pay the selling shareholder a deferred payment of US\$0.5 million, payable in cash 2 years post completion of the acquisition.

### ii. Working Capital Adjustment

The working capital adjustment was the difference between the original working capital included in the agreement versus the final balances transferred to Bushveld. The amount is payable in cash after 2 years post completion of the acquisition and disclosed as deferred consideration.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 8. Acquisitions continued

#### 8.1 Acquisition of Bushveld Vanchem Business continued

##### A. Consideration transferred continued

##### iii. Convertible loan

A payment of US\$23.0 million satisfied through the issue of Bushveld Minerals unsecured convertible loan notes ('Loan Notes') with the following repayment, redemption and conversion terms (in addition to customary covenants, warranties and acceleration provisions):

- Interest at a coupon of 5% per annum payable annually in arrears or on conversion or redemption;
- Repayable in cash after the second anniversary of Transaction Closure, plus any accrued interest;
- Convertible at the holder's option in two tranches of up to US\$11.5 million each, after the first and second anniversary of Transaction Closure respectively, at a 5% discount to the prevailing 10-day volume weighted average Bushveld Minerals share price leading up to conversion;
- Early redemption of the Loan Notes at the election of Bushveld Minerals, subject to the condition that the holder will have an option of converting up to 50% of the early redemption amounts into Bushveld Minerals shares on the same terms set out above;
- Scope for acceleration of redemption of up to US\$5 million of the Loan Notes 12 months after Transaction Closure if an average ferrovanadium price of US\$40/kgV is realised during any nine-month period during the 12 month period after Transaction Closure;
- Obligation to repay an amount equal to 40% of any cash received on a new share issue which raises more than US\$30 million, provided no more than 50% of the Loan Notes have already been paid, redeemed or converted;
- Obligation to repay an amount equal to 50% of any debt raised over US\$15 million, provided no more than 50% of the Loan Notes have been repaid, redeemed or converted;
- Obligation to repay on a substantial sale of assets or change of control;
- The holder will not be able to divest any Bushveld Minerals shares received for six months following conversion and be subject to an orderly market arrangement for the following six months.

##### Acquisition related costs

The group incurred acquisition-related costs of US\$1,519,969. These costs have been included in the calculation of the bargain purchase below.

##### B. Identifiable assets and liabilities acquired

The following table summarises the recognised amounts of assets acquired, and liabilities assumed at the date of acquisition:

Assets and liabilities acquired	US\$
Property, plant and equipment	114,668,826
Land and buildings	6,137,787
Inventories	7,480,482
Trade and other receivables	900,154
Cash and cash equivalents	10,492
Environmental rehabilitation liability	(10,382,628)
Trade and other payables	(906,727)
Provisions	(13,899)
<b>Total identifiable net assets acquired at Fair Value</b>	<b>117,894,487</b>

##### Measurement of fair values

An independent valuer was appointed to determine the fair value of the property, plant and equipment. The fair values of other assets and liabilities were estimated by the directors.

### Property, plant and equipment

Marsh (Propriety) Limited was appointed for the valuation.

Marsh has been in the industry in South Africa since 1984. Marsh's global experience coupled with professionals, who maintain the highest certifications and advanced professional accreditations, enable them to deliver accurate and timely valuations.

Marsh adheres to the International Valuation Standards, strict ethical code of conduct and best practice prescribed by the South African Council for the Property Valuers Profession, South African Institute of Valuers, American Society of Appraisers and the Royal Institution of Chartered Surveyors.

The determination of Fair Market Value (FMV) was based on the estimate cost of acquiring and installing a new or similar equivalent to the current asset at hand. Marsh then determined the remaining life of the asset and therefore calculated the difference obtained from the new replacement value similar or to the next model in the market determining the effective age or life span and minus the remaining life. This determines the economic life of the asset which in turn is the condition rating percentage.

The cost of erecting the building, together with the cost of ancillary site works, was estimated. This cost included relevant professional fees and other associated expenses directly related to the construction of the building and ancillary site works but excluded any finance charges. The cost is then depreciated according to physical, functional and economic conditions to give the Depreciated Replacement Cost of the buildings.

The Market Value of the land, as if vacant, has been determined by the comparison of recent sales of similar properties in the area and similar areas. The sum of these values reflect the Depreciated Replacement Value of the property.

Key procedures conducted:

#### Plant, Machinery & Equipment (Movable Assets)

- A Fair Market valuation was performed.
- A physical on-site survey was performed to inspect and value all the assets on a per asset basis.
- Production asset per location was assessed for Useful Lives, Remaining Lives and Condition rating.
- Assets were recorded per location and department.
- Sufficient detail and specifications was collected in order to value the assets according to the Fair Market.

#### Buildings (Fixed Assets)

- A Fair Market valuation was performed.
- Each building was individually assessed for Useful Lives, Remaining Lives and Condition rating.
- Building costs in the area was used to establish a Rate/m<sup>2</sup>.
- Professional fees, escalations, demolition, and debris removal costs were included.
- Land Values for the plant and waste site were included.

#### Valuation Process

The valuation process took place over four core components. These components are designed to ensure the highest degree of valuation accuracy while ensuring limited interruption to the operations of our clients.

An overview of the four main components is as follows:

#### Initial Project Research and Preparation

This phase of the valuation program involved research, information gathering and preparation by Marsh Valuation Services to ensure a preliminary understanding of Bushveld Minerals SA (PTY) LTD operations, locations and accounting principles.

This is a crucial stage in the valuation process ensuring reduced time spent at each location as part of the physical inspection.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 8. Acquisitions continued

#### 8.1 Acquisition of Bushveld Vanchem Business continued

##### B. Identifiable assets and liabilities acquired continued

###### Physical Inspection and Information Gathering

The aim of this step of the process was information gathering and data collection while ensuring minimal impact on the operations. The valuation process, whilst on site, was generally undertaken via the following process:

###### Research, Analysis and Reporting

This phase of the valuation process involves utilising the information gained during the inspection process, our internal databases of information, external sources of data, recent and planned capital expenditure details, information from suppliers and international research to undertake the valuation calculations. The analysis and calculations were then extrapolated and input into a detailed valuation report.

###### Delivery and Findings

After the valuation research and reporting was completed, a valuation report was provided including the list of assets identified as well as the fair market values of those assets with remaining useful lives.

##### C. Accounting for the acquisition

The acquisition has been accounted for as follows:

Vanchem Acquisition	US\$
Property, plant and equipment	114,668,826
Residential properties	6,137,787
Inventories	7,480,482
Trade and other receivables	900,154
Cash and cash equivalents	10,492
Environmental rehabilitation liability	(10,382,628)
Trade and other payables	(906,727)
Provisions	(13,899)
<b>Total identifiable net assets acquired at Fair Value</b>	<b>117,894,487</b>
Fair Value of Consideration	(55,787,885)
Acquisition related costs	(1,519,969)
<b>Gain on Bargain Purchase</b>	<b>60,586,633</b>

IFRS 3 requires an acquirer to measure the cost of the acquisition at the fair value of the consideration paid, and measure acquired identifiable assets and liabilities at their fair values, with any excess of acquired assets and liabilities over the consideration paid (a 'bargain purchase') recognised in profit or loss immediately. The group engaged an independent valuation expert to value the assets acquired using the cost approach, which we consider to be the most appropriate fair value measurement technique given the nature of the assets acquired and the circumstances of the acquisition.

Where a business combination results in a bargain purchase, IFRS 3 requires the acquirer to reassess whether it has correctly identified all of the assets and liabilities acquired and to review the procedures used to measure the fair values recognised at the acquisition date. We have completed this assessment and concluded that the recognition of a bargain purchase is appropriate. In coming to this conclusion we have considered the circumstances of the sale as Vanchem was in business rescue and therefore not an open market transaction, and the advantages of Vanchem which fit into the Group's diversity and growth strategy, advantages of which are disclosed above.

## 8.2 Acquisition of Sojitz interest in Strategic Minerals Corporation

On 13 September 2018, the group completed the acquisition of a 21.22 per cent interest in Strategic Minerals Corporation, an intermediate holding company of Vametco Alloys Proprietary Limited, from Sojitz Noble Alloys Corporation for a total cash consideration of US\$17,500,000 ('the transaction'). On completion of the transaction, the Bushveld group increased its indirect beneficial interest in Vametco Alloys Proprietary Limited from 59.1 per cent to 75 per cent.

### Transaction summary

The group acquired all of Sojitz Noble Alloys Corporation's shareholding interest and accompanying rights in Strategic Minerals Corporation, the 75 per cent owner of Vametco Alloys Proprietary Limited, for a total consideration of US\$20,000,000 (twenty million US dollars).

The US\$20,000,000 consideration payable comprised:

- US\$17,500,000 in cash (seventeen million five hundred thousand US dollars) for the sale shares; and
- US\$2,500,000 in cash (two million five hundred thousand US dollars) in full and final settlement of accrued but unpaid dividends on the sale shares.

The Sojitz Noble Alloys Corporation shareholding in Strategic Minerals Corporation was acquired free from all claims, liens, equities, charges, encumbrances and adverse rights of any description, and together with all rights attaching thereto, accrued or contingent.

Following completion of the transaction Bushveld, through wholly owned Bushveld Vametco Limited, owned 100 per cent of Strategic Minerals Corporation and therefore had an indirect beneficial interest of 75 per cent in Vametco Alloys Proprietary Limited (subsequently reduced to 74 per cent).

The group used existing cash resources to complete the transaction.

## 9. Finance income

	2019 US\$	2018 US\$
Bank interest	<b>3,593,142</b>	1,987,333

## 10. Finance costs

	2019 US\$	2018 US\$
Interest on convertible bonds	–	522,079
Interest on unsecured convertible loan notes	<b>173,288</b>	–
Other finance costs	<b>1,032,655</b>	711,327
Interest on lease liabilities	<b>463,513</b>	–
	<b>1,669,456</b>	1,233,406



## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

### 11. Taxation

The tax expense represents the sum of the tax currently payable and the deferred tax adjustment for the year.

	2019 US\$	2018 US\$
Profit before tax	83,253,558	86,605,066
Loss before taxation multiplied by Guernsey corporation tax rate of 0%	–	–
South African tax – current tax	13,033,205	32,218,043
South African tax – deferred tax	267,538	386,864
USA – deferred tax	2,665,603	–
USA – current tax	(1,960,381)	5,000,000
<b>Taxation expense for the year</b>	<b>14,005,965</b>	<b>37,604,907</b>

Management believe that any unrecognised deferred tax assets relating to the accumulated losses in the subsidiary undertakings of the group, would be immaterial to these financial statements.

USA – current tax charge comprises irrecoverable withholding tax of US\$3,039,619 on dividends received and the reversal of a tax liability pertaining to the conversion of a subsidiary from a corporation into a limited liability company in the USA, which resulted in an upfront prepayment of US\$5,000,000 being payable to Internal Revenue Service (IRS) in 2018. In 2019 this amount was subsequently refunded once the final tax calculation was completed. Due to the conversion all tax credits including deferred tax assets recognised previously would be neutralised.

### 12. Earnings per share from continuing operations

#### Basic earnings per share

The calculation of a basic earnings per share of 5.51 cents (December 2018: 2.9 cents), is calculated using the total profit for the year attributable to the owners of the company of US\$61,968,301 (December 2018: Profit of US\$30,215,509) and 1,125,562,148 shares (2018:1,043,907,922) being the weighted average number of share in issue during the year.

#### Diluted earnings per share

The calculation of diluted earnings per share of 5.45 cents (December 2018: 2.9 cents), is based on diluted earnings of US\$62,141,589 (2018:US\$30,215,509) and 1,139,216,582 shares (2018:1,043,907,922) being the diluted weighted average number of share in issue during the year.

### 13. Intangible assets – exploration and evaluation

	2019			2018		
	Cost US\$	Accumulated impairment US\$	Carrying value US\$	Cost US\$	Accumulated impairment US\$	Carrying value US\$
Vanadium and Iron ore	56,827,085	–	56,827,085	55,639,067	–	55,639,067
Coal	2,581,736	–	2,581,736	1,511,358	–	1,511,358
<b>Total</b>	<b>59,408,821</b>	<b>–</b>	<b>59,408,821</b>	<b>57,150,425</b>	<b>–</b>	<b>57,150,425</b>

#### Reconciliation of intangible assets – exploration and evaluation – 2019

	Opening balance US\$	Additions US\$	Exchange differences US\$	Total US\$
Vanadium and Iron ore	55,639,067	198,319	989,699	56,827,085
Coal	1,511,358	1,070,378	–	2,581,736
	57,150,425	1,268,697	989,699	59,408,821

## Reconciliation of intangible assets – exploration and evaluation – 2018

	Opening balance US\$	Additions US\$	Exchange differences US\$	Total US\$
Vanadium and Iron ore	60,862,691	41,861	(5,265,485)	55,639,067
Coal	–	1,511,358	–	1,511,358
	60,862,691	1,553,219	(5,265,485)	57,150,425

### Vanadium and Iron Ore

The Company's subsidiary, Bushveld Resources Limited has a 64% interest in Pamish Investment No 39 (Proprietary) Limited ('Pamish') which holds an interest in Prospecting right 95 ('Pamish 39'). Bushveld Resources Limited also has a 68.5% interest in Amaraka Investment No 85 (Proprietary) Limited ('Amaraka') which holds an interest in Prospecting right 438 ('Amaraka 85').

The Department of Mineral Resources and Energy ('DMRE') granted a mining right to Pamish Investments No. 39 (Pty) Ltd ('Pamish'), in respect of the five farms Vliegekraal 783 LR, Vogelstruisfontein 765 LR, Vriesland 781 LR, Schoonoord 786 LR and Bellevue 808 LR situated in the District of Mogalakwena, Limpopo, which make up the Mokopane Project.

Mokopane is one of the world's largest primary vanadium resources, with a 298 Mt JORC compliant resource and a weighted average  $V_2O_5$  grade of 1.75 per cent in magnetite (1.41 per cent in-situ). The Mokopane deposit is a layered orebody along a 5.5 km north-south strike at a dip of between 18 degrees and 22 degrees west. The project comprises three adjacent and parallel magnetite layers namely the Main Magnetite Layer ('MML'), the MML Hanging Wall ('MML-HW') layer and the AB Zone. 298 Mt (JORC) resources and reserves run across three parallel overlying magnetite layers with grades ranging from 1.6 per cent to over 2 per cent  $V_2O_5$  as follows:

- MML: 52 Mt @ 1.48 per cent  $V_2O_5$  (1.75 per cent  $V_2O_5$  in magnetite);
- MML-HW & Parting: 233 Mt @ 0.8 per cent  $V_2O_5$  (1.5-1.6 per cent  $V_2O_5$  in magnetite); and
- AB Zone: 12 Mt @ 0.7 per cent  $V_2O_5$  (greater than 2 per cent  $V_2O_5$  in magnetite).

The mining right allows for the extraction of several other minerals over the entire Mokopane project resource area, including, titanium, phosphate, platinum group metals, gold, cobalt, copper, nickel and chrome.

### Brits Vanadium Project

Bushveld Minerals Limited has been granted Section 11 of the Mineral and Petroleum Resources Development Act (MPRDA) for acquiring control of Sable Platinum Mining Pty Ltd for NW 30/5/1/1/2/11124 PR, held through Great Line 1 Invest (Pty) Ltd. The company has also applied for Section 102 of the Mineral and Petroleum Resources Development Act (MPRDA) and waiting for approval to incorporate NW 30/5/1/1/2/11069 PR into NW 30/5/1/1/2/11124 PR.

Bushveld Minerals Limited has applied for prospecting which has been accepted and environmental authorisation has been granted under GP 30/5/1/1/2/10576 PR held by Gemsbok Magnetite (Pty) Ltd.

### Coal

Coal Exploration licences have been issued to Coal Mining Madagascar SARL a 99% subsidiary of Lemur Investments Limited.

The exploration is in South West Madagascar covering 11 concession blocks in the Imaloto Coal basin known as the Imaloto Coal Project and Extension.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

## 14. Property, plant and equipment

	Buildings and other improvements US\$	Plant and machinery US\$	Motor vehicles furniture and equipment US\$	Decommissioning assets US\$	Right of use asset US\$	Waste stripping asset US\$	Assets under construction US\$	Total US\$
<b>Cost</b>								
At 1 January 2018	610,789	42,147,393	28,670	1,507,013	–	–	934,379	45,228,244
Additions	–	–	–	271,518	–	–	10,934,184	11,205,702
Disposals	–	(1,180,001)	(30,017)	–	–	–	–	(1,210,018)
Assets under construction capitalised	730,388	3,310,376	246,498	–	–	–	(4,287,262)	–
Foreign exchange differences	(82,128)	(1,398,908)	(3,856)	(202,636)	–	–	(125,639)	(1,813,167)
<b>At 31 December 2018</b>	<b>1,259,049</b>	<b>42,878,860</b>	<b>241,295</b>	<b>1,575,895</b>	<b>–</b>	<b>–</b>	<b>7,455,662</b>	<b>53,410,761</b>
Additions	<b>6,714,835</b>	<b>113,453,458</b>	<b>1,371,514</b>	<b>942,121</b>	<b>5,727,902</b>	<b>3,920,684</b>	<b>11,883,121</b>	<b>144,013,635</b>
Disposals	<b>(414,250)</b>	<b>(2,134,666)</b>	<b>(239,102)</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>(2,788,018)</b>
Assets under construction capitalised	<b>268,304</b>	<b>8,992,207</b>	<b>48,833</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>(9,309,344)</b>	<b>–</b>
Foreign exchange differences	<b>368,583</b>	<b>3,179,724</b>	<b>51,571</b>	<b>79,271</b>	<b>7,988</b>	<b>–</b>	<b>639,339</b>	<b>4,326,476</b>
<b>At 31 December 2019</b>	<b>8,196,521</b>	<b>166,369,583</b>	<b>1,474,110</b>	<b>2,597,288</b>	<b>5,735,890</b>	<b>3,920,684</b>	<b>10,668,778</b>	<b>198,962,854</b>
<b>Depreciation</b>								
At 1 January 2018	–	(809,055)	–	–	–	–	–	(809,055)
Depreciation charge for the year	(237,758)	(5,508,585)	(209,890)	(83,106)	–	–	–	(6,039,339)
Disposals	–	1,180,001	30,017	–	–	–	–	1,210,018
Foreign exchange differences	–	108,787	–	–	–	–	–	108,787
<b>At 31 December 2018</b>	<b>(237,758)</b>	<b>(5,028,852)</b>	<b>(179,873)</b>	<b>(83,106)</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>(5,529,589)</b>
Depreciation charge for the year	<b>(1,177,756)</b>	<b>(5,947,944)</b>	<b>(617,794)</b>	<b>(848,939)</b>	<b>(627,475)</b>	<b>(1,168,237)</b>	<b>–</b>	<b>(10,388,145)</b>
Disposals	<b>414,251</b>	<b>1,804,752</b>	<b>234,711</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>2,453,714</b>
Foreign exchange differences	<b>(21,021)</b>	<b>(211,965)</b>	<b>27,246</b>	<b>(22,543)</b>	<b>(1,488)</b>	<b>–</b>	<b>–</b>	<b>(229,771)</b>
<b>At 31 December 2019</b>	<b>(1,022,284)</b>	<b>(9,384,009)</b>	<b>(535,710)</b>	<b>(954,588)</b>	<b>(628,963)</b>	<b>(1,168,237)</b>	<b>–</b>	<b>(13,693,791)</b>
<b>Net Book Value</b>								
<b>At 31 December 2018</b>	<b>1,021,291</b>	<b>37,850,008</b>	<b>61,411</b>	<b>1,492,790</b>	<b>–</b>	<b>–</b>	<b>7,455,662</b>	<b>47,881,162</b>
<b>At 31 December 2019</b>	<b>7,174,237</b>	<b>156,985,574</b>	<b>938,400</b>	<b>1,642,700</b>	<b>5,106,927</b>	<b>2,752,447</b>	<b>10,668,778</b>	<b>185,269,063</b>

## 15. Lease liabilities

The Group has applied IFRS 16 for the first time in the period. IFRS 16 introduces new or amended requirements with respect to lease accounting. It introduces significant changes to lessee accounting by removing the distinction between operating and finance leases and requiring the recognition of a right-of-use asset and a lease liability at the lease commencement for all leases, except for short-term leases and leases of low value assets. This note explains the impact of the adoption of IFRS 16 'Leases' on the Group's consolidated year end report and discloses the new accounting policies that have been applied from 1 January 2019. The Group has adopted IFRS 16 using the modified retrospective approach from 1 January 2019 and has not restated comparatives for the 2018 reporting period, as permitted under the specific transitional provisions in the standard. The reclassifications and adjustments arising from the new leasing rules are therefore recognised in the opening balance sheet on 1 January 2019.

Applying IFRS 16, for all leases (except as noted below), the Group:

- recognises right-of-use assets and lease liabilities in the Statement of Financial Position, initially measured at the present value of future lease payments;
- recognises depreciation of right-of-use assets and interest on lease liabilities in the Income Statement; and
- separates the total amount of cash paid into a principal portion (presented within financing activities) and interest (presented within operating activities) in the Statement of Cash Flows.

Lease incentives (e.g. free rent period) are recognised as part of the measurement of the right-of-use assets and lease liabilities whereas under IAS 17 they resulted in the recognition of a lease incentive liability, amortised as a reduction of rental expense on a straight-line basis. Under IFRS 16, right-of-use assets are tested for impairment in accordance with IAS 36 Impairment of Assets. This replaces the previous requirement to recognise a provision for onerous lease contracts. For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Group has opted to recognise a lease expense on a straight-line basis as permitted by IFRS 16. This expense is presented within net operating expenses in the Income Statement.

The Group assesses whether a contract is or contains a lease, at inception of a contract. The Group recognises a right-of-use asset and a corresponding lease liability with respect to all lease agreements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low value assets. For these leases, the Group recognises the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted by using the rate implicit in the lease. If this rate cannot be readily determined, the Group uses its incremental borrowing rate. The discount rate used ranges between 10% – 11% depending on the nature of the underlying asset.

Lease payments included in the measurement of the lease liability comprise:

- fixed lease payments (including in-substance fixed payments), less any lease incentives;
- variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;
- the amount expected to be payable by the lessee under residual value guarantees;
- the exercise price of purchase options, if the lessee is reasonably certain to exercise the options; and
- payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The lease liability is presented as a separate line in the Statement of Financial Position. The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made.

The Group remeasures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) whenever:

- the lease term has changed or there is a change in the assessment of exercise of a purchase option, in which case the lease liability is remeasured by discounting the revised lease payments using a revised discount rate.
- the lease payments change due to changes in an index or rate or a change in expected payment under a guaranteed residual value, in which cases the lease liability is remeasured by discounting the revised lease payments using the initial discount rate (unless the lease payments change is due to a change in a floating interest rate, in which case a revised discount rate is used).
- a lease contract is modified and the lease modification is not accounted for as a separate lease, in which case the lease liability is remeasured by discounting the revised lease payments using a revised discount rate.

The Group did not make any such adjustments during the periods presented.

The right-of-use assets comprise the initial measurement of the corresponding lease liability, lease payments made at or before the commencement day and any initial direct costs.

They are subsequently measured at cost less accumulated depreciation and impairment losses.

Whenever the Group incurs an obligation for costs to dismantle and remove a leased asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease, a provision is recognised and measured under IAS 37. The costs are included in the related right-of-use asset, unless those costs are incurred to produce inventories.

Right-of-use assets are depreciated over the shorter period of lease term and useful life of the underlying asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the Group expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset. The depreciation starts at the commencement date of the lease. The right-of-use assets are presented as a separate line in the Statement of Financial Position. The Group applies IAS 36 Impairment of Assets to determine whether a right-of-use asset is impaired and accounts for any identified impairment loss.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

### 15. Lease liabilities continued

A reconciliation of total operating lease commitments to the IFRS 16 lease liability at 31 December 2019 is as follows:

	US\$
Operating lease commitments disclosed at 31 December 2018	10,709,178
Less: short-term leases recognised on a straight-line basis as expense	(726,668)
Less: discount effect using incremental borrowing rate	(4,517,601)
<b>Lease liability recognised at 1 January 2019</b>	<b>5,464,909</b>
<b>Of which:</b>	
Non-current lease liabilities	4,677,338
Current lease liabilities	787,571
	<b>5,464,909</b>

In addition to the recognition of right-of-use assets, lease liabilities and adjustments to net operating expenses for operating lease costs and depreciation coupled with adjustments to finance expenses and have been remeasured under the new standard.

### 16. Investment properties

	2019			2018		
	Opening balance US\$	Fair value movements US\$	Closing balance US\$	Opening balance US\$	Fair value movements US\$	Closing balance US\$
Investment properties	2,816,007	89,442	2,905,449	3,303,501	(487,494)	2,816,007

Land and buildings comprise residential housing in Brits and Elandsrand, North West Province.

Investment properties are stated at fair value, which has been determined based on valuations performed by Mr WJ van Aardt, an accredited independent valuer, as at 31 December 2019 and 2018. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The following valuation techniques and key inputs were used in the valuation of the investment properties:

- i. Physical inspection of each property;
- ii. Consultation with estate agencies to discuss current sales market trends; and
- iii. Comparative sales reports for locations where properties are situated were obtained from South Africa.

### 17. Financial assets – investments

Name of company	2019 US\$	2018 US\$
Enerox	420,891	–
Avalon	4,000,000	–
	<b>4,420,891</b>	–



## Avalon

The Company has agreed to support the merger of Avalon Battery Corporation ('Avalon') and redT energy plc ('redT') (the 'Merger') with interim funding of US\$5 million which will give Bushveld the opportunity to acquire a strategic interest in the merged energy storage company.

In July 2019, AIM-quoted energy storage provider redT and Avalon, a North American-based vanadium redox flow battery ('VRFB') manufacturer, announced their plans to merge. The resulting business will be a leading player in the growing energy storage market. Traded on AIM in London, the merged entity will have a global sales footprint, a robust near-term project pipeline, operations in North America, Europe and Asia, market-leading technology, and a strong management team.

Bushveld has agreed to provide a convertible loan of up to US\$5 million to Avalon (the 'Interim Funding'), half of which will be loaned by Avalon to redT, to support the companies through the due diligence process, finalisation of the Merger negotiation and completion of the Fundraising. These funds also allow both companies to continue delivering on their current project pipelines.

The investment is in line with the Company's strategy of building a leading downstream vanadium-based energy storage platform, by:

- Increasing Bushveld's exposure to the massive potential of the stationary energy storage market, for the first time directly with a manufacturer of the VRFB technology;
- Partnering with selective VRFB companies with attractive upside potential, including the establishment of a VRFB Investment Platform; and
- Demonstrating upstream support from the vanadium industry for the development of the VRFB sector and encouraging additional investment into the combined company.

Refer to events after the reporting period Note 36 for details of the conversion.

## Enerox

The investment in Enerox is in line with Bushveld Minerals' strategy of partnering with Vanadium Redox Flow Battery ('VRFB') companies and part of the VRFB Investment Platform ('VIP') Consortium.

The Consortium, which currently includes Bushveld Minerals, has signed an initial sale and purchase agreement ('ISPA'). In terms of the ISPA, the members of the Consortium have acquired, in equal proportions, 24.9 per cent of the issued share capital of Enerox for €150,000 from CellCube Energy Storage Systems Inc (the 'Seller'). In addition to this amount, to date, the Consortium has invested €600,000 in Enerox to fund ongoing working capital. The investment of US\$420,891 represents Bushveld's share of the investment.

The Consortium has been granted exclusivity to complete due diligence. Bushveld Minerals anticipates contributing not more than 50 per cent of the funds to be invested by the Consortium and is considering additional investors to participate as part of the Consortium. The Enerox investment is part of Bushveld Minerals' strategy of partnering with VRFB Original Equipment Manufacturers ('OEMs') that includes supply of vanadium and electrolyte, deployments and investment. The investment strategy is implemented through the VIP, which seeks to make significant minority investments into high potential VRFB OEMs. The VIP allows for the flow of investment into VRFB OEMs and provides investors with access to the rapidly growing energy storage market.

## 18. Deferred tax

	2019 US\$	2018 US\$
Deferred tax assets	<b>173,892</b>	3,004,141
As at 31 December 2019	<b>173,892</b>	3,004,141

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

### 19. Inventories

	2019 US\$	2018 US\$
Finished goods	17,062,028	6,094,274
Work in progress	4,544,303	4,489,189
Raw materials	1,702,062	2,157,296
Consumable stores	11,773,949	4,452,259
<b>Inventories</b>	<b>35,082,342</b>	<b>17,193,018</b>

The amount of write-down of inventories due to net realisable value provision requirement is nil (2018: nil).

### 20. Trade and other receivables

	2019 US\$	2018 US\$
Trade receivables	2,762,448	27,454,540
Other receivables	1,665,345	5,131,645
<b>Total trade and other receivables</b>	<b>4,427,793</b>	<b>32,586,185</b>

Trade receivables are non-interest bearing and are generally on 15-90 day terms. There were no indicators of impairment at the year end. At 31 December 2019 the group had one customer which accounted for approximately 90% of trade receivables (2018: approximately 90%).

The directors consider that the carrying amount of trade and other receivables approximates to their fair value due to their short-term nature. As at the year end, no receivables are past their due date, hence no allowance for doubtful receivables is provided on the basis that expected credit losses are nil.

The total trade and other receivables denominated in South African Rand amount to US\$2,814,561 (December 2018: US\$1,602,806).

### 21. Restricted investments

	2019 US\$	2018 US\$
Rehabilitation trust fund and insurance fund	6,605,465	5,388,953

The group is required by statutory law in South Africa to hold these restricted investments in order to meet decommissioning liabilities on the statement of financial position (see Note 27 for further details).

### 22. Financial assets at fair value

	2019 US\$	2018 US\$
As at 1 January	2,311,272	1,652,265
Fair value movement	(359,045)	659,007
As at 31 December	1,952,227	2,311,272

The Group measures the fair value of the investment in AfriTin Mining Limited using the quoted price in an active market for that instrument. A market is regarded as active if transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

## 23. Cash and cash equivalents

	2019 US\$	2018 US\$
Cash at hand and in bank	<b>34,011,557</b>	42,019,123

Cash and cash equivalents (which are presented as a single class of assets on the face of the Statement of Financial Position) comprise cash at bank and other short-term highly liquid investments with an original maturity of three months or less. The directors consider that the carrying amount of cash and cash equivalents approximates their fair value.

The total cash and cash equivalents denominated in South African Rand amount to US\$17,469,385 (2018: US\$38,304,481).

## 24. Borrowings

	2019 US\$	2018 US\$
Development Bank of Southern Africa	<b>511,522</b>	–
NedBank Term Loan	<b>18,071,342</b>	–
Convertible Loan Notes	<b>23,173,288</b>	–
	<b>41,756,152</b>	–

### Development Bank of Southern Africa – Facility Agreement

Lemur Holdings Limited, a subsidiary undertaking, entered into a US\$1,000,000 facility agreement with the Development Bank of Southern Africa Limited in March 2019. The purpose of the facility is to assist with the costs associated with delivering the key milestones to the power project. The repayment is subject to the successful bankable feasibility study of the project at which point the repayment would be the facility value plus an amount equal to an IRR of 40% capped at 2.5 times which ever is lower. As at 31 December 2019, only US\$511,523 was drawn down.

### Nedbank

Bushveld Minerals Limited secured ZAR375 million (approximately US\$25 million) in debt facilities through its subsidiary Bushveld Vametco Alloys Proprietary Limited ('the Borrower') with Nedbank Limited (acting through its Nedbank Corporate and Investment Banking division), a South African based financial institution, in the form of a ZAR250 million loan and a ZAR125 million revolving credit facility.

Key highlights of the ZAR250 million loan which was drawn in November 2019:

- Five-year amortising loan;
- Interest rate calculated using the three year or six months JIBAR1 as selected by the Company plus a 3.4% margin;
- Interest payments are due semi-annually with first payment due in six months from financial close;
- Principal repayments will be made semi-annually in arrears over four years in eight equal instalments, with first payment due 18 months after financial close.

Key highlights of the ZAR125 million revolving credit facility, which was undrawn for the financial year 2019:

- Three-year term;
- Interest rate calculated using the three year or six months JIBAR1 as selected by the Company plus a 3.6% margin;
- Interest payments are due semi-annually with first payment due in six months from financial close.

The security provided is customary for a secured financing of this nature, including cession of shares in the Borrower, security over the assets of the Borrower, and a parent guarantee.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 24. Borrowings and other financial liabilities continued

#### Financial Covenants undertaken

The Borrower shall ensure that for so long as any amount is outstanding under a Finance Document or any Commitment is in force, in respect of each Measurement Period:

- the Cumulative DSCR exceeds 1.4 times;
- the Interest Cover Ratio exceeds 4 times; and
- the Net Debt to EBITDA Ratio at a Borrower level shall not exceed 2 times.

#### Convertible Loan

As part of the consideration related to the Bushveld Vanchem acquisition, a payment of US\$23.0 million is to be satisfied through the issue of Bushveld Minerals unsecured convertible loan notes ('Loan Notes') with the following repayment, redemption and conversion terms (in addition to customary covenants, warranties and acceleration provisions):

- Interest at a coupon of 5% per annum payable annually in arrears or on conversion or redemption;
- Repayable in cash after the second anniversary of Transaction Closure, plus any accrued interest;
- Convertible at the holder's option in two tranches of up to US\$11.5 million each, after the first and second anniversary of Transaction Closure respectively, at a 5% discount to the prevailing 10-day volume weighted average Bushveld Minerals share price leading up to conversion;
- Early redemption of the Loan Notes at the election of Bushveld Minerals, subject to the condition that the holder will have an option of converting up to 50% of the early redemption amounts into Bushveld Minerals shares on the same terms set out above;
- Scope for acceleration of redemption of up to US\$5 million of the Loan Notes 12 months after Transaction Closure if an average ferrovanadium price of US\$40/kgV is realised during any nine-month period during the 12 month period after Transaction Closure;
- Obligation to repay an amount equal to 40% of any cash received on a new share issue which raises more than US\$30 million, provided no more than 50% of the Loan Notes have already been paid, redeemed or converted;
- Obligation to repay an amount equal to 50% of any debt raised over US\$15 million, provided no more than 50% of the Loan Notes have been repaid, redeemed or converted;
- Obligation to repay on a substantial sale of assets or change of control.

The holder will not be able to divest any Bushveld Minerals shares received for six months following conversion and be subject to an orderly market arrangement for the following six months.

### 25. Trade and other payables

	2019 US\$	2018 US\$
<b>Financial instruments:</b>		
Trade payables	12,651,751	12,140,085
Accruals and other payables	3,069,751	8,063,710
	<b>15,721,502</b>	<b>20,203,795</b>

Trade and other payables principally comprise amounts outstanding for trade purchases and on-going costs. The average credit period taken for trade purchases is 30 days.

The group has financial risk management policies in place to ensure that all payables are paid within the pre-arranged credit terms. No interest has been charged by any suppliers as a result of late payment of invoices during the year.

The directors consider that the carrying amount of trade and other payables approximates to their fair value.

The total trade and other payables denominated in South African Rand amount to US\$12,027,091 (2018: US\$15,793,322).

## 26. Post-retirement medical liability

### Benefit liability

	2019 US\$	2018 US\$
As at 1 January	2,377,737	2,783,456
Actuarial changes arising from changes in financial assumption	(46,412)	(405,719)
<b>Balance at 31 December</b>	<b>2,331,325</b>	<b>2,377,737</b>

The benefit comprises medical aid subsidies provided to qualifying retired employees. Actuarial valuations are made annually, and the most recent valuation was made on 31 December 2019.

The main assumptions in the valuation are:

Discount rate	9.80%
Health care cost inflation	7.30%
Average retirement age	76.9 years

A one percentage point change in the assumed rate of healthcare costs would have the following effect on the present value of the unfunded obligation: Plus 1%: US\$2.5 million; Less 1%: US\$2.2 million.

A one percentage point change in the assumed interest rate would have the following effect on the present value of the unfunded obligation: Plus 1%: US\$0.24 million; Less 1%: US\$0.20 million.

## 27. Environmental rehabilitation liability

	2019 US\$	2018 US\$
Provision for future environmental rehabilitation costs	<b>17,844,066</b>	6,632,607

Provision for future environmental rehabilitation costs are made on a progressive basis. Estimates are based on costs that are regularly reviewed and adjusted as appropriate for new circumstances.

The rehabilitation provision represents the present value of rehabilitation costs relating to the mining and processing operations, which are expected to be incurred up until end of life of mine or plant, which is when the producing mine properties and plant are expected to cease operations. The provisions are based on management's estimates and assumptions based on the current economic environment. Actual rehabilitation costs will ultimately depend upon future market prices for the necessary rehabilitation works and timing of when the mine ceases operation. Furthermore, the timing of rehabilitation is likely to depend on when the mines cease to produce at economically viable rates. This, in turn, will depend upon future vanadium prices, which are inherently uncertain.

The discount rate used in the calculation of the provision as at 31 December 2019 was 10.07% (2018: 9.73%).



## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

## 28. Share capital and share premium

	Shares Number	Share capital US\$	Share premium US\$	Total share capital and premium US\$
<b>At 1 January 2018</b>	875,894,905	11,817,573	69,222,661	81,040,234
Conversion of convertible bonds	32,499,147	413,649	2,991,090	3,404,739
Warrants exercised	33,737,419	429,409	3,710,416	4,139,825
Shares issued	152,749,172	1,944,191	18,080,981	20,025,172
Shares issued to directors and staff	24,847,310	316,257	8,017,103	8,333,360
Share issue expenses	–	–	(1,018,995)	(1,018,995)
<b>At 1 January 2019</b>	<b>1,119,727,953</b>	<b>14,921,079</b>	<b>101,003,256</b>	<b>115,924,335</b>
Shares issued – Yellow Dragon Holdings	33,914,729	436,192	10,063,808	10,500,000
<b>At 31 December 2019</b>	<b>1,153,642,682</b>	<b>15,357,271</b>	<b>111,067,064</b>	<b>126,424,335</b>

The Board may, subject to Guernsey Law, issue shares or grant rights to subscribe for or convert securities into shares. It may issue different classes of shares ranking equally with existing shares. It may convert all or any classes of shares into redeemable shares. The Company may also hold treasury shares in accordance with the law. Dividends may be paid in proportion to the amount paid up on each class of shares.

As at the 31 December 2019 the Company owns 670,000 (2018: 670,000) treasury shares with a nominal value of 1 pence.

### Shares issued

#### Yellow Dragon

As part of the Vametco acquisition terms announced on 30 November 2017, Bushveld Minerals agreed to make further deferred payments to Yellow Dragon as follows:

- Two deferred payments of US\$0.6 million each, payable following publication of the accounts for Vametco Holdings Limited for respectively the years ending 31 December 2018 and 31 December 2019; and
- A final payment to be made on publication of the Vametco Holdings Limited accounts for the year ended 31 December 2020 to be calculated by reference to Vametco Holdings Limited's EBITDA for the 2020 financial year. The payment being calculated on the following basis 4.5 x EBITDA (as shown in the 2020 Accounts) x 5.91 per cent.

The Company paid the first of the two US\$0.6 million payments, following which the two parties agreed on an early settlement for the balance of amounts payable to be settled as follows:

- Full and final settlement of the earn out of US\$13,500,000, being an all-in total payment comprising:
  - A cash component payment totalling US\$3,000,000; and
  - A total of US\$10,500,000 payable in 33,914,729 Bushveld Minerals Limited ordinary shares of 1.0 penny each to be issued at a price of £0.24 (which favourably compared to the 10 day volume weighted average price of £0.235 and the 20 day volume weighted average price of £0.226, as at 22 October 2019).

The shares issued to Yellow Dragon are subject to a 6 month lock-in arrangement and a further 6 month orderly market arrangement which are subject to certain exceptions and may otherwise only be waived with the consent of the Company's brokers.

## Equity Placing

On 26 March 2018, the Company raised approximately US\$20.0 million (before expenses) by way of an oversubscribed placing of 152,749,172 new ordinary shares of 1 penny each at a price of 10.3 pence per share with leading institutional and mining investors. The price was calculated as the 5 day volume weighted average price (as published by Bloomberg) at close of trading Monday 19 March 2018. The Placing shares represented approximately 14.4% of the Company's issued share capital on admission.

The planned use of the net proceeds of the Placing was to:

- Redeem the outstanding Atlas Capital Convertible Bond US\$6.9 million;
- Simplify Bushveld's organisational and corporate structure to improve Bushveld's exposure to the underlying cash flows of its assets US\$9.0 million; and
- Support Bushveld's vanadium expansion programme: Expansion of the vanadium reserves and resources at the Vametco mine and Brits Project for future production and support Vametco's expansion plans to increase production to more than 5,000 mtV and beyond US\$5.6 million.

## Shares issued to directors and staff

During the course of 2018 a benchmarking exercise was conducted in order to address a pay gap matter which resulted in a one-off retrospective compensation by way of shares being issued to employees, directors and advisors. Further to the approval by Shareholders of the Retrospective Compensation Scheme, the Compensation Shares were issued as follows:

Name of recipient	Role	Number of Compensation shares
Fortune Mojapelo	Chief Executive Officer	7,000,000
Anthony Viljoen	Non-Executive Director	7,000,000
Ian Watson	Non-Executive Chairman	3,015,000
Jeremy Friedlander	Non-Executive Director	1,050,000
Bill Chipane	Director of Bushveld Vametco Limited	2,500,000
Senior Employees and Advisor		4,282,310
<b>Total shares</b>		<b>24,847,310</b>

## Nature and purpose of other reserves

### Share premium

The share premium reserve represents the amount subscribed for share capital in excess of nominal value.

### Warrant reserve

The warrant reserve represents proceeds on issue of warrants relating to the equity component (i.e. option to convert the debt into share capital).

### Foreign exchange translation reserve

The translation reserve comprises all foreign currency differences arising from the translation of financial statements of foreign operations.

### Fair value reserve

The fair value reserve comprises the cumulative net change in the fair value of financial assets at fair value through other comprehensive income until the assets are derecognised or impaired.

### Accumulated profit/loss

The accumulated profit/loss reserve represents other net gains and losses and transactions with owners (e.g. dividends) not recognised elsewhere.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

## 29. Provisions

## Reconciliation of provisions – 2019

	Opening balance US\$	Additions US\$	Utilised during the year US\$	Foreign exchange US\$	Total US\$
Leave pay	836,455	387,945	–	(30,770)	1,193,630
Performance bonus	809,085	2,640,764	(1,327,699)	(23,585)	2,098,565
Surface lease	622,616	(622,616)	–	–	–
Other	2,052,809	147,869	(2,057,581)	(2,673)	140,424
	<b>4,320,965</b>	<b>2,553,962</b>	<b>(3,385,280)</b>	<b>(57,028)</b>	<b>3,432,619</b>

## Reconciliation of provisions – 2018

	Opening balance US\$	Additions US\$	Utilised during the year US\$	Foreign exchange US\$	Total US\$
Leave pay	929,525	73,314	–	(166,384)	836,455
Performance bonus	1,293,417	1,841,460	(2,175,591)	(150,201)	809,085
Surface lease	1,148,922	(86,905)	(315,116)	(124,285)	622,616
Other	100,018	2,158,839	(192,524)	(13,524)	2,052,809
	<b>3,471,882</b>	<b>3,986,708</b>	<b>(2,683,231)</b>	<b>(454,394)</b>	<b>4,320,965</b>

## Leave pay and bonus

Leave pay represents employee leave days due multiplied by their cost to the company employment package. The bonus represents the estimated amount due to employees based on their approved bonus scheme.

## Performance bonus

The performance bonus represents an incentive bonus due to senior employees, calculated in terms of an approved scheme based on the company's operating results.

## Surface lease

The provision is based on management's best estimate of the expenditure required to settle the obligation for surface lease rentals to Co-Owners, subsequent to finalisation of the surface lease agreements. As at year end an agreement was reached with Co-Owners which was settled post year end. The settlement amount has been recorded under trade payable as at year end.

## Other

The other provisions represents estimates for group tax, legal and consulting fees to be charged.

### 30. Deferred consideration

	2019 US\$	2018 US\$
Opening balance	17,427,512	11,019,447
Cash payment	(3,600,000)	–
Shares settlement (see Note 28)	(10,500,000)	–
Unwinding of discount	34,434	316,551
Movement in earnout estimate	1,510,572	6,091,514
Consideration for Vanchem acquisition (see Note 8)	2,074,385	–
Foreign exchange	161,916	–
	<b>7,108,819</b>	<b>17,427,512</b>

At the year-end management have updated their estimate of the earnout payable to Evraz on the acquisition of the Vametco Group, which is based on the expected EBITDA for the year ended 31 December 2020, to a maximum of US\$5 million. The remaining balance relates to the consideration attributable to the acquisition of Vanchem.

### 31. Financial instruments

The group is exposed to the risks that arise from its use of financial instruments. This note describes the objectives, policies and processes of the group for managing those risks and the methods used to measure them. Further quantitative information in respect of these risks is presented throughout these financial statements.

#### Capital risk management

The group manages its capital to ensure that entities in the group will be able to continue as going concerns while maximising returns to shareholders. In order to maintain or adjust the capital structure, the group may issue new shares or arrange debt financing. At the reporting date, the group had borrowings of US\$41,756,152 (2018: US\$nil).

The capital structure of the group consists of cash and cash equivalents, equity and borrowings. Equity comprises of issued capital and retained profits.

The group is not subject to any externally imposed capital requirements.

#### Significant accounting policies

Details of the significant accounting policies and methods adopted including the criteria for recognition, the basis of measurement and the bases for recognition of income and expenses for each class of financial asset, financial liability and equity instrument are disclosed in note 3.

#### Principal financial instruments

The principal financial instruments used by the group, from which financial instrument risk arises, are as follows:

- Trade and other receivables;
- Cash at bank;
- Trade and other payables;
- Borrowings;
- Investments.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## For the year ended 31 December 2019

## 31. Financial instruments continued

## Categories of financial instruments

	2019 US\$	2018 US\$
<b>The group holds the following financial assets:</b>		
<b>Loans and receivables</b>		
Trade and other receivables	4,427,793	32,586,186
Restricted investment	6,605,465	5,388,953
Financial assets – Investments	4,420,891	–
Cash and cash equivalents	34,011,557	42,019,123
Financial assets at fair value	1,952,227	2,311,272
<b>Total financial assets</b>	<b>51,417,933</b>	<b>82,305,534</b>
	2019 US\$	2018 US\$
<b>The group holds the following financial liabilities:</b>		
<b>Other financial liabilities</b>		
Trade and other payables	15,721,502	20,203,795
Lease liabilities	5,464,909	–
Deferred consideration	7,108,819	17,427,512
Borrowings	41,756,152	–
<b>Total financial liabilities</b>	<b>70,051,382</b>	<b>37,631,307</b>

## General objectives, policies and processes

The Board has overall responsibility for the determination of the group's risk management objectives and policies. The Board receives reports through which it reviews the effectiveness of the processes put in place and the appropriateness of the objectives and policies it sets.

The overall objective of the Board is to set policies that seek to reduce risk as far as possible without unduly affecting the group's competitiveness and flexibility. Further details regarding these policies are set out below:

## Price risk

The Group's exposure to commodity price risk is dependent on the fluctuating price of the various commodities that it mines, processes and sells.

The average market price of each of the following commodities was:

	2019 US\$/kgV	2018 US\$/kgV
NV	48.87	67.36
MVO	–	110.12
AMV	19.09	–

If the average price of each of these commodities increased/decreased by 10% the total sales related to each of these commodities would have increased/decreased as follows:

	Effect on 2019 revenue US\$	Effect on 2019 net income US\$
NV	11,692,487	8,418,591
AMV	14,391	10,361
	<b>11,706,878</b>	<b>8,428,952</b>



## Credit risk

Credit risk arises principally from the group's cash balances with further risk arising due to its other receivables and available-for-sale investments. Credit risk is the risk that the counterparty fails to repay its obligation to the group in respect of the amounts owed. The group gives careful consideration to which organisations it uses for its banking services in order to minimise credit risk.

It is the group's policy that all suppliers who wish to trade on credit terms are subject to credit verification procedures. Credit risk arises from credit exposure to customers, including outstanding receivables and committed transactions.

Trade account receivables comprise a limited customer base. Ongoing credit evaluation of the financial position of customers is performed and granting of credit is approved by directors.

The group's credit risk is considered by counterparty, geography and by currency. The group has a significant concentration of cash held on deposit with large banks in South Africa, Mauritius and the United Kingdom and America with A ratings and above (Standard and Poors).

The concentration of credit risk by currency was as follows:

Currency	2019 US\$	2018 US\$
Sterling	169,071	1,548,907
South African Rand	17,469,394	10,322,765
United States Dollar	16,373,092	30,147,451
	<b>34,011,557</b>	42,019,123

At 31 December 2019, the group held no collateral as security against any financial asset. The carrying amount of financial assets recorded in the financial statements, net of any allowances for losses, represents the group's maximum exposure to credit risk without taking account of the value of any collateral obtained. At 31 December 2019, no financial assets were past their due date. As a result, there has been no impairment of financial assets during the year. An allowance for impairment is made where there is an identified loss event which, based on previous experience, is evidence of a reduction in the recoverability of the cash flows. Management considers the above measures to be sufficient to control the credit risk exposure.

## Liquidity risk

Liquidity risk is the risk that the group will encounter difficulty in meeting its financial obligations as they fall due. Ultimate responsibility for liquidity risk management rests with the Board of directors. The Board manages liquidity risk by regularly reviewing the group's gearing levels, cash-flow projections and associated headroom and ensuring that excess banking facilities are available for future use.

The group maintains good relationships with its banks, which have high credit ratings and its cash requirements are anticipated via the budgetary process. At 31 December 2019, the group had US\$34,011,557 (2018: US\$42,019,123) of cash reserves and borrowings of US\$41,756,152 (2018: nil). The Group will maintain its ability to service its borrowings over the next 12 months.

## Market risk

The group's activities expose it primarily to the financial risk of changes in foreign currency exchange rates and interest rates.

## Interest rate risk

With the exception of cash and cash equivalents, the group's only interest-bearing assets or liabilities were the borrowings of term debt as well as convertible loan (see note 24), which carry a variable rate based on JIBAR and fixed rate of interest respectively. As the debt was only executed in November 2019, no sensitivity has been performed as the effect would be immaterial for the year.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 31. Financial instruments continued

#### Foreign exchange risk

As highlighted earlier in these financial statements, the functional currency of the group is US Dollars. The group also has foreign currency denominated assets and liabilities. Exposure to exchange rate fluctuations therefore arise. The carrying amount of the group's foreign currency denominated monetary assets and liabilities, all in US Dollars, are shown below:

	2019 US\$	2018 US\$
Cash and cash equivalents	17,638,465	11,871,672
Other receivables	2,170,847	5,383,027
Trade and other payables	(11,563,170)	(9,161,039)
	<b>8,246,142</b>	<b>8,093,660</b>

The group is exposed to a level of foreign currency risk. Due to the minimal level of foreign transactions; the directors currently believe that foreign currency risk is at an acceptable level.

The group does not enter into any derivative financial instruments to manage its exposure to foreign currency risk.

### 32. Contingent liabilities

#### Bank guarantee

As required by the Minerals and Petroleum Resources Act (South Africa), a guarantee amounting to US\$6,461,513 before tax and US\$4,652,290 after tax was issued in favour of the Department of Mineral Resources for the unscheduled closure of the Bushveld Vametco Alloys mine. This guarantee was issued on condition that a portion be deposited in cash with Guard Risk Insurance Company Ltd with restricted use by the Group, as per the below.

#### Restricted cash

The restricted cash disclosed as a current asset consists of US\$3,051,487(2018: US\$2,702,089) paid to Investec Bank Limited and US\$3,553,978 (2018:US\$2,686,864) paid to Guardrisk Insurance Company Ltd, to enable Guard Risk Insurance Company Ltd to issue a guarantee to the Department of Mineral Resources for the mine's environmental rehabilitation obligation. The insurance company deposited this balance in a Money Market account and interest at a rate of 5.5% is earned on the net credit balance. The guarantee is valid for three years, commencing on 1 April 2018 and the funds are only available if the agreement is terminated with a three months' notice period. The contract was renewed on 1 April 2018, it will expire on 31 March 2021.

#### Suretyship

On 22 May 2019, the Company announced that it had agreed to provide a short-term standby working capital support facility to AfriTin for the amount of ZAR 30,000,000 (approximately US\$2.1 million on 22 May 2019). AfriTin has subsequently secured a working capital facility for the amount of NAD 35,000,000 from Nedbank Namibia (the 'Nedbank Facility'), with the support of Bushveld Minerals providing to stand surety for the Nedbank Facility to the value of NAD 30,000,000 (approximately US\$2.0 million).

In the unlikely event of default, Nedbank will first call on the suretyship of the parent company of the AfriTin Group (i.e. AfriTin Mining Limited). In the event that AfriTin Mining Limited cannot meet its obligations under the facility, Nedbank will call upon the Bushveld Minerals suretyship.

The above is less onerous on Bushveld Minerals as it is not a cash collateralised guarantee. In addition, the terms agreed for the Working Capital Facility announced on the 22 May 2019 remain unchanged with respect to Bushveld Minerals. The Company is comfortable with the progress that AfriTin has made towards production at its Namibian flagship project and with the security it retains from AfriTin for the suretyship in the form of a notarial bond over the AfriTin processing plant.

### 33. Capital commitments

	2019 US\$	2018 US\$
Authorised and contracted for	<b>2,449,568</b>	7,599,075
Authorised but not contracted for	<b>608,778</b>	2,258,667
	<b>3,058,346</b>	9,857,742

### 34. Broad based black economic empowerment ownership in the group

On 27 September 2018, the group completed the sale of a 1.0% equity interest in Bushveld Vametco Holdings (Proprietary) Limited equally to its two Broad Based Black Economic Empowerment Shareholders, Business Ventures Investments No. 1833 (Proprietary) Limited and Business Ventures Investments No. 973 (Proprietary) Limited ('BBBEE Shareholders') for a total cash consideration of ZAR1,780,000.

The commitment to conclude the transaction at the agreed consideration was made by the previous Strategic Minerals Corporation owners, prior to Bushveld Minerals Limited's acquisition of Strategic Minerals Corporation, with a view to meeting the Black Economic Empowerment equity requirements as set out in the recently promulgated Mining Charter III. Accordingly, the sale increased Bushveld Vametco Holdings (Proprietary) Limited's Broad Based Black Economic Empowerment shareholding from 25.0% to 26.0%, ensuring Bushveld Vametco Holdings (Proprietary) Limited is fully compliant with the minimum Black Economic Empowerment ownership requirements of the Mining Charter. Bushveld Minerals Limited's shareholding in Bushveld Vametco Holdings (Proprietary) Limited, through its wholly owned subsidiary Strategic Minerals Corporation, accordingly, reduces to 74%.

#### Transaction summary

- Total 1.0% interest acquired to increase total Broad Based Black Economic Empowerment shareholders interest to 26.0% for a total cash consideration of ZAR1,780,000;
- The ZAR1,780,000 consideration was vendor financed provided to Broad Based Black Economic Empowerment shareholders by Bushveld Minerals which has since been repaid; and
- The share based payment charge recognised in the 2018 income statement of US\$3,232,425 represented the difference between the grant date fair value and the 1% interest and the amount receivable for the shares. A charge was recognised in the income statement to recognise the services (BEE credentials) received by the group.

The fair value of the shares were determined by using the estimated fair value of the subsidiary company.

The fair value of the subsidiary company was determined using the following assumptions:

- Future estimated vanadium prices;
- Future estimated exchange rates;
- Future estimated production volumes;
- Discount rate of 12.8%;
- New order mining rights will expire in 2037.

## Financial Statements

# Notes to the Consolidated Financial Statements continued

## *For the year ended 31 December 2019*

### 35. Related parties

#### Relationships

Balances and transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

VM Investments Limited is a related party due to two of the Executive Directors (Fortune Mojapelo and Anthony Viljoen) of Bushveld Minerals Limited being majority shareholders of VM Investments. VM Investments owns the offices rented by Bushveld Minerals Limited. The rent paid in 2019 financial period is US\$176,474 (2018: US\$0).

Services rendered by Ondra LLP for the amount of US\$376,800 is classified as a related party transaction due to a non-executive director (Michael Kirkwood) being a partner at the firm.

The remuneration of key management personnel, being the directors and other executive committee members, is set out below. Further information about the remuneration of individual directors is provided in the Directors' remuneration report.

	2019 US\$	2018 US\$
Salaries and fees	1,772,702	196,557
Short-term incentives	881,934	595,670
Long-term incentives	346,157	–
Share based payments	–	6,058,690
	<b>3,000,793</b>	<b>6,850,917</b>

### 36. Events after the reporting period

#### Financial Assets – investment conversion post year end

On 1 November 2019, Bushveld announced it had agreed to invest in Avalon with funding of US\$5 million through a convertible. In accordance with the terms of the convertible loan, on successful completion of the merger in March 2020, the loan was converted into shares in Invinity. The previously provided US\$5 million loan (together with the accrued interest and commitment fee) has been converted into 302,978,063 Ordinary Shares at a price of 1.65 pence in Invinity, representing up to 8.71 per cent of Invinity. The shares issued to Bushveld are not subject to a lock-in arrangement. In addition to the funding from Bushveld, Invinity has raised £7.9 million through an equity placing at 1.65 pence per share.

Under the agreement, following the completion of the Merger, Bushveld has a right to nominate a director to the Board of Invinity, subject to Bushveld retaining at least 5 per cent of the issued share capital of Invinity. The nomination of a director will be done in due course. Bushveld will retain that right after one year provided it beneficially owns at least 10 per cent of Invinity. In addition, for so long as Bushveld beneficially owns at least 20 per cent of Invinity, it shall have a right to nominate two members of the board of Invinity. The investment is in line with Bushveld's strategy of partnering with VRFB companies and part of the VRFB Investment Platform ('VIP'), as announced on 1 November 2019.

## Covid-19

On 31 December 2019, the World Health Organization (WHO) reported a cluster of pneumonia cases in Wuhan City, China. 'Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2) was confirmed as the causative agent of what we now know as 'Coronavirus Disease 2019' (Covid-19). Since then, the virus has spread to more than 100 countries, including South Africa with a countrywide lockdown implemented on the 24 March 2020.

As a Company we recognised the gravity of the Covid-19 pandemic early and moved quickly to take all necessary measures to create awareness, minimise transmission risks and establish intervention protocols for potential cases. We established a cross-functional Covid-19 Task Team, including operations, health and safety, human resources, finance, community and government relations and other support functions to ensure that the Company is best prepared to navigate this period. To minimise the potential for Covid-19 to spread at our operations, we implemented various preventative measures, including supplying sanitisers, temperature testing, adapting workplaces to foster social distancing, introducing strict procedures at our operations and enabling remote work, where it was practicable to do so. This is being coupled with awareness campaigns to inform and educate employees and the wider community.

As the near-term impact of Covid-19 on operating conditions remains uncertain, we have taken cash preservation measures to manage near-term liquidity, while preserving the long-term sustainability of the assets and still positioning the Company to increase its share of the vanadium market. These include: reviewing operational expenditure, prioritisation of critical and regulatory capital, as well as deferring some growth-associated (non-critical) capital expenditure across the mining, processing and energy businesses. Furthermore, to enhance our liquidity position and financial flexibility, we drew down on the remaining revolving credit facility of ZAR125 million at the end of March 2020. Refer to the CEO's statement for a more detailed response to the pandemic.



## Supplementary Information

# Mineral Resources and Reserves

Mineral Resources are the estimated quantities of material with potential for eventual economic extraction from the Group's properties.

Ore Reserves are a subset of Measured and/or Indicated Mineral Resources that can be demonstrably extracted, economically and legally.

Ore Reserves are declared for open pits inside the Life of Mine pit design (the optimised pit shell in this instance), including diluting materials and allowances for losses which may occur when the material is mined or extracted. They are defined by studies at pre-feasibility or feasibility level, as appropriate, that include the application of modifying factors. Those studies demonstrate that, at the time of reporting, extraction could reasonably be justified (JORC, 2012). Ore Reserves are declared for in-whole rock tonnes in the pits and exclude any stockpiles. Economic assumptions used to estimate reserves change from one period to another as additional technical and operational data is generated.

## Bushveld Minerals: vanadium resource and reserves

The Resources and Reserves estimates are based on the Competent Person's statements prepared by an independent consultancy company, MSA Group, at 31 December 2019.

### Vametco mine

- Ore Reserves were depleted by two per cent after nine months of mining, compared with the previous Ore Reserve estimate at 29 March 2019. Ore Reserves are reported at 31 December 2019 as 274,100 tonnes  $V_2O_5$  in-magnetite at a grade of 2.02  $V_2O_5$  in-magnetite.
- Combined Inferred and Indicated Mineral Resources comprise three seams (the Lower, Intermediate and Upper seams) and are reported after nine months of mining at 31 December 2019 at 185.5 Mt at an average grade of 1.98 per cent  $V_2O_5$  in-magnetite, with an average magnetite content of 35.0 per cent (in-whole rock) for 714,700 tonnes of contained vanadium. The combined Inferred and Indicated Mineral Resource was previously reported on 29 March 2019 as 186.7 Mt at an average grade of 1.98 per cent  $V_2O_5$  in-magnetite, with an average magnetite content of 35.0 per cent (in whole rock) for 719,300 tonnes of contained vanadium.
- Within this resource, the Ore Reserve in the Probable Category comprises three seams (the Lower, Intermediate and Upper seams) and is reported as 47.4 Mt at an average grade of 2.02 per cent  $V_2O_5$  in-magnetite, with an average magnetite content of 28.5 per cent in-whole rock for 153,500 tonnes of vanadium.
- The Lower Seam is the main ore seam and the thickest, ranging from 13.8 to 52 metres, comprising a Probable Reserve of 39.6 Mt at an average grade of 2.05 per cent  $V_2O_5$  in-magnetite, with an average magnetite content of 29.3 per cent in-whole rock for 133,900 tonnes of vanadium.
- The decrease in the 2019 Mineral Resource tonnage by 0.64 per cent compared with the 29 March 2019 estimate is attributed to mining of the seams over nine months. No Mineral Resource Exploration was carried out in the period.
- The decrease in the estimated Ore Reserve tonnage from 48.4 Mt on 29 March 2019 to 47.4 Mt on 31 December 2019 is due to the depletion of the lower and intermediate seams over the nine-month period, based on the pit-to-plant reconciled production data supplied by Vametco.



**Table 1: Vametco Mineral Resource at a cut-off grade of 20% magnetite, as at 31 December 2019 – Gross Basis**

Class	Seam name	Tonnes (Millions)	V <sub>2</sub> O <sub>5</sub> grade of whole rock %	Magnetite grade of whole rock %	V <sub>2</sub> O <sub>5</sub> grade in-magnetite %	Tonnes V <sub>2</sub> O <sub>5</sub> in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Indicated</b>	Upper	5.7	1.44	65.9	1.78	66.3	37.1
	Intermediate	28.2	0.67	32.8	1.91	176.6	98.9
	Lower	108.8	0.72	32.3	2.03	715.7	400.9
	<b>Total</b>	<b>142.7</b>	<b>0.74</b>	<b>33.8</b>	<b>2.00</b>	<b>958.6</b>	<b>537.0</b>
<b>Inferred</b>	Upper	10.4	1.46	63.5	1.75	115.3	64.6
	Intermediate	7.0	0.67	32.1	1.92	43.3	24.3
	Lower	25.4	0.74	31.3	2.00	158.4	88.7
	<b>Total</b>	<b>42.8</b>	<b>0.90</b>	<b>39.2</b>	<b>1.93</b>	<b>317.2</b>	<b>177.6</b>
<b>Indicated and Inferred</b>	Upper	16.0	1.45	64.3	1.76	181.7	101.7
	Intermediate	35.3	0.67	32.7	1.91	220.0	123.2
	Lower	135.2	0.72	32.1	2.03	874.1	489.6
	<b>Total</b>	<b>185.5</b>	<b>0.78</b>	<b>35.0</b>	<b>1.98</b>	<b>1,275.9</b>	<b>714.7</b>

## Notes:

- All tabulated data have been rounded and as a result minor computational errors may occur.
- Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
- Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
- Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
- Due to the magnetite grade being a recovered grade, differences will occur between whole rock V<sub>2</sub>O<sub>5</sub> grades back-calculated from concentrate, versus those derived from whole rock assays.
- Original depletion as at 29 March 2019.
- New depletion as at 31 December 2019.
- Reported on a Gross Basis. Bushveld Minerals shareholding in Vametco Alloys is 74%.

**Table 2: Vametco Mineral Resource at a cut-off grade of 20% magnetite, as at 31 December 2019 – Attributable Basis**

Class	Seam name	Tonnes (Millions)	V <sub>2</sub> O <sub>5</sub> grade of whole rock %	Magnetite grade of whole rock %	V <sub>2</sub> O <sub>5</sub> grade in-magnetite %	Tonnes V <sub>2</sub> O <sub>5</sub> in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Indicated</b>	Upper	4.2	1.44	65.9	1.78	49.0	27.5
	Intermediate	20.9	0.67	32.8	1.91	130.7	73.2
	Lower	80.5	0.72	32.3	2.03	529.6	296.6
	<b>Total</b>	<b>105.6</b>	<b>0.74</b>	<b>33.8</b>	<b>2.00</b>	<b>709.4</b>	<b>397.3</b>
<b>Inferred</b>	Upper	7.7	1.46	63.5	1.75	85.3	47.8
	Intermediate	5.2	0.67	32.1	1.92	32.1	17.9
	Lower	18.8	0.74	31.3	2.00	117.2	65.6
	<b>Total</b>	<b>31.7</b>	<b>0.90</b>	<b>39.2</b>	<b>1.93</b>	<b>234.7</b>	<b>131.4</b>
<b>Indicated and Inferred</b>	Upper	11.9	1.45	64.3	1.76	134.4	75.3
	Intermediate	26.1	0.67	32.7	1.91	162.8	91.1
	Lower	99.3	0.72	32.1	2.03	646.8	362.3
	<b>Total</b>	<b>137.3</b>	<b>0.78</b>	<b>35.0</b>	<b>1.98</b>	<b>944.1</b>	<b>528.8</b>

## Notes:

- All tabulated data have been rounded and as a result minor computational errors may occur.
- Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
- Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
- Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
- Due to the magnetite grade being a recovered grade, differences will occur between whole rock V<sub>2</sub>O<sub>5</sub> grades back-calculated from concentrate, versus those derived from whole rock assays.
- Original depletion as at 29 March 2019.
- New depletion as at 31 December 2019.
- Reported on an Attributable Basis. Bushveld Minerals shareholding in Vametco Alloys is 74%.

## Supplementary Information

# Mineral Resources and Reserves continued

**Table 3:** Vametco Ore Reserves, as at 31 December 2019 – Gross Basis

Class	Seam name	Tonnes (Millions)	V <sub>2</sub> O <sub>5</sub> grade of whole rock %	Magnetite grade of whole rock %	V <sub>2</sub> O <sub>5</sub> grade in-magnetite %	Tonnes V <sub>2</sub> O <sub>5</sub> in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Probable</b>	Upper	1.0	0.58	27.3	1.78	4.60	2.6
	Intermediate	6.8	0.53	23.8	1.87	30.37	17.0
	Lower	39.6	0.63	29.3	2.06	239.09	133.9
	<b>Total</b>	<b>47.4</b>	<b>0.62</b>	<b>28.5</b>	<b>2.02</b>	<b>274.1</b>	<b>153.5</b>

## Notes:

- All tabulated data have been rounded and as a result minor computational errors may occur.
- Ore Reserve tonnes and grades reported on dry ROM (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
- Reporting was prepared on a Mineral Resource model developed by MSA.
- Ore Reserve tonnes depleted as at 31 December 2019.
- Reported on a Gross Basis. Bushveld Minerals shareholding in Vametco Alloys is 74%.
- Ore Reserves estimate depleted using reconciled production data supplied by Vametco from the previous 29 March 2019 Ore Reserves.

**Table 4:** Vametco Ore Reserves, as at 31 December 2019 – Attributable Basis

Class	Seam name	Tonnes (Millions)	V <sub>2</sub> O <sub>5</sub> grade of whole rock %	Magnetite grade of whole rock %	V <sub>2</sub> O <sub>5</sub> grade in-magnetite %	Tonnes V <sub>2</sub> O <sub>5</sub> in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Probable</b>	Upper	0.7	0.58	27.3	1.78	3.4	1.9
	Intermediate	5.0	0.53	23.8	1.87	22.5	12.6
	Lower	29.3	0.63	29.3	2.06	176.9	99.1
	<b>Total</b>	<b>35.1</b>	<b>0.62</b>	<b>28.5</b>	<b>2.02</b>	<b>202.8</b>	<b>113.6</b>

## Notes:

- All tabulated data have been rounded and as a result minor computational errors may occur.
- Ore Reserve tonnes and grades reported on dry ROM (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
- Reporting was prepared on a Mineral Resource model developed by MSA.
- Ore Reserve tonnes depleted as at 31 December 2019.
- Reported on an Attributable Basis. Bushveld Minerals shareholding in Vametco Alloys is 74%.
- Ore Reserves estimate depleted using reconciled production data supplied by Vametco from the previous 29 March 2019 Ore Reserves.

## Brits

The Resources estimates are based on the JORC-compliant maiden Mineral Resource estimate published in July 2019 and the Competent Person's statements prepared by an independent consultancy company, the MSA Group, published in January 2020.

The Mineral Resource is 66.8 Mt (Indicated and Inferred combined) at a weighted  $V_2O_5$  average grade of 1.58 per cent in-magnetite. The maiden Mineral Resource incorporates data from the 2018 drilling campaign, comprising 26 drill holes over a total of 2,967 meters of diamond drilling.

The Mineral Resource was reported in accordance with the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code) and is classified into the Indicated and Inferred Categories in Tables 1 and 2 below on a gross and net attributable basis respectively.

## Key Highlights

- The aggregate Inferred and Indicated Mineral Resource distributed across the three seams (the Lower, Intermediate, and Upper Seams) is reported as 66.8 Mt at an average grade of 1.58 per cent  $V_2O_5$  in-magnetite, at a cut-off grade of 20 per cent magnetite in-whole rock for 175,400 tonnes of contained vanadium.
- The Indicated Mineral Resource tonnages account for 67 per cent of the total combined Mineral Resource and stand at 44.9 Mt with an average grade of 1.59 per cent  $V_2O_5$  in-magnetite for 115,600 tonnes of contained vanadium across the three seams.
- The Lower Seam represents a major portion of the total combined Mineral Resource tonnages at the cut-off grade of 20 per cent, with 55.5 Mt at an average grade of 1.58 per cent  $V_2O_5$  in-magnetite for 137,000 tonnes of contained vanadium. This represents approximately 83 per cent of the total combined tonnage of the maiden Mineral Resource.
- Within the combined Mineral Resource, the Intermediate Seam has the highest grade of the three seams at 1.76 per cent  $V_2O_5$  in-magnetite, although the tonnages are low at the current cut-off grade of 20 per cent magnetite in-whole rock.
- A geological trend of decreasing grade in vanadium for magnetite-rich layers from west to east in the Bushveld Complex accounts for the lower grades on the Brits Project in comparison to the grades at the operating Vametco Mine.
- The Mineral Resource is reported up to a depth of 150 meters below surface and is based on the drilling on the western and central blocks of the farm Uitvalgrond Portion 3 which extends over a strike length of approximately 1.65 kilometres to the most eastern fault where the last line of drilling was completed. There is potential to increase the resource on the remaining eastern unexplored portion of the farm on a strike length of 1 kilometre.

**Table 5: Brits Vanadium Mineral Resource at a cut-off grade of 20% magnetite, as at 18 June 2019 – Gross Basis**

Class	Seam name	Tonnes (Millions)	$V_2O_5$ grade of whole rock %	Magnetite grade of whole rock %	$V_2O_5$ grade of magnetite %	Tonnes $V_2O_5$ in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Indicated</b>	Upper	2.0	0.66	43.64	1.51	13.4	7.5
	Intermediate	1.9	0.47	21.52	1.75	7.0	3.9
	Lower	41.0	0.56	28.54	1.59	185.9	104.2
	<b>Total</b>	<b>44.9</b>	<b>0.56</b>	<b>28.94</b>	<b>1.59</b>	<b>206.3</b>	<b>115.6</b>
<b>Inferred</b>	Upper	7.1	0.65	43.89	1.50	46.7	26.2
	Intermediate	0.4	0.44	21.13	1.85	1.4	0.8
	Lower	14.5	0.50	26.09	1.55	58.8	32.9
	<b>Total</b>	<b>22.0</b>	<b>0.55</b>	<b>31.78</b>	<b>1.54</b>	<b>106.9</b>	<b>59.9</b>
<b>Indicated and Inferred</b>	Upper	9.2	0.65	43.84	1.50	60.1	33.7
	Intermediate	2.2	0.46	21.46	1.76	8.4	4.7
	Lower	55.5	0.54	27.90	1.58	244.6	137.0
	<b>Total</b>	<b>66.8</b>	<b>0.56</b>	<b>29.87</b>	<b>1.58</b>	<b>313.2</b>	<b>175.4</b>

### Notes:

- 1 All tabulated data have been rounded and as a result minor computational errors may occur.
- 2 Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
- 3 Magnetite grade is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
- 4 Due to the magnetite grade being a recovered grade, differences will occur between whole rock  $V_2O_5$  grades back calculated from concentrate, versus those derived from whole rock assays.
- 5 The Mineral Resource is reported as 100% of the Mineral Resource for the project. Bushveld Minerals shareholding in Brits is 62.5%.
- 6 Bushveld Minerals is the operator of Brits Vanadium Project.

## Supplementary Information

# Mineral Resources and Reserves

## continued

**Table 6:** Brits Vanadium Mineral Resource at a cut-off grade of 20% magnetite, as at 18 June 2019 – Net Attributable Basis

Class	Seam Name	Tonnes (Millions)	V <sub>2</sub> O <sub>5</sub> grade of whole rock %	Magnetite grade of whole rock %	V <sub>2</sub> O <sub>5</sub> grade of magnetite %	Tonnes V <sub>2</sub> O <sub>5</sub> in-magnetite (Thousands)	Tonnes V in-magnetite (Thousands)
<b>Indicated</b>	Upper	1.3	0.66	43.64	1.51	8.4	4.7
	Intermediate	1.2	0.47	21.52	1.75	4.4	2.4
	Lower	25.6	0.56	28.54	1.59	116.2	65.1
	<b>Total</b>	<b>28.0</b>	<b>0.56</b>	<b>28.94</b>	<b>1.59</b>	<b>129.0</b>	<b>72.2</b>
<b>Inferred</b>	Upper	4.4	0.65	43.89	1.50	29.2	16.3
	Intermediate	0.2	0.44	21.13	1.85	0.9	0.5
	Lower	9.1	0.50	26.09	1.55	36.7	20.6
	<b>Total</b>	<b>13.7</b>	<b>0.55</b>	<b>31.78</b>	<b>1.54</b>	<b>66.8</b>	<b>37.4</b>
<b>Indicated and Inferred</b>	Upper	5.7	0.65	43.84	1.50	37.6	21.0
	Intermediate	1.4	0.46	21.46	1.76	5.2	2.9
	Lower	34.7	0.54	27.90	1.58	152.9	85.6
	<b>Total</b>	<b>41.8</b>	<b>0.56</b>	<b>29.87</b>	<b>1.58</b>	<b>195.8</b>	<b>109.7</b>

## Notes:

- All tabulated data have been rounded and as a result minor computational errors may occur.
- Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
- Magnetite grade is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
- Due to the magnetite grade being a recovered grade, differences will occur between whole rock V<sub>2</sub>O<sub>5</sub> grades back calculated from concentrate, versus those derived from whole rock assays.
- Bushveld Minerals shareholding in Brits is 62.5%.
- Bushveld Minerals is the operator of Brits Vanadium Project.

## Mokopane Resources and Reserves

The Mokopane Project has a 298 Mt JORC-compliant Resource, including 28.5 Mt Reserves and a weighted average V<sub>2</sub>O<sub>5</sub> grade of 1.41 per cent in-whole rock and 1.75 per cent in-magnetite.

**Table 7:** MML and MML HW Mineral Resources at a 0.30 per cent V<sub>2</sub>O<sub>5</sub> cut-off, ≤120 m depth, as at 15 October 2017

Layer name	Mineral resource category	Width (m)	Tonnes (Mt)	Density (t/m)	V <sub>2</sub> O <sub>5</sub> (%)	Fe (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	TiO <sub>2</sub> (%)	SiO <sub>2</sub> * (%)	Al <sub>2</sub> O <sub>3</sub> * (%)	P <sub>2</sub> O <sub>5</sub> * (%)	S* (%)	V <sub>2</sub> O <sub>5</sub> (kt)	Fe (Mt)
UG-C	Inferred	4.04	31.8	3.48	0.64	25.7	36.7	5.9	30.2	15.4	0.01	0.12	202.8	8.2
UG-A	Inferred	1.64	12.7	3.31	0.59	23.2	33.1	5.3	32.5	17.5	0.01	0.01	75.6	3.0
UMG1	Inferred	3.24	25.5	3.30	0.59	22.9	32.7	5.4	32.6	17.6	0.01	0.01	150.4	5.8
UMG2	Inferred	2.03	15.7	3.40	0.69	25.9	37.0	6.2	29.4	16.7	0.01	0.01	107.7	4.1
MAG1 HW GAB**	Inferred	17.53	72.3	3.02	0.31	13.1	18.8	2.9	42.0	21.9	0.01	0.12	223.3	9.5
MAG1	Inferred	1.31	12.0	3.96	1.07	40.0	57.1	9.7	15.6	10.8	0.01	0.06	128.7	4.8
MAG2	Inferred	1.10	9.2	3.57	0.83	30.2	43.1	7.2	25.1	15.1	0.01	0.06	76.3	2.8
MML HW	Inferred	5.89	42.3	3.01	0.32	13.4	19.2	2.5	42.2	21.6	0.02	0.11	136.0	5.7
Total	Inferred	36.77	221.5	3.21	0.50	19.8	28.3	4.4	35.7	18.9	0.01	0.08	1,100.8	43.8
MAG3	Indicated	4.09	27.5	4.08	1.50	45.5	65.1	10.0	10.6	7.8	0.01	0.12	412.5	12.5
PART	Indicated	2.16	11.4	3.16	0.58	20.9	29.9	3.5	34.5	19.0	0.01	0.17	66.3	2.4
MAG4	Indicated	3.59	24.3	4.00	1.46	43.9	62.7	9.3	11.8	8.9	0.01	0.24	354.9	10.7
<b>Total</b>	<b>Indicated</b>	<b>9.84</b>	<b>63.2</b>	<b>3.85</b>	<b>1.32</b>	<b>40.4</b>	<b>57.8</b>	<b>8.6</b>	<b>15.4</b>	<b>10.2</b>	<b>0.01</b>	<b>0.18</b>	<b>833.7</b>	<b>25.6</b>
<b>Total Mineral Resources</b>		<b>46.61</b>	<b>284.8</b>	<b>3.33</b>	<b>0.68</b>	<b>24.4</b>	<b>34.8</b>	<b>5.4</b>	<b>31.2</b>	<b>17.0</b>	<b>0.01</b>	<b>0.10</b>	<b>1,934.5</b>	<b>69.4</b>

\* Included for information purposes only, no value will be derived from these materials.

\*\* A 0.30 per cent V<sub>2</sub>O<sub>5</sub> cut-off has been applied laterally across this layer, so only material greater than 0.30 per cent V<sub>2</sub>O<sub>5</sub> is included in the tonnage listed in this table.



**Table 8:** MML Probable Ore Reserves as at 19 January 2016

Orebody	True thickness (m)	SG (t/m <sup>3</sup> )	Tonnes (million)	V <sub>2</sub> O <sub>5</sub> (%)
MML Upper, MAG 3	4.09	4.08	15.3	1.425
MML Lower, MAG 4	3.59	4.00	13.2	1.387
<b>Total/Average</b>	<b>7.68</b>	<b>4.04</b>	<b>28.5</b>	<b>1.41</b>

**Table 9:** AB Zone Mineral Resource at 0.3 per cent V<sub>2</sub>O<sub>5</sub> cut-off, ≤120 m vertical depth, as at 15 October 2017

Layer	Category	Tonnes (millions)	Thickness <sup>1</sup> (metres)	Density t/m <sup>3</sup>	V <sub>2</sub> O <sub>5</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	MgO %	CaO %	Cu ppm
Upper AB	Inferred	2.7	1.93	3.29	0.89	34.7	5.41	0.01	30.3	17.1	1.05	6.54	466
AB Parting	Inferred	3.7	2.86	3.07	0.48	20.9	2.98	0.01	40.0	19.7	1.93	9.29	47
Lower AB	Inferred	6.0	4.51	3.21	0.75	29.1	4.32	0.01	34.6	18.6	1.29	7.52	33
<b>Total</b>	<b>Inferred</b>	<b>12.5</b>	<b>9.30</b>	<b>3.18</b>	<b>0.70</b>	<b>27.9</b>	<b>4.16</b>	<b>0.01</b>	<b>35.3</b>	<b>18.6</b>	<b>1.43</b>	<b>7.83</b>	<b>132</b>

Note:

1 Refers to stratigraphic thickness.

## PQ Iron & Titanium Project Resources and Reserves

The PQ Iron and Titanium Project has a total Mineral Resources of 955 Mt at an average grade of 33.7 per cent Fe and 10.8 per cent TiO<sub>2</sub> as shown in the tables below. The Resources and Reserves estimates are based on the Competent Person's Report prepared by MSA Group at 15 October 2017.

**Table 10:** N-Q Zone (Weathered+Unweathered) Indicated Mineral Resource less than 200 meters depth, as at 8 Mar 2013

Layer	Million tonnes	SG (g/cm <sup>3</sup> )	Fe (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	Fe Metal Millions tonnes	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	P <sub>2</sub> O <sub>5</sub> (%)	S (%)
Q3	138.63	3.61	31.7	45.5	43.99	10.2	0.13	25.2	9.9	0.06	0.40
Q2	81.17	4.01	41.9	59.1	34	15.2	0.28	12.6	6.5	0.02	0.27
Q1	26.36	3.59	32.5	45.6	8.58	10.5	0.28	22.3	9.9	0.02	0.27
PMAG	34.44	3.62	32.4	45.4	11.15	10.1	0.29	21.3	10.5	0.03	0.80
PFWDISS*	67.28	3.38	26.9	38.5	18.13	7.1	0.22	30.1	12.8	0.03	0.33
OMAG*	2.63	4.00	37.2	53.2	0.98	11.1	0.49	18.5	7.9	1.01	0.12
NMAG	4.58	4.41	48.7	69.6	2.23	16.0	0.56	6.9	5.3	0.03	0.11
<b>Total</b>	<b>355.09</b>	<b>3.67</b>	<b>33.51</b>	<b>47.65</b>	<b>119.06</b>	<b>10.85</b>	<b>0.22</b>	<b>22.37</b>	<b>9.66</b>	<b>0.05</b>	<b>0.38</b>

\* Layer reported at a 35 per cent Fe<sub>2</sub>O<sub>3</sub> cut-off; no geological losses applied.**Table 11:** N-Q Zone (Unweathered) Inferred Mineral Resource, 200 meters to 400 meters depth, as at 8 Mar 2013

Layer	Million tonnes	SG (g/cm <sup>3</sup> )	Fe (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	Fe Metal Millions tonnes	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	P <sub>2</sub> O <sub>5</sub> (%)	S (%)
Q3	139.03	3.59	30.2	43.3	42.05	8.80	0.09	28.3	10.3	0.13	0.61
Q2	92.64	3.99	40.2	57.5	37.27	14.10	0.23	15.3	7.6	0.02	0.55
Q1	23.42	3.64	32.7	46.8	7.66	10.80	0.27	22.2	10.6	0.02	0.36
PMAG	38.28	3.58	30.6	43.7	11.70	9.80	0.26	23.5	11.5	0.04	0.74
PFWDISS*	76.51	3.37	26.8	38.3	20.49	6.90	0.21	30.2	12.8	0.03	0.43
OMAG*	1.87	3.77	32.4	46.3	0.61	9.5	0.4	23.1	10.4	0.02	0.10
NMAG	7.22	4.32	46.3	66.2	3.34	15.6	0.49	8.3	5.8	0.02	0.14
<b>Total</b>	<b>378.97</b>	<b>3.66</b>	<b>32.47</b>	<b>46.47</b>	<b>123.12</b>	<b>10.07</b>	<b>0.19</b>	<b>24.24</b>	<b>10.20</b>	<b>0.06</b>	<b>0.55</b>

\* Layer reported at a 35 per cent Fe<sub>2</sub>O<sub>3</sub> cut-off; no geological losses applied.

## Supplementary Information

# Mineral Resources and Reserves

## continued

**Table 12:** P-Q Zone Inferred Mineral Resource, less than 300 meters vertical depth at a 35 per cent Fe<sub>2</sub>O<sub>3</sub> cut-off for the farms Schoonoord 786LR and Bellevue 808LR, as at 28 February 2014

Layer name	Tonnes million	Density t/m <sup>3</sup>	Fe %	Fe <sub>2</sub> O <sub>3</sub> %	Fe Metal Millions tonnes	TiO <sub>2</sub> %	V <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P <sub>2</sub> O <sub>5</sub> %	S %
Q3	75.3	3.77	34.3	49.1	25.82	10.5	0.10	23.0	9.4	0.28	0.55
Q2	85.5	4.14	42.6	60.9	36.40	14.9	0.26	13.1	6.9	0.03	0.50
Q1	13.1	3.82	36.4	52.1	4.76	12.2	0.30	19.1	9.8	0.03	0.46
PMAG	19.7	3.52	27.6	39.5	5.45	8.3	0.23	29.1	12.4	0.06	1.00
PFWDISS*	27.3	3.45	27.8	39.8	7.60	8.0	0.22	28.3	12.9	0.06	0.55
<b>Total<sup>1</sup></b>	<b>220.8</b>	<b>3.85</b>	<b>36.2</b>	<b>51.9</b>	<b>80.03</b>	<b>11.8</b>	<b>0.2</b>	<b>20.1</b>	<b>9.2</b>	<b>0.12</b>	<b>0.57</b>

Notes:

1 Total = All tabulated data has been rounded and as a result minor computational errors may occur.

\* Layer reported at a 35 per cent Fe<sub>2</sub>O<sub>3</sub> cut-off; no geological losses applied.

### The PQ Phosphate Project Mineral Resources

The PQ Phosphate Project has Inferred Mineral Resources of 442 Mt at 3.6 per cent P<sub>2</sub>O<sub>5</sub> as shown in the table below. Figures are based on the Competent Person's report prepared by MSA Group as at 15 October 2017.

**Table 13:** Summary of the Phosphate Zone Resource at a three per cent P<sub>2</sub>O<sub>5</sub> cut-off for the farms Vliegekraal 783LR, Malokong 784LR, Schoonoord 786LR and Bellevue 808LR, at 12 April 2014.

Farm	Tonnes millions	P <sub>2</sub> O <sub>5</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	S %	SiO <sub>2</sub> %	CaO %	Density g/cm <sup>3</sup>
Vliegekraal	330.0	3.6	32.1	0.39	34.0	9.1	3.30
Malokong	1.8	3.2	35.5	0.37	35.4	8.6	3.27
Schoonoord	104.9	3.6	34.1	0.40	33.0	8.8	3.37
Bellevue	5.0	3.6	34.4	0.42	33.3	8.9	3.36
<b>Total<sup>1</sup></b>	<b>441.6</b>	<b>3.6</b>	<b>32.6</b>	<b>0.39</b>	<b>33.7</b>	<b>9.0</b>	<b>3.32</b>

Note:

1 All tabulated data has been rounded and as a result minor computational errors may occur.

### Lemur Holdings Limited

The Resources estimates are based on the competent person's report prepared by Sumsare Consulting Group CC as at 30 November 2017.

**Table 14:** Resource for the Imaloto Coal Project

Category	Gross			Net attributable (99%)			Operator
	Raw Coal Quality (ADB)			Raw Coal quality (ADB)			
	Tonnes (Mt)	Ash (%)	CV (MJ/Kg)	Tonnes (Mt)	Ash (%)	CV (MJ/Kg)	
Measured	91.613	32.5	19.62	90.697	32.5	19.62	Lemur Holdings Limited
Indicated	31.497	35.7	18.14	31.182	35.7	18.14	
Inferred	12.627	34.4	18.80	12.501	34.4	18.80	
Sub total	135.737	33.4	19.20	134.380	33.4	19.20	
<b>Total</b>	<b>135.737</b>	<b>33.4</b>	<b>19.20</b>	<b>134.380</b>	<b>33.4</b>	<b>19.20</b>	

# Acronyms

<b>AET</b>	Adult Education and Training	<b>Vametco</b>	Vametco mine & processing plant
<b>AMV</b>	Ammonium Meta Vanadate	<b>VCN</b>	Vanadium Carbon Nitride
<b>AGM</b>	Annual General Meeting	<b>V<sub>2</sub>O<sub>5</sub></b>	Vanadium Pentoxide
<b>Avalon</b>	Avalon Battery Corporation	<b>V<sub>2</sub>O<sub>3</sub></b>	Vanadium Trioxide
<b>Brits</b>	Brits Vanadium Project	<b>VRFB</b>	Vanadium Redox Flow Battery
<b>BV</b>	Bureau Veritas	<b>VIP</b>	VRFB Investment Platform
<b>CAGR</b>	Compound Annual Growth Rate	<b>Vanchem</b>	Vanchem Vanadium Plant
<b>QCA Code</b>	Quoted Companies Alliance Corporate Governance Code		
<b>DFS</b>	Definitive feasibility study		
<b>ELIDZ</b>	East London Industrial Development Zone		
<b>ESOP</b>	Employee Share Ownership Participation		
<b>Enerox</b>	Enerox GmbH		
<b>EIA</b>	Environmental Impact Assessment		
<b>EPC</b>	Engineering, Procurement and Construction		
<b>FeNb</b>	Ferroniobium		
<b>FeV</b>	Ferrovandium		
<b>GW</b>	Gigawatt		
<b>GWh</b>	Gigawatt hour		
<b>IDC</b>	Industrial Development Corporation		
<b>IRP</b>	Integrated Resource Plan		
<b>IWUL</b>	Integrated Water Use Licence		
<b>Invinity</b>	Invinity Energy Systems plc		
<b>JSE</b>	Johannesburg Stock Exchange		
<b>JORC</b>	Joint Ore Reserves Committee		
<b>MML</b>	Main Magnetite Layer		
<b>MML-HW</b>	Main Magnetite Layer Hanging Wall		
<b>mtV</b>	Metric ton of Vanadium		
<b>mtVp.a.</b>	Metric ton of Vanadium per annum		
<b>MW</b>	Megawatt		
<b>MWh</b>	Megawatt hour		
<b>Mt</b>	Millions of tonnes		
<b>kt</b>	Thousands of tonnes		
<b>MVO</b>	Modified vanadium oxide		
<b>Mokopane</b>	Mokopane Vanadium Project		
<b>OEM</b>	Original Equipment Manufacturer		
<b>P<sub>2</sub>O<sub>5</sub></b>	Phosphate		
<b>QMS</b>	Quality Management System		
<b>redT</b>	redT energy plc		
<b>SMMEs</b>	Small, Medium and Micro Enterprises		
<b>TiO<sub>2</sub></b>	Titanium Dioxide		

## Supplementary Information

# Glossary

### Mining terms and acronyms

#### Beneficiation

The process of physically separating ore from waste material prior to subsequent processing of the improved ore.

#### Brownfield

The development or exploration of assets located inside the area of influence of existing mine operations, which can share infrastructure/management.

#### Competent Person's Report

A report on the technical aspects of a project or mine prepared by a Competent Person (CP). The contents are determined by the nature/status of the project/mine being reported and may include a techno-economic model as appropriate for the level of study. A Competent Person must have a minimum of five years' relevant experience in the style of mineralisation or type of deposit under consideration, and in the activity that the person is undertaking (JORC Code, 2012).

#### Crushing

First stage of mineral processing, which involves reducing large rocks or boulders into smaller sizes using equipment such as gyratory crushers, jaw crushers and cone crushers.

#### Greenfield

The development or exploration of assets located outside the area of influence of existing mine operations/infrastructure.

#### Hanging Wall

The area above where the ore is present in a mine.

#### Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

#### Inferred Mineral Resource

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

#### Leaching

The process by which a soluble metal can be economically recovered from minerals in ore by dissolution.

#### Life of Mine

Life of Mine is the time in which the Ore Reserves (or such reasonable extension of the reserves as conservative geological analysis may justify) will be extended, through the employment of the capital available.

#### Magnetic separation

The process of concentrating magnetic ore where the magnetic rock particles are separated from non-magnetic rock particles by using a magnet.

#### Magnetite

A naturally occurring form of iron ore with the formula  $Fe_3O_4$ .

#### Main Magnetite Layer

The vanadium-bearing magnetite layer in the lower portion of the upper zone of the Bushveld Complex, consisting of heavy to disseminated magnetite. It varies in thickness from one to 10 metres.

#### Measured Mineral Resource

A 'Measured Mineral Resource' is that part of a mineral resource for which quantity, grade (or quality), densities, shape and physical characteristics are so well-established that they can be estimated with sufficient confidence to allow the appropriate application of technical and economic parameters to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

#### Milling

The process of breaking down aggregate rock material into even smaller sizes (usually into powder-like form) using equipment such as a ball mill.

#### Mineralisation

A concentration (or occurrence) of material of possible economic interest, in or on the earth's crust, for which quantity and quality cannot be estimated with sufficient confidence to be defined as a Mineral Resource. Mineralisation is not classified as a Mineral Resource or Mineral Reserve and can only be reported under Exploration Results. The data and information relating to it must be sufficient to allow a considered and balanced judgement of its significance.

#### Mineral Deposits

A mass of naturally occurring mineral material, usually of economic interest, without regard to mode of origin.

#### Mineral Reserves

Mineral Reserves are sub-divided into two categories. The proven category is the highest level of reserves or the level with the most confidence. The probable category is the lower level of confidence of the reserves. Reserves are distinguished from Resources as all the technical and economic parameters have been applied and the estimated grade and tonnage of the resources should closely approximate the actual results of mining. The guidelines state: 'Mineral Reserves are inclusive of the diluting material that will be mined in conjunction with the Mineral Reserve and delivered to the treatment plant or equivalent facility.' The guidelines also state that, 'The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative or that all government approvals have been received. It does signify that there are reasonable expectations of such approvals.'

**Mineral Resource**

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

**Mineral Resource/Reserve Depletion**

The process of reconciling the metal balance based on the quantity or amount of the reserve or resource that has been mined out from the original resource/reserve base.

**Modified Vanadium Oxide ('MVO')**

An oxide form of vanadium that is chemically produced by reducing ammonium metavanadate and is used as feed-stock for vanadium final products such as Nitrovan and ferrovandium

**Open Pit Mining**

A method of mining rock or minerals by removing them from an open pit mine situated close to the surface above ground.

**Qualified person**

A professionally qualified member in good standing of an appropriate recognised professional association who has at least five years' relevant experience within the sector. A professional association is a Recognised Professional Organisation ('RPO') of engineers and/or geoscientists.

**Reserve Life**

Current stated Ore Reserves estimate divided by the current approved nominated production rate at the end of the financial year.

**Run-of-Mine**

Product mined in the course of regular mining activities. Tonnes include allowances for diluting materials and for losses that occur when the material is mined.

**Salt-roasting**

Process where a magnetite concentrate is roasted with salts (sodium carbonate and sodium sulphate) in an extremely high temperature rotary kiln with temperatures of up to 1,150°C to form water-soluble solids containing vanadium.

**Strike**

Horizontal direction or trend of a geological structure.

**Other terms****Bankable feasibility study**

A feasibility study is bankable if it has been prepared in detail and with objectivity so that a company could submit it to investors or lenders when seeking financing for the project.

**Definitive feasibility study**

A feasibility study based on the best alternative identified in the preliminary feasibility study, and suitable as a basis for detailed design and construction. The definitive feasibility study is based on indicated and measured mineral resources.

**Pre-feasibility study**

A pre-feasibility study is an early stage analysis of a potential mining project. It is conducted and designed to give company stakeholders the basic information required to choose between potential investments.

**EBITDA**

Earnings before interest, tax, depreciation and amortisation is a measure of a company's operating performance.

**Free cash flow**

Free cash flow represents the net cash generated from operating activities, after taking into consideration capital expenditure.



## Supplementary Information

# Notice of Annual General Meeting

## Bushveld Minerals Limited

(Incorporated in Guernsey under registered number 54506)

### Registered office:

18-20 Le Pollet, St Peter Port  
Guernsey, GY1 1WH

23 June 2020

## THIS DOCUMENT IS IMPORTANT AND REQUIRES YOUR IMMEDIATE ATTENTION

If you are in any doubt as to what action you should take, you are recommended to seek your own financial advice immediately from your stockbroker, bank manager, solicitor, accountant or other independent financial advisor who specialises in advising on shares or other securities and who is, in the case of UK shareholders, authorised under the Financial Services and Market Act 2000.

If you have sold or transferred your shares in Bushveld Minerals Limited, please forward this document at once to the purchaser or transferee or to the stockbroker, bank or other agent through whom the sale or transfer was effected, for delivery to the purchaser or transferee. If you have sold or transferred part of your registered holding of shares, please consult the stockbroker, bank or other agent through whom the sale or transfer was effected.

Notice of an Annual General Meeting of Bushveld Minerals Limited to be held at 11 am on 5 August 2020 at 18-20 Le Pollet, St Peter Port, Guernsey, GY1 1WH.

## PLEASE READ CAREFULLY – ARRANGEMENTS FOR THE ANNUAL GENERAL MEETING IN LIGHT OF COVID-19

The Company is carefully monitoring the Covid-19 situation, including the guidance issued by the States of Guernsey, and will continue to do so in the lead up to the Meeting.

In light of the current States of Guernsey guidance on non-essential travel and the imposition of a 14 day quarantine for travellers, the Board is conscious that shareholders may find it difficult to attend the Meeting in person, and have put in place the following precautions (the "**Covid-19 Precautions**"):

1. At the date of this Notice, restrictions on movement within Guernsey have been lifted, although quarantines remain in place for travellers. It is expected that shareholders in Guernsey, or those who wish to travel to Guernsey for the Meeting subject to quarantine measures, will be able to attend the Meeting as normal. However, the Board recognises that this may not be possible for the majority of shareholders. Accordingly, the Company urges shareholders to vote by proxy and to appoint the chairman of the Meeting as their proxy for that purpose. If a shareholder appoints someone other than the chairman of the Meeting as their proxy, that proxy, if not present in Guernsey, may not be able physically to attend the Meeting or cast the shareholder's vote. All votes on the resolutions contained in this Notice will be held by poll, so that all voting rights exercised by shareholders who are entitled to do so at the Meeting will be counted.
2. The Board encourages all shareholders to exercise their votes by proxy, and to submit any questions in respect of the Meeting in advance. This should ensure that your votes are registered in the event that attendance at the Meeting is not possible. Shareholders are encouraged to use the online voting facilities detailed below where possible rather than submitting a paper proxy card, as in the current circumstances the Board cannot guarantee that there will be staff at the office of the Company's Registrar to receive post.
3. Shareholders who do choose to attend the Meeting in person are asked to comply with the States of Guernsey's guidance on respecting personal space and practising good hand hygiene, and with any distancing requirements requested by the Chairman.
4. The security arrangements proposed by the Board are subject to constant review, and should they be subject to change in line with changing guidance from the States of Guernsey, or in the event that the situation surrounding Covid-19 should affect the plans to hold the Meeting at the proposed date and time or at the proposed address, the Company will update shareholders through a market announcement and will provide further details on the Company's website. The Board reserves the right, should it become necessary, to restrict attendance at the Meeting as part of security arrangements pursuant to Article 73.2 of the Articles of Incorporation of the Company (the "**Articles**").

## ORDINARY RESOLUTIONS

1. To receive and adopt the Annual Financial Statements of the Company and the Directors report and the report of the Auditors for the financial year ended 31 December 2019.
2. To approve the Directors Fees as reflected in Remuneration Report and in Note 35 of the Annual Financial Statements.
3. That Messrs RSM UK Audit LLP be reappointed as Auditors to the Company.
4. That the Directors be authorised to approve the remuneration of the Company's Auditors to the Company.
5. That Fortune Mojapelo shall be re-elected as a Director, having retired by rotation and offered himself for re-election.
6. That Ian Watson shall be re-elected as a Director, having retired by rotation and offered himself for re-election.
7. That Jeremy Friedlander shall be re-elected as a Director, having retired by rotation and offered himself for re-election.
8. That Tanya Chikanza shall be re-elected as a Director in accordance with Article 140 of the Articles, having been appointed by the Directors in October 2019.
9. That Dolly Mokgatle shall be re-elected as a Director in accordance with Article 140 of the Articles, having been appointed by the Directors in March 2020.
10. The Company be generally and unconditionally authorised for the purposes of Articles 50.3 of the Articles to make on market acquisitions (as defined in Article 50.5 of the Articles) of Ordinary Shares on such terms and in such manner as the Directors determine provided that:
  - (i) the maximum aggregate number of Ordinary shares which may be purchased is 115,297,268 Ordinary Shares;
  - (ii) the minimum price(excluding expenses) which may be paid for each Ordinary share is £0.01;
  - (iii) the maximum price (excluding expenses) which may be paid for any Ordinary Share does not exceed 105 per cent of the average closing price of such shares for the 5 business days of AIM prior to the date of purchase; and
  - (iv) this authority shall expire at the conclusion of the next Annual General Meeting of the Company unless such authority is renewed prior to that time (except in relation the purchase of Ordinary Shares the contract for which was concluded before the expiry of such authority, in which case such purchase may be concluded wholly or partly after such expiry).
11. The Directors of the Company be and are hereby authorised to exercise all powers of the Company to issue, grant rights to subscribe for, or to convert any securities into, up 384,324,227 shares (together "**Equity Securities**") in the capital of the Company being approximately one third of the issued share capital of the Company (excluding treasury shares) in accordance with Article 8.3 of the Articles of Incorporation of the Company such authority to expire, unless previously renewed, revoked or varied by the Company by ordinary resolution, at the end of the next Annual General Meeting of the Company or, if earlier, at the close of business on the date falling 15 months from the date of the passing of this Resolution, but in each case, during this period the Company may make offers, and enter into agreements, which would, or might, require Equity Securities to be issued or granted after the authority given to the Directors of the Company pursuant to this Resolution ends and the Directors of the Company may issue or grant Equity Securities under any such offer or agreement as if the authority given to the Directors of the Company pursuant to this Resolution had not ended. This Resolution is in substitution for all unexercised authorities previously granted to the Directors of the Company to issue or grant Equity Securities; and

## SPECIAL RESOLUTION

12. If Resolution 11 is passed, the Directors of the Company be and they are hereby authorised to exercise all powers of the Company to issue or grant Equity Securities in the capital of the Company pursuant to the issue or grant referred to in Resolution 11 as if the pre-emption rights contained in Article 9.9 of the Articles of Incorporation of the Company did not apply to such issue or grant provided that: (A) the maximum aggregate number of Equity Securities that may be issued or granted under this authority is 115,297,268 shares, being approximately 10.0 per cent of the issued share capital of the Company (excluding treasury shares); and (B) the authority hereby conferred, unless previously renewed, revoked or varied by the Company by special resolution, shall expire at the end of the next Annual General Meeting of the Company or, if earlier, at the close of business on the date falling 15 months from the date of the passing of this Resolution, save that the Company may before such expiry make an offer or agreement which would or might require Equity Securities to be issued or granted after such expiry and the Directors may issue or grant Equity Securities in pursuance of such an offer or agreement as if the authority conferred by the above resolution had not expired. This Resolution is in substitution for all unexercised authorities previously granted to the Directors of the Company to issue or grant Equity Securities in the capital of the Company as if the pre-emption rights contained in Article 9.9 of the Articles of Incorporation of the Company did not apply to such issue or grant.

By order of the Board

**F MOJAPELO**

Director

23 June 2020

## Supplementary Information

# Notice of Annual General Meeting continued

### Notice of Meeting Notes:

The following notes explain your general rights as a shareholder and your right to attend and vote at this Meeting or to appoint someone else to vote on your behalf.

1. To be entitled to attend and vote at the Meeting (and for the purpose of the determination by the Company of the number of votes they may cast), shareholders must be registered in the Register of Members of the Company at close of trading on 3 August 2020. Changes to the Register of Members after the relevant deadline shall be disregarded in determining the rights of any person to attend and vote at the Meeting. Please note that in accordance with the Covid-19 Precautions set out above, the right of shareholders to attend the Meeting may potentially be temporarily restricted and it is possible that shareholders may not be able to physically attend the Meeting.
2. Shareholders are entitled to appoint another person as a proxy as set out below to exercise all or part of their rights to attend and to speak and vote on their behalf at the Meeting. A shareholder may appoint more than one proxy in relation to the Meeting provided that each proxy is appointed to exercise the rights attached to a different ordinary share or ordinary shares held by that shareholder. A proxy need not be a shareholder of the Company, but please note that in accordance with the Covid-19 Precautions set out above, shareholders are encouraged to appoint the Chairman of the Meeting as their proxy for the purposes of ensuring that their proxy will be able to attend the Meeting.
3. In the case of joint holders, where more than one of the joint holders purports to appoint a proxy, only the appointment submitted by the most senior holder will be accepted. Seniority is determined by the order in which the names of the joint holders appear in the Company's Register of Members in respect of the joint holding (the first named being the most senior).
4. A vote withheld is not a vote in law, which means that the vote will not be counted in the calculation of votes for or against the resolution. If no voting indication is given, your proxy will vote or abstain from voting at his or her discretion. In the absence of any specific instructions from you, your proxy will vote (or abstain from voting) as he or she thinks fit in relation to any other matter which is put before the Meeting.
5. You can vote either:
  - by logging on to [www.signalshares.com](http://www.signalshares.com) and following the instructions. This system allows you to appoint a proxy and to instruct your proxy how to vote. If you have not used the service before you will need to register online, for which you will need your investor code (IVC). In order for a proxy appointment to be made in this way, you will need to submit your instructions via [www.signalshares.com](http://www.signalshares.com) by 11 am on 3 August 2020;
  - by requesting a hard copy form of proxy directly from the registrars, Link Asset Services (previously called Capita), on Tel: 0371 664 0300. Calls cost 12p per minute plus your phone company's access charge. Calls outside the United Kingdom will be charged at the applicable international rate. Lines are open between 09:00 – 17:30, Monday to Friday excluding public holidays in England and Wales. In order for a proxy appointment by way of a hard copy form of proxy to be valid, the form of proxy must be received by Link Asset Services at 34 Beckenham Road, Beckenham, Kent, BR3 4ZF by 11 am on 3 August 2020.
  - in the case of shareholders holding their shares through CREST, by submitting a CREST Proxy Instruction utilising the CREST electronic proxy appointment service in accordance with the procedures set out below.
6. If you return more than one proxy appointment, either by paper or electronic communication (including via [www.signalshares.com](http://www.signalshares.com)), the appointment received last by the Registrar before the latest time for the receipt of proxies will take precedence. You are advised to read the terms and conditions of use carefully. Electronic communication facilities are open to all shareholders and those who use them will not be disadvantaged.
7. The return of a completed form of proxy or any CREST Proxy Instruction (as described in note 10 below), or the submission of instructions via [www.signalshares.com](http://www.signalshares.com), will not prevent a shareholder from attending the Meeting and voting in person if he/she wishes to do so.
8. Shareholders holding their shares through CREST who wish to appoint a proxy or proxies through the CREST electronic proxy appointment service may do so for the Meeting (and any adjournment of the Meeting) by using the procedures described in the CREST Manual (available from [www.euroclear.com/site/public/EUI](http://www.euroclear.com/site/public/EUI)). Shareholders holding their shares through a CREST sponsor or service provider(s) should refer to their CREST sponsor or voting service provider(s), who will be able to take the appropriate action on their behalf.
9. In order for a proxy appointment or instruction made by means of CREST to be valid, the appropriate CREST message (a 'CREST Proxy Instruction') must be properly authenticated in accordance with Euroclear UK & Ireland Limited's specifications and must contain the information required for such instructions, as described in the CREST Manual. The message must be transmitted so as to be received by the issuer's agent (ID RA10) by 11 am on 3 August 2020. For this purpose, the time of receipt will be taken to mean the time (as determined by the timestamp applied to the message by the CREST application host) from which the issuer's agent is able to retrieve the message by enquiry to CREST in the manner prescribed by CREST. After this time, any change of instructions to proxies appointed through CREST should be communicated to the appointee through other means.

10. Shareholders holding their shares through CREST and, where applicable, their CREST sponsors or voting service providers should note that Euroclear UK & Ireland Limited does not make available special procedures in CREST for any particular message. Normal system timings and limitations will, therefore, apply in relation to the input of CREST Proxy Instructions. It is the responsibility of the shareholder concerned to take (or, if the shareholder is a CREST personal member, or sponsored member, or has appointed a voting service provider(s), to procure that his CREST sponsor or voting service provider(s) take(s) such action as shall be necessary to ensure that a message is transmitted by means of the CREST system by any particular time. In this connection, shareholders holding their shares through CREST and, where applicable, their CREST sponsors or voting system providers are referred, in particular, to those sections of the CREST Manual concerning practical limitations of the CREST system and timings. The Company may treat as invalid a CREST Proxy Instruction in the circumstances set out in Regulation 34(1) of the Uncertificated Securities (Guernsey) Regulations, 2009.
11. Any corporation which is a shareholder can appoint one or more corporate representatives who may exercise on its behalf all of its powers as a shareholder provided that no more than one corporate representative exercises powers in relation to the same shares.
12. As at 22 June 2020 (being the latest practicable business day prior to the publication of this Notice), the Company's ordinary issued share capital (excluding treasury shares) consists of 1,152,972,682 ordinary shares, carrying one vote each. Therefore, the total voting rights in the Company as at 22 June 2020 are 1,152,972,682.
13. You may not use any electronic address (within the meaning of Section 523(2) of the Companies (Guernsey) Law, 2008) provided in either this Notice or any related documents (including the form of proxy) to communicate with the Company for any purposes other than those expressly stated.
14. A copy of this Notice can be found on the Company's website at [www.bushveldminerals.com/investors](http://www.bushveldminerals.com/investors).

**Supplementary Information**

# Company Information

**BUSHVELD MINERALS**

Registered Office  
18-20 Le Pollet  
St Peter Port  
Guernsey

**PRINCIPAL OPERATING ADDRESS**

2nd Floor, Building 3  
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South Africa  
Tel: +27 11 268 6555

**SP ANGEL****NOMINATED ADVISER & BROKER**

Prince Frederick House  
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London, W1S 2PP

**PEEL HUNT****JOINT BROKER**

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London EC2Y 5ET

**BMO CAPITAL MARKETS LIMITED****JOINT BROKER**

95 Queen Victoria St,  
London EC4V 4HG

**GOWLING WLG****LEGAL COUNSEL – UK**

4 More London Riverside  
London SE1 2AU

**RSM****INDEPENDENT AUDITOR**

RSM UK Audit LLP  
25 Farringdon Street  
London EC4A 4AB

**ORIENT CAPITAL LTD****COMPANY REGISTRAR**

125 Wood Street  
London EC2V 7AN

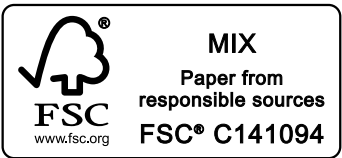
**MS. CHIKA EDEH****HEAD OF INVESTOR RELATIONS**

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The outer cover of this report has been laminated with a biodegradable film. Around 20 months after composting, an additive within the film will initiate the process of oxidation.



[www.bushveldminerals.com](http://www.bushveldminerals.com)