BUSHVELD MINERALS

Life. Powered.

December 2022

ANNUAL REPORT AND FINANCIAL RESULTS

Bushveld Minerals is a vertically-integrated primary vanadium producer. It is one of only three primary vanadium producers, with ownership of two of the world's four operating primary vanadium processing facilities. Bushveld offers compelling exposure to vanadium because it operates across both the upstream and downstream value chains through Bushveld Vanadium and Bushveld Energy.

Vanadium is an essential element in many modern processes. It is playing a critical role in the transition to a low-carbon economy to enable a more sustainable world. It reduces carbon emissions generated during steel production and in advancing utility-scale battery storage solutions. Bushveld's mission, as a producer of diversified vanadium products for the steel, clean energy and chemical sectors, is to be a leader across the vanadium value chain.

OUR PURPOSE

To mine, process and beneficiate vanadium in a way that contributes to the sustainability of the planet while creating tangible value for our stakeholders and society.

OUR STRATEGY

To build a sustainable, cash-generating, low-cost production platform and leverage it to create a leading downstream vanadium-based energy storage platform. By doing so, we will create value as an investor, project developer and manufacturer of electrolyte across the Vanadium Redox Flow Battery (VRFB) value chain. In effecting this strategy, our leadership prioritises the proactive identification and mitigation of all business and operating risks that may impede our objectives.

This report is also available at

www.bushveldminerals.com/financial-reports

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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 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". Cross-references refer to sections of the Annual Report, unless stated otherwise.

Business overview

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Our key strengths drive our investment case

We offer investors exposure to a future-focused energy commodity, both through our primary vanadium production facilities and our investments in the energy storage value chain.

A GREEN, FUTURE-FOCUSED COMMODITY, WITH ATTRACTIVE FUNDAMENTALS

- As a strengthening alloy in steel manufacturing, vanadium increases the efficiency of steel production, while reducing the global fossil carbon footprint by 0.4 percent.
- Vanadium's application in stationary energy storage, through vanadium redox flow batteries (VRFBs), promotes the integration of renewable energy sources, while increasing the efficiency of electricity grids. VRFB technology supports the global transition to clean energy and emits fewer CO_2 than competing storage technologies.
- Demand for vanadium, which is underpinned by its use as a strengthening alloy in the steel sector, is expected to increase at a Compound Annual Growth Rate (CAGR) of 3.1 percent through to 2030[1].
- Vanadium demand from VRFBs is expected to grow by a CAGR of 41 percent by 2031[2].
- Supply remains concentrated and constrained, with new primary supply from greenfields projects expected to be limited.
- The vanadium chemistry of the VRFB is fully reusable and recyclable at the end of the battery's life.

OUR MISSION IS TO BECOME A LEADING VANADIUM COMPANY

- Bushveld Minerals is one of only three operating primary vanadium producers. We own two of the world's four operating primary vanadium processing facilities and possess a diversified vanadium product portfolio to serve our customers around the world.
- Our vertical integration business model allows us to mine, process and manufacture vanadium-based products in a single value chain, in the most efficient manner.
- Our significant interest in a downstream vanadium-based energy storage platform enables us to participate in this rapidly-growing industry.
- The growth of the VRFB industry can support vanadium demand and contribute to minimising volatility in the vanadium price.

Vanchem plant

Ferrovanadium

WE HAVE INVESTED SUBSTANTIAL LONG-TERM CAPITAL

- After extensive capital investment, refurbishment and optimisation of Vametco, it is operating consistently and sustainably, and producing at a steady state.
- Refurbishment and stabilisation of Vanchem will help the operation to produce at a significantly increased production level.
- We have increased production over time and are well positioned to deliver further growth. We are targeting a sustainable production run rate of 5,000 to 5,400 mtV over the near-term, with a continued focus on improving efficiencies and driving cost saving initiatives.

[1] Project Blue, April 2023
[2] Guidehouse Insights, White paper, Vanadium Redox Flow Batteries, 2022.

Vametco plant

SOLID ASSET BASE AND POTENTIAL TO GROW PRODUCTION

- Our 546 Mt (100 percent basis) JORC-compliant resource is one of the world's largest primary vanadium deposits, and it offers significant growth potential.
- Bushveld Minerals' ore bodies are large, long-life, opencast deposits, with grades of 1.6-2.0 percent V_2O_5 in-magnetite, which are among the highest in the world.
- Our diverse range of vanadium products gives us flexibility to maximise sales and profit margins according to market demand.

SIMPLIFICATION OF THE GROUP STRUCTURE TO DELIVER SIGNIFICANT BENEFITS

- The carve-out of Bushveld Energy into a standalone energy storage focused company, will allow the new entity to attract the appropriate energy storage focused investors and achieve a market valuation that is more reflective of underlying value.
- The sale of Bushveld's interest in CellCube (also referred to as Enerox GmbH (Enerox)) to LSE-listed Mustang Energy Plc (Mustang), is an important part of the Group's process to carve-out Bushveld Energy.
- With a simpler structure, Bushveld Minerals will streamline its organisational model and narrow its operational focus on its upstream assets and Bushveld Electrolyte Company (BELCO), while retaining a shareholding in Mustang.
- Following the carve-out, Bushveld Minerals will be well-positioned to optimise its financing while delivering stronger growth and margins.

Vametco stock pile

IMPROVED CAPITAL STRUCTURE FOLLOWING THE CONVERTIBLE LOAN NOTE RESTRUCTURING

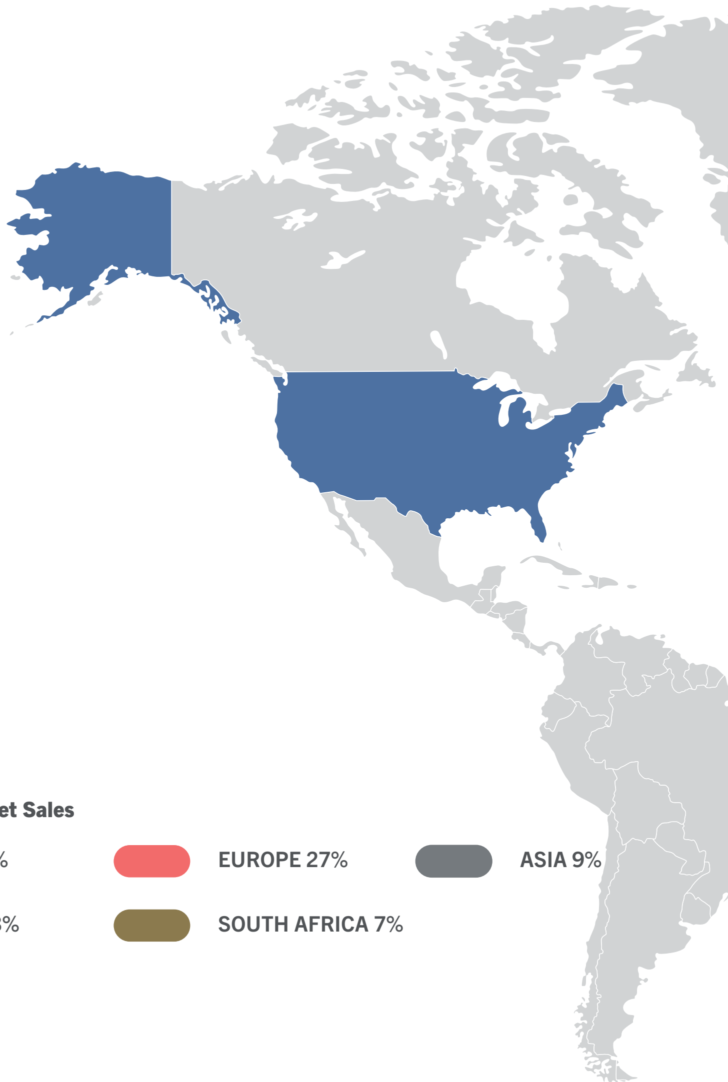
- Restructuring of the Orion Mine Finance (Orion) convertible loan note will help reduce the overhang on the stock from potential dilution.
- Determine a sustainable capital structure in relation to the Group's operations and longer-term growth ambitions.

BELCO plant

The upside potential of Bushveld Minerals' high-grade deposits and refurbished processing facilities offers investors an attractive opportunity to gain exposure to vanadium through our vertically-integrated model.

Our business at a glance

BUSHVELD MINERALS



Geographical Market Sales

USA 44% | EUROPE 27% | ASIA 9%

RoW* 13% | SOUTH AFRICA 7%

BUSHVELD VANADIUM

A VERTICALLY INTEGRATED PRIMARY VANADIUM PRODUCER

1. **Vametco (74% ownership)**
– Mine and processing facility
– Life-of-Mine of >30 years (Ore Reserves)

2. **Vanchem (100% ownership)**
– Processing facility

3. **Brits project (62.5 – 74% ownership)**
– Outcropping, strike extension of the Vametco mine
– Potential for additional ore feed for Vametco and Vanchem

4. **Mokopane project (64% ownership)**
– JORC-compliant 298 Mt resource, including 28.5 Mt reserves with grade of 1.75% V_2O_5 in-magnetite
– 30-year Mining Right executed in January 2020

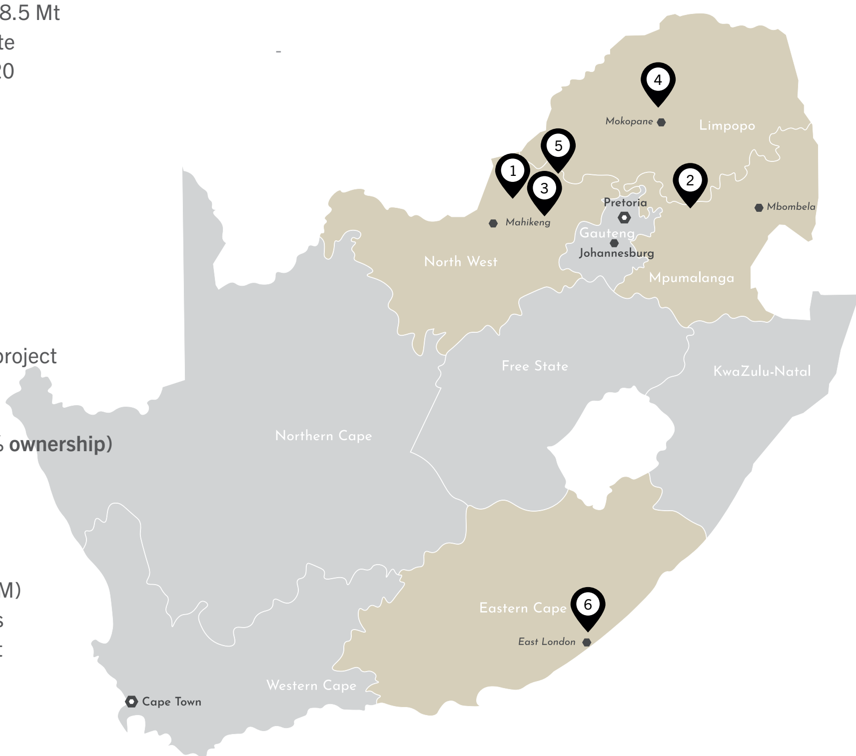
BUSHVELD ENERGY

AN ENERGY STORAGE SOLUTIONS PROVIDER, FOCUSED ON VRFBs

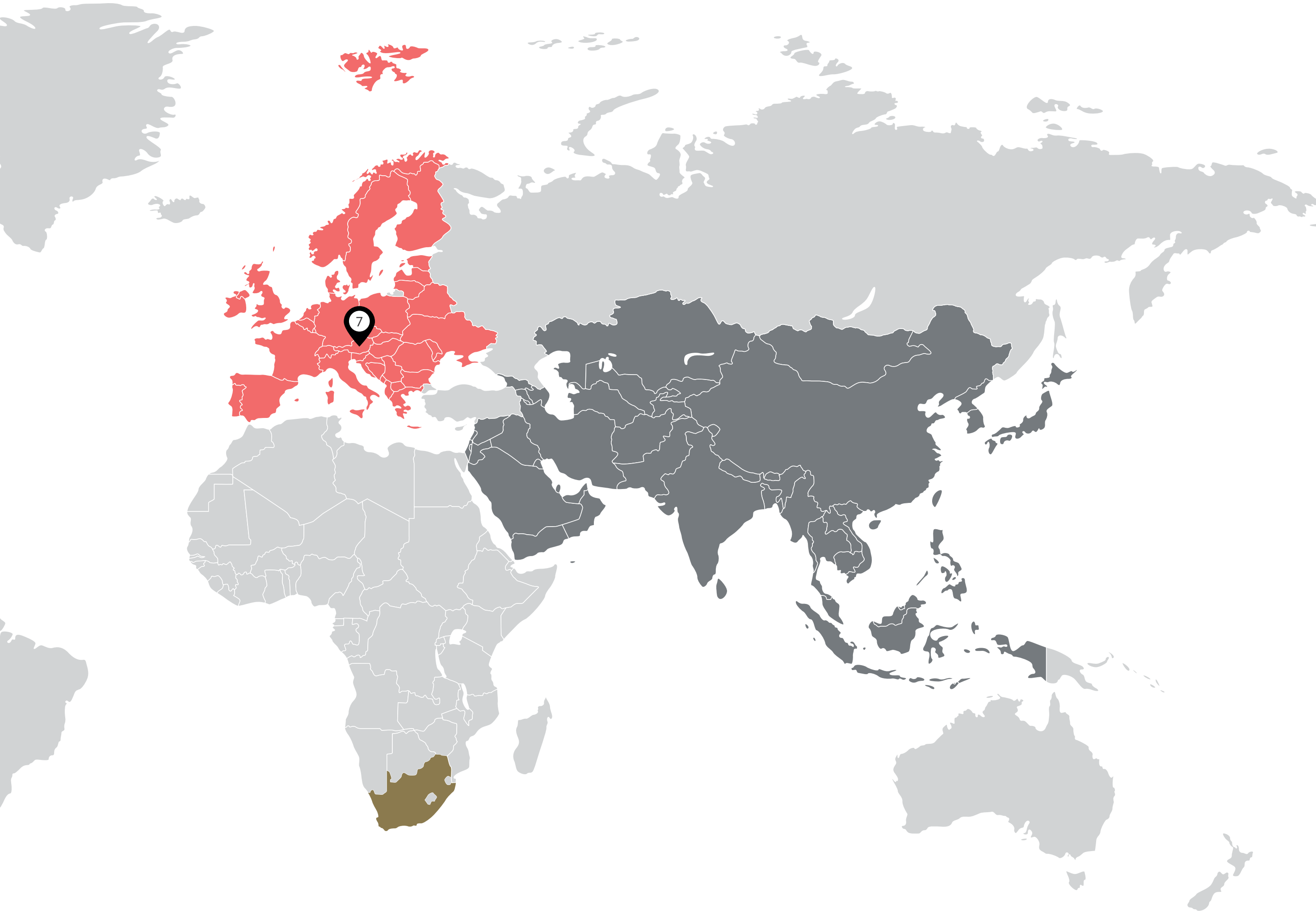
5. **Vametco mini-grid (40% ownership)**
– 3.5 MW solar PV and 1 MW/4 MWh mini-grid project
– Currently under construction

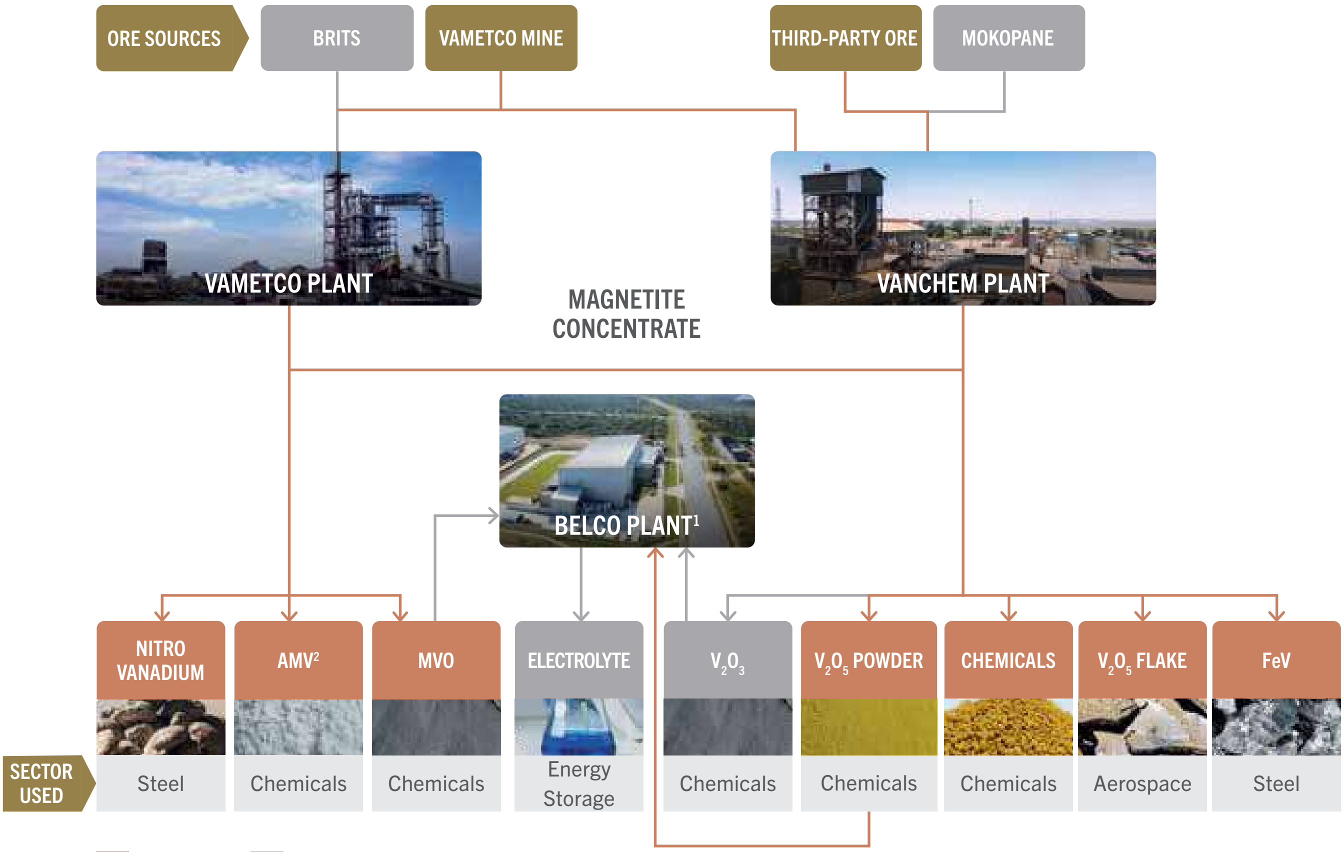
6. **Bushveld Electrolyte Company (BELCO) (55% ownership)**
– 8 million litre electrolyte production plant
– Currently being commissioned

7. **CellCube (25.25% indirect ownership)**
– A VRFB original equipment manufacturer (OEM)
– Deployed >140 systems across five continents
– Supplied 4 MWh VRFB to the mini-grid project



* Rest of the world.





Current   Future

1. BELCO also can use third-party oxide.
2. Vametco's AMV can be sent to Vanchem to produce FeV and V_2O_5, and Vanchem's AMV can be sent to Vametco to produce nitro vanadium.

AMV (ammonium metavanadate), V_2O_3 (vanadium trioxide), MVO (modified vanadium oxide), V_2O_5 (vandium pentoxide), FeV (ferrovanadium)

Abundant opportunity constrained by several challenges

TO OUR SHAREHOLDERS,

I am pleased to preface this Annual Report for the first time, having assumed the role of Chair from Ian Watson during the course of the year under review.

There is a natural tendency for communications such as this to dwell on the positive aspects of a company's performance and to understate or plead mitigation on the challenges and the negatives that impact results. In my view, this approach arguably discredits the overall content, and strains the credibility of what is, after all, the most important annual communication to the current and prospective owners of a company.

FINANCIAL AND OPERATIONAL PERFORMANCE

The Company remained loss-making, although it was able to report free cash flow, which was used to pay down debt and partially fund the Business' other initiatives. The quick ratio approximately halved, gearing increased, and equity accounts declined. This is not the outcome we planned for, nor is it sustainable, and this is reflected in our significantly discounted share price which more than halved in the year under review. The Board and management fully recognise this and have evolved plans to restore momentum in operational stability, revenue generation, cost constraint, profitability and cash generation.

The results for 2022 were, admittedly, impacted negatively by a combination of external and internal factors.

Externally, the conflict in Ukraine triggered an energy price and supply crisis that in turn created an inflationary cycle that central banks around the world responded to with monetary policy actions. Additionally, global supply chains were disrupted. Within South Africa, where the Company primarily operates, electricity supply was constantly disrupted by loadshedding, the government logistics infrastructure and services deteriorated, and raised inflation impacted operating costs.

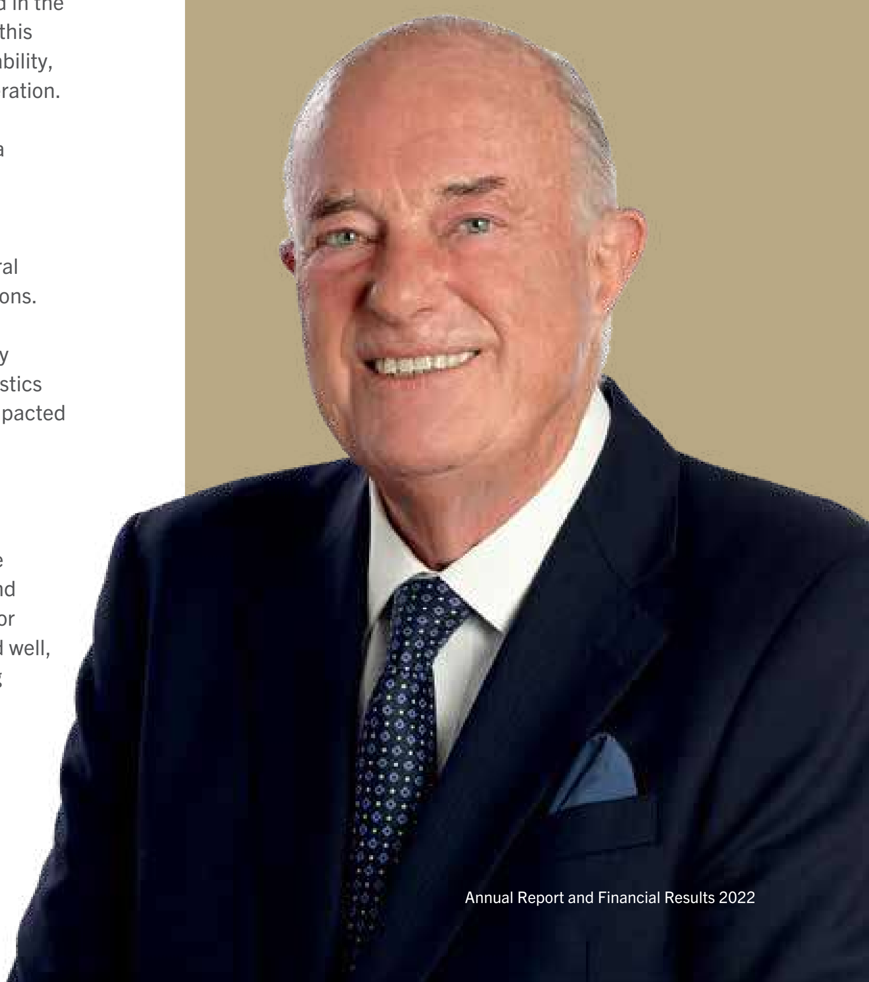
Internally, the Company faced issues with operational stability, particularly at its Vanchem plant. Production at the newly commissioned Kiln-3 was negatively impacted by the unreliable municipal power supply. The ore supply from Vametco was found to have a higher silica content than ideal resulting in the need for system clearing shutdowns. Thus, although Vametco performed well, Vanchem failed to hit its production target for the year resulting in guidance misses and higher Group overall sustaining costs.

GOING FORWARD AND FINDING SOLUTIONS

I prefaced my remarks by stating that the challenges Bushveld has faced, and the consequential disappointing financial results, mask the abundant opportunity that can be realised as the Company stabilises, and in the mid-term optimises, its operations and financial platform. Your Board believes this is eminently achievable and is underway.

In the face of these challenges, management has and continues to undertake various initiatives to ensure profitability in the current year, to improve the Company's capital structure, to secure a more stable power supply to support increased production, to contain costs and to crystallise value for the Bushveld Energy assets. The BELCO electrolyte plant will be commissioned and commence production during the second half of 2023, making Bushveld a fully-fledged vanadium electrolyte producer. Additionally, we are making good progress with the Vametco mini-grid, which is expected to supply just under 10 percent of Vametco's electrical energy and also be online during the second half of 2023.

At Vanchem, an arrangement has been concluded with the municipality to stabilise power supply and this has already had a positive impact in the first quarter of 2023. Also, an ore supply contract has been concluded with a third-party operating in the Bushveld Complex for the supply of low-silica high-grade ore that will have a positive impact on productivity and costs at the plant.



As previously announced, plans are well advanced for CellCube, one of Bushveld Energy's assets, to be carved out into a listed vehicle on the London Stock Exchange (LSE). Your Company will retain a significant minority holding in this vehicle and therefore keep a stake in the evolution of vanadium as an energy storage resource. This carve-out will help reduce central costs and permit greater focus on the residual core businesses. The devolved pure energy storage entity should also be able to attract capital, new investors, and a valuation aligned to that sector.

We have previously announced that we are negotiating a restructuring of the financing provided by Orion. The objective of the proposed arrangements is to extend debt maturities and to reduce the equity dilution overhang from the convertible loan note. We are grateful to Orion for their continuing support. The refinancing will be conditional on a number of factors being worked on and also upon shareholder approval which we expect will be sought at this year's General Meeting.

GOVERNANCE

During the year under review the Board of Directors has been materially reconstituted. Ian Watson, who chaired the Company since its inception, retired. Ian oversaw the early development of Bushveld and its transformation into an integrated vanadium producer. His long service and guiding hand deserve our full appreciation and we wish him well for the future.

On Ian's retirement I assumed the role of Interim Chair and subsequently the Board has seen fit to confirm my appointment as Chairman on an ongoing basis. I thank my fellow Directors for placing their trust in me and look forward to working with them as a team to the benefit of all our stakeholders.

Additionally, two of our longest serving Directors, Anthony Viljoen (a co-founder) and Jeremy Friedlander retired from the Board. Their wise counsel and engagement in the development of Bushveld should similarly be recognised.

We have been fortunate to attract a new slate of very capable Directors to the Board with the appointments over the last 18 months of Kevin Alcock, Mirco Bardella and David Noko. They bring relevant and valuable experience to the Board (see their biographies on page 50 and are playing a key role in guiding Bushveld in its next stage of development.

During the year we also welcomed Jacqueline Musiitwa as a Non-Executive Director but unfortunately, she was obliged to step down upon accepting a role within the United States Agency for International Development (USAID) that precluded her from remaining in private sector roles. We wish her success in this important engagement.

Further to this, we have announced that co-founder and Chief Executive, Fortune Mojapelo, has decided to step down from his role as of 01 July 2023. He has led the Company for over 11 years and has, through his vision and dedication to the Company, built Bushveld Minerals from an exploration business to a multi-asset vanadium producer, owning and operating two of four global primary vanadium processing facilities. We sincerely appreciate all that Fortune has done to make Bushveld what it is today and wish him every success in his future endeavours.

We are delighted that Craig Coltman is taking up the position as CEO. Having worked with De Beers Consolidated Mines for over 32 years in various operational and commercial roles, and most recently as Chief Financial Officer and Executive Director of the group, Craig is well qualified to take up the leadership mantle and steer the Company going forward. We look forward to working with him during a short period of transition and thereafter.

CONCLUSION

We reinforce to our shareholders that our strategic aims are robust and achievable. The foundations are laid, the edifice is progressing but remains work in progress. The focus of the Board and the Management is to deliver value and returns to our owners through, and I am being intentionally repetitive, achieving our operational targets, managing costs, generating free cash flow, strengthening our balance sheet, and investing capital prudently.

The Board has been incredibly engaged and supportive as we tackle our challenges and it remains only for me, on their behalf, to thank the entire Bushveld team for their efforts, resilience and dedication during a challenging year and wish them well for fairer winds ahead.

Michael J. Kirkwood
20 June 2023

Progress with more potential in the pipeline

DEAR STAKEHOLDERS,

I am pleased to present the report on Bushveld Minerals' performance over the past financial year. The year 2022 marks 10 years since the Company's listing on AIM as a junior mineral exploration company. It also marks five years since we embarked on our transformative journey from an explorer into a vanadium producer, first with the acquisition of Vametco, and later Vanchem. This allowed us to produce a broad range of vanadium products that enable the production of more environmentally friendly steel and support the global energy transition to green renewable energy through the application of long-duration VRFBs.

In that time the Company has invested substantially to establish a vertically-integrated primary vanadium production platform comprising (a) two of only four operating primary-processing plants in the world, supplying more than three percent of the global vanadium market, with scope to grow this into the future and (b) a VRFB platform that is positioned to play a meaningful role in the growing stationary energy storage market.

While 2022 started with optimism on the back of a receding COVID-19 pandemic, several factors in the geopolitical developments continued to plague the global economy and specifically the vanadium market. Consequently, between 2021 and 2022, vanadium demand in steel making dropped by 0.41 percent which was fortunately mitigated by a 79 percent increase in vanadium demand from the energy storage sector, resulting in an overall increase of 0.48 percent in vanadium demand.

This global backdrop was exacerbated by unique local challenges, most notably the national electricity crisis that saw Vanchem without a steady flow of electrical supply at a pivotal time when it was commissioning and optimising Kiln-3 after the refurbishment programme.

THE YEAR IN REVIEW

If external factors paint a bleak operating environment for the Company in the past three years, they also cast a spotlight on its resilience, as it continued to invest in its producing assets to grow production and lower unit costs (particularly at the recently refurbished and ramping up Vanchem) as well as continuing to develop its vanadium energy storage platform.

The Group production increase from 3,592 mtV in 2021 to 3,842 mtV in 2022, was underpinned by Vametco's operational performance. Having achieved operational stability during the second half of 2021, its consistent production rates enabled it to report full-year production of 2,705 mtV, exceeding the upper end guidance of 2,550 – 2,650mtV.

In contrast to stable production at Vametco, Vanchem production missed guidance for an overall production of 1,137mtV. Consequently, Group production, at 3,842 mtV, was below the lower end of the revised guidance of 3,900-4,100 mtV. Lower recovery rates from Kiln-1 at Vanchem as it was taken out of service, a slower-than-anticipated ramp-up of Kiln-3 post commissioning, higher silica content in the ore supply, and the impact of loadshedding which affected our ability to optimise output, meant production levels were considerably lower than anticipated. Details on the Group's operational performance can be found in the Operating Assets and Operational Review section of the Annual Report.

Although we did not achieve our Group production run rate target of 5,000-5,400 mtV by the end of 2022, we remain committed to meeting this target by attaining similar levels of operational stability at Vanchem as Vametco – centred around securing supply of suitable ore, stable power supply and improved post commissioning operations – all three areas that the Company has made progress in resolving.

Specifically, in November 2022, an agreement was reached with the Emalahleni Local Municipality putting Vanchem on a load-curtailment contract plan. This arrangement has resulted in reduced/curtailed power supply rather than an outright loss of power during periods of loadshedding. While this has resulted in a marked improvement in power security for Vanchem so far in 2023, we continue to pursue a direct contract with Eskom, in line with Vametco's power supply arrangements. In addition to this, the access to low-silica, third-party feedstock will also contribute to improved production and less downtime at Vanchem.

Group production cash cost of US$27.7/kgV was higher than in 2021 and above our guidance of between US$22.7/kgV and US$23.5/kgV, driven by significantly higher price inflation across most inputs and energy prices as

well as a higher fixed cost base not matched by expected higher production at Vanchem. Next to stable production performance, cost containment is an area receiving intense focus across several areas of the business. Details on our cost initiatives can be found in the Finance Director's Review.

BUSHVELD ENERGY

Progress continues in advancing both the development of the BELCO electrolyte plant in East London and the mini-grid at Vametco. We have concluded that the full value and potential of Bushveld Energy as a subsidiary business will be constrained and for this reason we have been preparing its carve-out into a stand-alone business.

As previously announced, we have entered into a conditional agreement to sell our entire interest in CellCube to Mustang, and, in exchange, we will receive shares in Mustang. The sale is an important part of the carve-out process, as it effectively gives Bushveld a significant stake in a London-listed energy storage business. The transaction provides CellCube with direct access to capital markets, allowing it to attain a transparent market value and attract specialist investors looking to participate in this exciting growth sector.

As we have communicated, it is the right time for this emerging energy storage story to take on a life of its own, while we retain an interest in the business through Mustang and, most importantly, maintain our vertically-integrated business model. Subject to various regulatory consents and capitalisation, we expect to complete the carve-out during the second half of 2023.

FINANCIAL PERFORMANCE AND CONVERTIBLE LOAN NOTE

Despite the operational challenges we faced during the year under review, higher prices and sales meant we generated Revenue of US$148.4 million, underlying EBITDA[1] of US$22.3 million and a reduced adjusted EBITDA[1] loss of US$1.7 million. During the year we repaid the entire Nedbank revolving credit facility of US$5.9 million. We generated free cash flow of US$14.6 million and ended the year with a cash and cash equivalent balance of US$10.9 million.

A large proportion of our capital investment over the last five years was funded by debt, which includes a US$35 million convertible loan note held by Orion. With an advancing maturity date of November 2023, the convertible loan note was putting pressure on our balance sheet and creating a potentially dilutive overhang on the share price. We are in advanced discussions with Orion for the convertible loan note to be restructured so as to substantially reduce the pressure on the Company's balance sheet. Details of the revised structure are provided in Note 37 of the Financial Statements.
An extensive assessment of the financial position indicates that the Group requires additional liquidity in order to meet its obligations and activities over the next 12 months. We are exercising levers within our control to improve the Group's liquidity. In addition to these internal mechanisms under our control we are pursuing various financing alternatives to increase our liquidity and capital resources. Details on the Group's Going Concern can be found in the Finance Director's Review and in Note 3 of the Financial Statements.

SUSTAINABILITY AND SAFETY

Long-term sustainability depends on securing and maintaining a solid social licence to operate by nurturing strong partnerships with all our stakeholders, especially our communities.

We also acknowledge that sustainability, for all companies, is a journey. In 2022, we made notable progress in our sustainability journey, highlighted by the establishment of an Environment Social and Governance (ESG) Committee to oversee and monitor the implementation of our ESG strategy. Our longer-term ambitions remain unchanged, the details of which can be found in the Sustainability section of this report. The safety and well-being of our employees and contractors is an absolute priority and we remain committed to the objective of zero harm in our workplace. We had no fatalities during the current reporting period, however, the Group's 2022 Total Injury Frequency Rate (TIFR) of 10.32 was 33 percent higher than 2021. For this reason, in the year under review, we commissioned an audit of our safety procedures and performance. We understand what the gaps are and I am heartened to report that this has started yielding results, as evidenced by the 50 percent improvement in the TIFR in the last quarter of 2022.

CONCLUSION

I extend my heartfelt thanks to every one of Bushveld Minerals' employees. In spite of the many challenges we face, your visible commitment to ensuring the success of this Company in 2022 was greatly appreciated by myself, senior management, and the Board. I would like to thank our shareholders for their patience, commitment, and faith in the Company.

I am confident in the opportunities that lie in the future for the Business and firmly believe that the efforts of the past, position the Company well to capture these going forward.

Finally, the Company and I announced today that after more than 10 years as the founding CEO of Bushveld Minerals, I will be stepping down and will not seek re-election to the board of the Company. Simultaneously announced today is the appointment of Craig Coltman as CEO of the Company with effect from 01 July 2023.

Co-founding and leading Bushveld Minerals into an integrated vanadium platform positioned to play an ever increasing role in the growing vanadium industry has been an immense privilege. While recognising the challenging circumstances the Company has had to navigate in recent years, my conviction in the potential and future success of this Company remains.

To our shareholders and stakeholders, thank you for your trust; and to the team at Bushveld under the leadership of Craig, I wish you the success that all your hard work and the trust of our stakeholders deserves.

Fortune Mojapelo
20 June 2023

1. Adjusted EBITDA is EBITDA excluding the Group's share of losses from joint ventures and other expenses. Underlying EBITDA is adjusted EBITDA excluding impairment losses.

Our strategy: vertical integration

Our strategy is centred on building a sustainable, cash-generating, low-cost production platform, comprising:
- High-grade, opencast and low-cost primary vanadium mines; and
- Refurbished, scalable production plants and a new electrolyte processing facility.

We have leveraged our production platform to build Bushveld Energy, a downstream vanadium-based energy storage platform, creating value as a manufacturer of electrolyte, investor and project developer across the VRFB value chain.

Through our vertical integration business strategy, Bushveld Minerals plays a role in both the upstream and downstream vanadium value chains. Our vertical integration strategy and synergies across our operations provide:
- A natural hedge against future vanadium price volatility; and
- Security of supply of vanadium required for downstream products.

BROWNFIELD DEVELOPMENT

We own two primary vanadium processing plants: Vametco and Vanchem. This portfolio is capable of ramping up to a combined output of 5,000-5,400 mtVp.a. through organic growth, requiring no additional capital expenditure.

At Vametco, we have invested in refurbishment and optimisation initiatives and have now achieved operational stability at the mine and plant. At Vanchem, the initial phase of refurbishment was completed in 2022. However, it has been unable to achieve nameplate capacity due to a combination of operational challenges and electricity shortages. We are confident that, on the back of the actions we have taken, Vanchem will be able to ramp up to a steady state.

DOWNSTREAM DEVELOPMENT

Bushveld Energy's focus is to take advantage of downstream opportunities for vanadium in long-duration energy storage, where VRFBs are now playing a significant role. Bushveld Energy established BELCO, a manufacturer of vanadium electrolyte for VRFBs, which is expected to be commissioned in mid-2023. It also took an equity stake in CellCube, a VRFB OEM, and it is building a hybrid mini-grid at Vametco mine, which will supply just under 10 percent of the mine's electricity needs.

The carve-out of Bushveld Energy into a standalone energy storage focused company will allow it to be in a better position to attract the appropriate market valuation. The sale of Bushveld's interest in CellCube to Mustang, for which Bushveld Minerals will receive shares into Mustang, is an important part of the carve-out and will allow us to retain our vertically-integrated business model.

London Metal Bulletin, price as at 10 June 2022

Our business model: producing differentiated vanadium-based products

Bushveld Minerals' vertically-integrated business model combines mining and processing with further beneficiation to produce products for the steel, energy, chemicals and aerospace industries. We are also building an electrolyte production facility and have incubated energy assets.

Our sought-after products enjoy market premiums due to their superior quality. In all our activities, we strive to be a responsible and respectable social partner, ensuring sustainable economic growth and development for the communities around us while creating value for our shareholders. This is how we create value for all our stakeholders:

Mining – We have access to some of the highest grades of vanadium in the world and focus on efficient, sustainable, safe and low-cost extraction.

Processing – Our processing facilities, which use standard salt-roast and leach methods, have undergone continued refurbishment and optimisation initiatives to achieve stable processing and refining.

Sales and marketing – We supply products to our customers' specifications and optimise our sales to higher-value markets globally.

Downstream activities – Through Bushveld Energy we provide utility-scale energy storage solutions, including electrolyte production, VRFBs (through our investment in CellCube) and energy storage focused projects.


Vametco mine


Vametco plant


Vanchem plant


Belco plant

The combination of our people, processes and plants allows us to provide differentiated products to our customers.

Group three-year performance indicators

We set Key Performance Indicators (KPIs) and targets each year and measure our success against the achievements of these targets.

Production KPI

Record Group production of 3,842 mtV, supported by operational stability and improved performance at Vametco.

Sales

The 2022 sales volume of 3,584 mtV was eight percent higher than in 2021.

Production (mtV)

Sales (mtV)

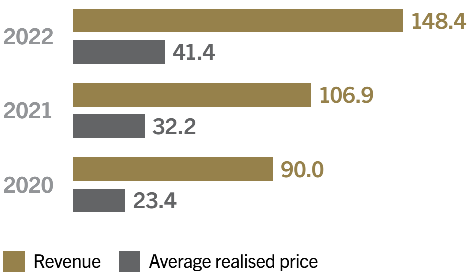
Revenue versus average realised price

Group revenue of US$148.4 million was supported by an improved realised price and higher sales volumes.

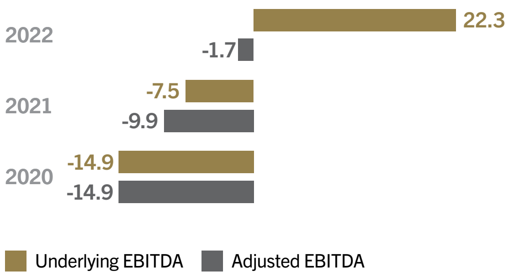
Underlying and Adjusted EBITDA KPI

Underlying EBITDA of US$22.3 million and Adjusted EBITDA loss of US$1.7 million, due to impairment charges of US$24.0 million.

Revenue (US$ millions)/average realised price (US$/kgV)



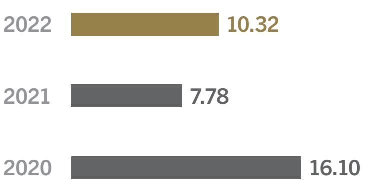
Underlying and Adjusted EBITDA (US$ millions)



Safety: Total Injury Frequency Rate (TIFR)

Group TIFR was 10.32 relative to 7.78 in 2021, this includes first aid incidents recorded.

TIFR



We are building on 2022’s progress

	2022 achievements	2023 objectives	Near-to-medium-term objectives
HEALTH AND SAFETY	– Reported zero fatalities, but regrettably nine lost time injuries and one new case of occupational health was recorded.	– Maintain a safe environment for all employees and contractors through deliberate housekeeping and asset integrity programmes. – Ensure that all hazards are fully understood and risks are assessed, through reviewing and updating all safe operating and maintenance procedures.	
FINANCIAL	– US$22.3 million Underlying EBITDA; US$1.7 million Adjusted EBITDA loss. – Impairment charges of US$24.0 million, mostly due to impairment loss of US$17.2 million and US$5.1 million recognised for Vanchem and the Imaloto Coal Project, respectively. – US$10.9 million cash and cash equivalents as at 31 December 2022. – Paid in full the Nedbank revolving credit facility of US$5.9 million. – Procurement cost savings of US$1.5 million in 2022. – Group cost per unit sold (incl. sustaining capital) US$43.7/kgV	– Restructure the Orion convertible loan note to a more sustainable capital structure. – Achieve procurement cost savings of approximately US$1.3 million. – Strengthen the Company’s balance sheet. – Increase Business profitability and free cash flow generation.	– Achieve a capital structure that will enhance shareholder value. – Realise additional cost savings through a production increase and other cost management initiatives.
OPERATIONAL	BUSHVELD VANADIUM – Realised annual production of 3,842 mtV. – Production cash cost of US$27.7/kgV – Vametco achieved stable operational performance. – Commissioned Vanchem’s Kiln-3.	– Achieve production of 4,200-4,500 mtV. – Attain operational stability and maintain consistent performance. – Achieve weighted average cash cost of US$26.1/kgV-US$27.0/ kgV, and continue to contain costs.	– Reach our target of 5,000 to 5,400 mtVp.a. – Achieve steady state production at Vanchem of between 2,300 mtV and 2,500 mtV.
	BUSHVELD ENERGY – Secured the funding and started construction of the Vametco mini-grid. – Completed initial study on local VRFB manufacturing with the Industrial Development Corporation (IDC).	– Bring the BELCO electrolyte plant and the Vametco mini-grid into operation.	– Continue the scale-up of our electrolyte rental product.
STRATEGIC	– Announced the carve-out of Bushveld Energy to facilitate access to capital markets, achieve a transparent valuation and attract specialist investors. – Entered into an agreement to sell our entire interest in CellCube to Mustang.	– Complete the carve-out, while retaining Bushveld Minerals’ vertically-integrated business model.	

Positive Underlying EBITDA as Vametco attains target production

1. OVERVIEW

	Unit	FY 2022	FY 2021
Revenue	US$m	148.4	106.9
Cost of sales	US$m	(108.3)	(102.8)
Other operating costs and income	US$m	(40.0)	(12.8)
Administrative costs	US$m	(20.3)	(20.5)
Adjusted EBITDA[1]	US$m	(1.7)	(9.9)
Impairment charges	US$m	(24.0)	(2.4)
Underlying EBITDA[2]	US$m	22.3	(7.5)
Operating loss	US$m	(20.1)	(29.3)
Average foreign exchange rate	US$:ZAR	16.35	14.79
Group production	mtV	3,842	3,592
Group sales	mtV	3,584	3,314
All-in sustaining cost	US$/kgV	43.7	37.4
Average realised price	US$/kgV	41.4	32.2

The 2022 financial results show an improvement on the prior year in a number of line items although we remained loss making. Our strategy to prioritise operational stability and increase investment in maintenance paid off as Vametco achieved consistent and stable operational performance which was reflected in the financial numbers.

We recorded an underlying EBITDA of US$22.3 million and adjusted EBITDA loss of US$1.7 million. While an operating loss of US$20.1 million was incurred, this was a US$9.2 million positive change from the prior year, as realised prices rose and we continued with our cost management measures to mitigate any inflationary pressures and electricity challenges. We realised savings of US$1.5 million owing to initiatives related to procurement. The operating loss also included impairment losses of US$24.0 million, U$21.5 million higher than the prior year. US$17.2 million of the impairment losses pertain to Vanchem.

Two years of volatile prices, operational challenges and the impact of the COVID-19 pandemic have restricted our ability to pay down the rest of the debt on our balance sheet. To this end we recently announced a proposed refinancing of the Orion US$35 million convertible loan notes and capitalised interest into a revised capital structure. Details on the proposed refinancing are included in note 37 in the annual consolidated financial statements. The refinancing will be conditional on several items, including due diligence, shareholder approval at a general meeting and definitive documentation. We have made significant progress with the legal documentation of the restructuring.

The restructure of the convertible loan notes is expected to remove the risk of a large cash outflow, which has been putting pressure on our balance sheet and cash position. The new structure will enable the Group to repay the debt over a longer time period and in line with the Group's planned internally generated cash flows.

2. INCOME STATEMENT

Analysis of results

The income statement summary below is adjusted from the "statutory" primary statement presentation:

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000
Revenue	**148,448**	**106,857**
Cost of sales excluding depreciation	(90,268)	(83,780)
Other operating costs and income[3]	(39,950)	(12,837)
Administration costs excluding depreciation	(19,889)	(20,125)
Adjusted EBITDA	**(1,659)**	**(9,885)**
Depreciation	(18,475)	(19,395)
Operating loss	(20,134)	(29,280)
Other losses	(818)	(1,902)
Share of loss from joint ventures	(5,112)	(4,351)
Fair value gain on derivative liability	2,934	9,010
Net financing expenses[4]	(13,654)	(12,373)
Loss before tax	(36,784)	(38,896)
Income tax	1,345	4,671
Net loss for the year	**(35,439)**	**(34,225)**

Revenue

	Year ended 31-Dec-22	Year ended 31-Dec-21
Group sales (mtV)	3,584	3,314
Average realised price (US$/kgV)	41.4	32.2
Revenue (US$'000)	148,448	106,857

1. Adjusted EBITDA is EBITDA excluding the Group's share of losses from joint ventures, fair value gain on derivative liability and other losses. Refer to the reconciliation on page 18.
2. Underlying EBITDA is Adjusted EBITDA excluding impairment losses. Refer to reconciliation on page 18.
3. Other operating costs and income include other operating income, impairment losses, selling and distribution costs, other mine operating costs and idle plant costs.
4. Finance income less finance costs

Revenue

Revenue of US$148.4 million for the Group was 39 percent higher than in the previous year, underpinned by the improved average realised price of US$41.4/kgV (2021: US$32.2/kgV) and increased Group sales volumes of 3,584 mtV, following record production of 3,842 mtV.

The geographic split of Group sales in 2022 was 44 percent to the USA, 27 percent to Europe, nine percent to Asia, seven percent to South Africa, and 13 percent to the rest of the world.

During the year, nitro vanadium sales into North America were prioritised due to the higher vanadium prices realised in this region and we maximised worldwide sales into the aerospace and speciality chemical products sectors, which attract price premiums.

Cost analysis

	Year ended 31-Dec-22	Year ended 31-Dec-21
Cost of sales excluding depreciation	(90, 268)	(83,780)
Other operating costs and income	(39,950)	(12,837)
Administrative costs excluding depreciation	(19,889)	(20,125)
Total income statement operating cost excluding depreciation	**(150,107)**	**(116,742)**
Total units sold (mtV)	3,584	3,314
Cost per income statement per unit sold (excluding depreciation) (US$/kgV)	41.9	35.2
Sustaining capital	(6,589)	(7,192)
Total cost including sustaining capital	**(156,696)**	**(123,934)**
Cost per unit sold including sustaining capital (US$/kgV)	43.7	37.4

Cost of sales

The cost of sales, excluding depreciation, for the year was US$90.3 million, contained to an inflationary 8 percent increase year-on-year, primarily due to higher costs at both Vametco and Vanchem. The cost increases included:

- Higher personnel costs at Vanchem associated with the commissioning and ramp-up of Kiln-3 in order to seek to achieve the anticipated production run rate of 2,600 mtVp.a which was not attained in the financial year due to ore quality and electricity supply issues;
- Inflationary increases in raw material prices from suppliers;
- Higher energy costs due to the increase in oil and diesel prices as well as an increase in diesel usage during periods of loadshedding at Vanchem;
- Higher maintenance costs, mainly at Vanchem, due to the additional maintenance required on Kiln-1, as well as maintenance costs to sustain the plants, production volumes and improve operational stability; and
- Higher mining costs at Vametco, primarily due to increased activity associated with mining the Upper Seam.

Other operating costs and income

Other operating costs and income increased to US$40.0 million due to:

- A US$2.9 million increase in selling and distribution costs to US$9.3 million, primarily driven by the higher commissions paid which are a consequence of the increased revenue as well as increased shipping and warehouse costs;
- A US$3.3 million increase in idle plant costs to US$6.7 million, primarily due to the unplanned downtime at Vanchem associated with Kiln-1 during the first half of the year, unplanned downtime due to loadshedding and higher than anticipated silica content in the ore;
- A US$21.5 million increase in impairment losses to US$24.0 million, primarily due to an impairment loss of US$17.2 million recognised for Vanchem given the slower than expected ramp up. We previously recognised a gain on bargain purchase of US$60.6 million on the acquisition of Vanchem in 2019, being the difference between the fair value of the consideration paid and the fair value of the acquired assets and liabilities. Also included in impairment losses is US$5.1 million in respect of the Imaloto Coal Project as there are no further planned expenditures for this project as well as an impairment loss of US$1.6 million recognised for property, plant and equipment; and
- Other operating income of US$2.7 million was unchanged relative the prior year.

Cost per unit sold

The Group cost per unit sold for the year (including sustaining capital expenditure) was US$43.7/kgV. This represents a 17 percent increase relative to the prior year primarily as a result of the cost factors noted above, offset by the cost containment measures we implement; higher sales volumes and a weaker ZAR:US$ exchange rate.

Administration costs

Administration costs, excluding depreciation charges for the year were US$19.9 million. Below is a breakdown of the key items included in administration costs:

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000
Staff costs	9,327	10,746
Professional fees	6,007	5,861
Share-based payments	315	(375)
Other (incl. IT and security expenses)	4,240	3,893
	19,889	**20,125**

Cost-saving programme

We continued with our cost-reduction measures, as previously announced, and realised savings of US$1.5 million owing to procurement initiatives for the 2022 financial year. We re-estimated the projected savings for 2023, in light of inflationary pressures, lingering product shortages, wage escalations, shipping challenges and surging commodity prices, to US$1.3 million. The total expected savings will be US$2.8 million over the two-year period, which is still within the US$2.5 million to US$4.0 million cost-savings target we had previously provided, despite the negative impact of factors outside of our control such as inflation. While production volume growth is expected to contribute the most to reducing unit costs, we will continue to seek broader cost-saving opportunities to improve the Group's unit cost performance even further. These efforts are focused on procurement, payroll, administration costs and maintenance.

Adjusted and underlying EBITDA

Adjusted EBITDA is a factor of volumes, prices and cost of production. This is a measure of the underlying profitability of the Group, which is widely used in the mining sector. Underlying EBITDA removes the effect of impairment charges.

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000
Revenue	148,448	106,857
Cost of sales	(108,304)	(102,782)
Other operating costs and income	(39,950)	(12,837)
Administration costs	(20,328)	(20,518)
Add: Depreciation and amortisation	18,475	19,395
Adjusted EBITDA	(1,659)	(9,885)
Add: impairment losses	23,965	2,439
Underlying EBITDA	22,306	(7,446)

	US$'000
2021 Underlying EBITDA	(7,446)
Revenue changes	41,591
Operating costs changes	(20,163)
Inventory movement	8,324
2022 Underlying EBITDA	22,306

The Group delivered an adjusted EBITDA loss of US$1.7 million, an improvement of US$8.2 million compared to 2021, primarily driven by the higher average realised price and higher sales volumes, and partially offset by the increase in cost of sales and other operating and administration costs. The Group generated an underlying EBITDA of US$22.3 million, which was an improvement of US$29.8 million compared to the previous year.

Net financing expenses

Net financing expenses were US$13.7 million, US$1.3 million higher than in the prior year. The increase was primarily due to interest on the Orion PFA and Orion convertible loan notes. Below is a breakdown of net financing expenses:

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000
Finance income	(494)	(935)
Interest on borrowings	11,189	10,687
Unwinding of discount	1,726	1,915
Interest on lease liabilities	974	459
Other finance costs	259	247
	13,654	12,373

Interest on borrowings mainly reflected the finance cost on the Orion convertible loan notes of US$6.4 million (2021: US$5.4 million), interest on the Orion PFA of US$4.4 million (2021: US$4.3 million), and interest on the Nedbank revolving credit facility of US$0.2 million (2021: US$0.6 million). Refer to note 36 in the annual consolidated financial statements for details of the change in the accounting treatment for the Orion convertible loan notes and its impact on finance costs.

Other non-cash costs

The share of loss from investments in joint ventures of US$5.1 million (2021: US$4.4 million) is the Group's share of the loss from its investment in VRFB-H.

The fair value gain on the derivative liability on the Orion convertible loan notes was US$2.9 million, a decrease from the US$9.0 million in the prior year, as restated. The decrease was primarily driven by the decrease in the Company's share price compared to the conversion price on the Orion convertible loan notes of 17 pence.

3. BALANCE SHEET

Assets

Non-current assets related to intangibles and property, plant and equipment decreased compared to the previous year due to impairment losses recognised, depreciation, and exchange rate differences arising from a weaker ZAR:US$ exchange rate, partially offset by capital expenditures.

Investment in joint ventures of US$3.2 million represents the Group's equity investments in VRFB-H and the Vametco mini-grid. The investment in joint ventures decreased from 2021 owing to the recognition of the Group's share of the losses amounting to US$5.1 million, partly offset by the US$1.2 million investment into Vametco's mini-grid.

Inventories of US$55.0 million increased by US$13.4 million compared to the prior year, primarily due to an increase in work in progress at Vanchem as a result of continued loadshedding. This impacted the conversion of work in progress to finished goods.

5. Other operating costs and income include other operating income, selling and distribution costs, other mine operating costs and idle plant costs
6. Finance income less finance costs

The decrease in cash and cash equivalents to US$10.9 million was primarily due to capital expenditures incurred (US$18.2 million), the repayment of the Nedbank revolving credit facility (US$5.9 million), the payment of finance costs on the Orion PFA (US$2.9 million), partially offset by cash generated from operations (US$21.2 million), and the proceeds received from funding provided by the IDC to build the BELCO electrolyte plant (US$3.4 million).

Equity

The increase in the share capital and share premium was primarily due to the conversion of the convertible loan notes issued to Primorus Investments Plc and the shares issued to Lind Global Macro Fund, in accordance with the backstop agreement between the Mustang convertible loan notes holders (see RNS dated 29 March 2022). These transactions were entered into in the process of carving out Bushveld Energy.

Liabilities

Total borrowings (excluding lease liabilities) of US$83.1 million increased by US$3.2 million compared to the previous year, due to capitalised finance costs of US$11.7 million and funding provided by the IDC of US$3.4 million in respect of Belco, partially offset by the repayment of the Nedbank revolving credit facility of US$5.9 million, repayment of finance costs on the Orion PFA of US$2.9 million and the fair value gain on the derivative liability of US$2.9 million. Current borrowings increased in 2022 to US$47.9 million, as the Orion convertible loan notes is due by the end of 2023.

The net debt reconciliation below outlines the Group's total debt and cash position:

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000	Change US$'000
Nedbank revolving credit facility	–	(5,821)	5,821
Orion Production Financing (PFA) Arrangement	(35,146)	(33,512)	(1,634)
Orion convertible loan notes	(39,742)	(36,282)	(3,460)
Industrial Development Corporation (IDC) loans	(5,480)	(3,282)	(2,198)
Other	(2,762)	(1,000)	(1,762)
Lease liabilities	(7,283)	(4,485)	(2,798)
Total debt	(90,413)	(84,382)	(6,031)
Total debt excluding PFA	(55,267)	(50,870)	(4,397)
Cash and cash equivalents	10,874	15,433	(4,559)
Net debt	(79,539)	(68,949)	(10,590)
Net debt excluding PFA	(44,393)	(35,437)	(8,956)

Net debt increased by US$10.6 million compared to the prior year due to capitalised interest of US$3.4 million on the Orion convertible loan notes, increase in lease liabilities of US$2.8 million due to additional leases and extension of lease terms and the decrease in the cash and cash equivalents balance of US$4.6 million.

The Group expects to repay the Orion debt obligations from internally generated cash flows.

4. CASH FLOW STATEMENT

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

	Year ended 31-Dec-22 US$'000	Year ended 31-Dec-21 US$'000
Operating loss	(20,134)	(29,280)
Impairment losses	23,965	2,439
Depreciation and amortisation	18,475	19,395
Other non-cash items	(6,630)	–
Changes in working capital and provisions	6,154	(5,022)
Taxes received/(paid)	(648)	394
Cash inflow/(outflow) from operations	21,183	(12,074)
Sustaining capital expenditures	(6,589)	(7,192)
Free cash flow	14,594	(19,266)
Cash used in other investing activities	(13,000)	(9,967)
Cash used in financing activities	(5,346)	(7,049)
Cash outflow	(3,752)	(36,282)
Opening cash and cash equivalents	15,433	50,541
Foreign exchange movement	(807)	1,174
Closing cash and cash equivalents	**10,874**	**15,433**

Operating activities

The Group generated cash from operating activities of US$21.2 million, an increase of US$33.3 million from the previous year, primarily driven by the improvement in adjusted EBITDA.

Investing activities

Cash used in investing activities (including sustaining capital expenditure) of US$19.6 million was primarily driven by capital expenditure on property, plant and equipment of US$18.2 million and an equity investment into the Vametco mini-grid of US$1.2 million.

Capital Expenditure

2022 marks the end of a substantive capital investment phase, during which we undertook extensive refurbishment and optimisation of Vametco and Vanchem and constructed the BELCO electrolyte plant. In addition, following the commissioning of Vanchem's Kiln-3, the Company's capital expenditure rate has halved compared to 2021 as spend has been limited mainly to sustaining capital, which is expected to support positive cash generation.

Capital Expenditure (US$' million)

	2022	2023
Vametco		
– Growth		–
– Sustaining	6.5	3.7-3.9
Vanchem		
– Growth	4.5	–
– Sustaining	0.1	3.2-3.4
Bushveld Energy		
– Growth	7.1	2.3-2.4*
– Sustaining	–	–
Total	18.2	9.2-9.7

* Most of the spending will be on BELCO

Financing activities

Cash used in financing activities of US$5.3 million comprised the repayment of the Nedbank revolving credit facility (including interest) of US$5.9 million, repayment of finance cost on the Orion PFA of US$2.9 million and repayment of lease liabilities of US$0.7 million, partially offset by the proceeds received from borrowings of US$4.2 million, primarily from the IDC (US$3.4 million).

5. FINANCIAL RISK

The primary 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 (market risk). These factors are more fully outlined in the notes to the consolidated financial statements. They are important aspects to consider when addressing the Group's going concern status. We proactively manage the risks within our control.

There are, however, factors outside the control of management. These are volatility in the ZAR:US$ exchange rate, as well as the vanadium price, which we do not currently hedge, and which can have a significant impact on the cash flows of the business. The slower than planned ramp up in production at Vanchem has hampered our ability to introduce a hedging policy. However, we remain committed to considering a hedging policy and assessing the potential to implement a strategy to address the fluctuations in the ZAR:US$ exchange rate when we attain steady state production at our operations.

6. GOING CONCERN AND OUTLOOK

We closely monitor and manage liquidity risk by ensuring that the Group has sufficient funds for all ongoing operations. As part of the annual budgeting and long-term planning process, the Directors reviewed the approved Group budget and cashflow forecast through to 31 December 2024. The current cashflow forecast has been 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.

We entered into a non-binding term sheet with Orion subsequent to year-end to refinance the convertible loan notes. The closing of the transaction is still subject to certain conditions, including South Africa Reserve Bank approval, shareholders' approval at the general meeting which we urge shareholders to support and the finalisation of definitive binding documentation. We have made significant progress with the legal documentation of the restructuring.

We have performed an assessment of whether the Group would be able to continue as a going concern for at least twelve months from the date of the annual consolidated financial statement. We took into account the financial position, expected future performance of the operations, the debt facilities and debt service requirements, including those of the proposed refinancing of the Orion convertible loan notes, the working capital and capital expenditure commitments and forecasts.

Current cashflow forecast indicates that the Group requires additional liquidity to fund its obligations and activities during the next twelve months. We have identified and are proactively exercising levers within our control which will improve the Group's liquidity. Importantly, we are also actively pursuing various financing alternatives including raising capital to increase liquidity and capital resources. We believe shareholders will support the capital raising endeavours to ensure the growth the Company is positioned for, can be delivered.

The Group's ability to continue as a going concern is dependent on its ability to complete the refinance of the Orion convertible loan notes and obtain the necessary additional funding required through a capital raise or alternative funding sources. These conditions indicate the existence of material uncertainties that may cast significant doubt on the Group's ability to continue as a going concern.

The consolidated financial statements for the year ended 31 December 2022 have been prepared on a going concern basis as, in the opinion of the Directors, the Group will be in a position to continue to meet its operating and capital costs requirements and pay its debts as and when they fall due for at least twelve months from the date of this report. The going concern note included in the accounting policies provides further information.

Tanya Chikanza
Finance Director
20 June 2023

VANADIUM MARKET OVERVIEW

Vanadium market overview

Vanadium plays a critical role in the world's transition to a low-carbon economy, both through the reduction of carbon emissions from steel production and through its use in utility-scale battery storage solutions. It can be regarded as a crucial metal in facilitating the energy transition that enables a more sustainable world.

The addition of vanadium to steel and rebar has significant sustainability benefits. Vanadium increases the tempering stability of quenched steel and produces a secondary hardening effect, resulting in a stronger product, capable of bearing greater load at high temperatures, and resistant to corrosion, with a low density. In the construction of infrastructure, particularly in comparison to regular steel, far less vanadium micro-alloyed steel is needed for the same purpose, which in turn leads to a significant reduction in carbon emissions from production. This helps to build sustainable cities and communities. The increased strength of vanadium micro-alloyed steel reduces the total global fossil carbon footprint by as much as 0.4 percent[1].

Vanadium is also a key component in VRFBs, which are used as utility-scale, long-duration, energy storage solutions to store intermittent renewable energy from solar and wind generation. It also enables power systems to move away from polluting fossil fuels. Furthermore, VRFBs can be used by electricity transmission and distribution system operators to defer capital investment and improve the efficiency of their power grids are operated. VRFBs help to combat climate change because they produce 27-32 percent less CO_2 emissions than lithium-ion battery technologies[2]. There is potential to reuse the electrolyte or recycle the vanadium at the end of the batteries' long life.

VANADIUM MARKET FUNDAMENTALS

In 2022, the vanadium market performed similarly to many other commodity markets. Prices rose during the first quarter of 2022 owing to continued post-COVID recovery and tightness, particularly in the European market. Vanadium prices spiked in March in response to the Russian invasion of Ukraine, as Russia is the second largest vanadium producer.

Prices started to fall back during the second quarter of 2022 and continued a broadly downward trend during the third quarter of 2022. The downturn reflected soft steel demand, particularly in China, related to the impact of its zero-COVID policy, its faltering property sector, and its depressed construction sector. These factors, together with environmental cuts to production, reduced the country's vanadium demand, given vanadium's exposure to the rebar segment. During the fourth quarter of 2022, prices started to recover, supported by the resumption of steel mill operations after some weeks of maintenance and China's relaxation of its zero-COVID policy.

The decrease in steel demand for vanadium was partially offset by the continued surge in demand from energy storage, especially in China. According to some analysts, energy storage demand accounted for about eight percent of all vanadium consumed in China and for the first time surpassed the demand for other vanadium applications, such as chemicals and non-steel alloys[3].

On the supply side, surging inflation in most countries, other than China, has had an impact on vanadium production costs.

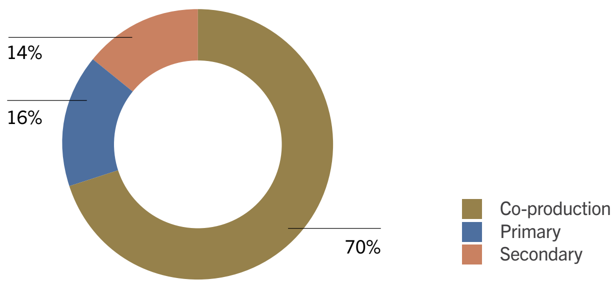
1. Vanitec, 2022
2. Project Blue, April 2023
3. Pangang market data, 2023
4. Guidehouse and EV Tank

Supply

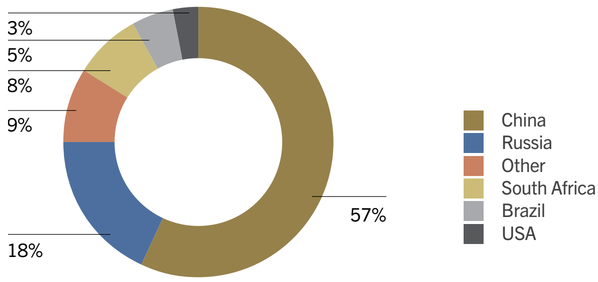
Vanadium production is estimated to have dropped by 6.6 percent to 113,370t from 117,274t in 2021[2], due to the reasons mentioned.

Like most ferroalloys, vanadium is largely exposed to the market characteristics of steel and specifically to the Chinese steel industry. Total world crude steel production was 1,878.5 Mt in 2022, a 4.2 percent decrease compared to 2021. As a result of China's zero-COVID policy, together with its faltering property and construction sectors, its crude steel output was down 2.1 percent in 2022, with the country accounting for 54 percent of global production. The Russia/Ukraine war had the largest impact on production outside China in 2022, with output in the Commonwealth of Independent States regions down 18.7 percent. Europe also saw sharp declines of just less than 10 percent year-on-year, with the war in Ukraine contributing to rising costs and concerns over energy prices. Steel production and consumption in developed countries has also been impacted by a deteriorating macro environment as supply disruption concerns earlier in the year gave way to demand destruction fears in the second part of 2022.

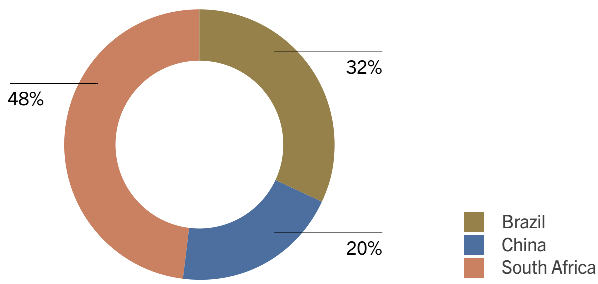
2022 Production by source



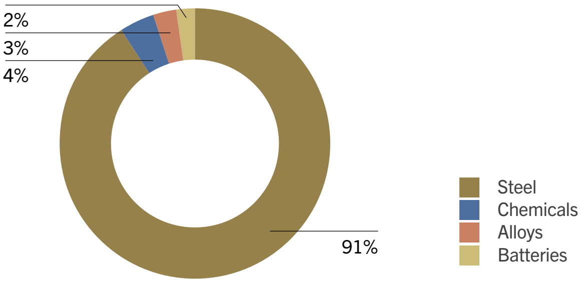
2022 Production by country



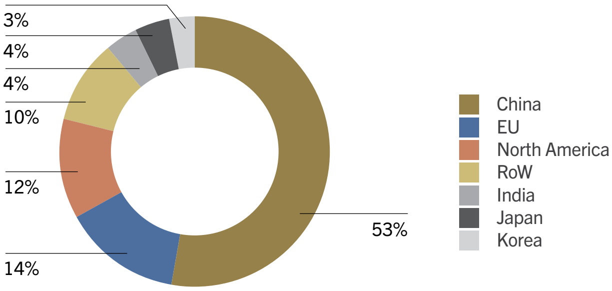
2022 Primary production



2022 Consumption by sector



2022 Consumption by country



Opportunities for growth in vanadium supply can be considered in two categories: capacity expansions from current producers and recommissioning of mothballed production plants. On a longer-term, perspective, new supply will be required to meet the rising demand expected to come from the VRFB sector. This new supply could come either existing producers or from greenfield projects which are, for the vast majority, are still in their early phases of development.

Demand

Global vanadium consumption dropped by approximately five percent to 112,573t in 2022 from 118,422t in 2021[2]. Increased vanadium demand in steel applications is not only a factor of higher steel output, but because the intensity of vanadium usage in steel has increased over time. China's vanadium usage intensity still lags behind that of developed economies, suggesting more support for demand in future, even in a market expecting Chinese steel output to have peaked.

The VRFB sector has created an additional rapidly growing market for vanadium. In 2022 alone, VRFBs proportion of vanadium consumption in the global market increased to 5.3 percent from 2.7 percent in 2021. It has become the second largest user of vanadium after steel. In China, Dalian Energy Storage Power Station, which was completed in November 2022, has a battery storage capacity of 400 MWh. This is expected to double, bringing capacity to 800 MWh, and supporting 200,000 residents with their daily electricity needs. Construction has started on a 1,000 MWh VRFB in Xinjiang which will be completed by the end of 2023. These developments are part of over 3 700 MWh of VRFB projects either built or announced in China over the last 18 months. Project Blue estimates that about 8 percent of the vanadium consumption came from the VRFB sector in 2022.[3] Several forecasting agencies expect China's VRFB market to grow at 30-50 percent per annum through 2030[4].

	Overview	Upside	Downside
Short-term outlook[2]	Vanadium market is expected to stabilise, with an improvement in the Chinese property market only expected in late 2023. The bright spots for demand are aerospace and VRFBs. Demand in the USA is expected to remain relatively robust, while the outlook for European consumption appears more subdued, with macro risks, a perduring conflict in Ukraine and potentially volatile energy costs towards the end of the year. Global supply appears adequate, while inventories have been declining since the end of the first quarter of 2023.	Geopolitics impacting supply. The announcement of multiple large-scale VRFB projects and/or stronger global demand, owing to an improved macro-outlook. Any stimulus announcement by China could have a positive impact of the property market and on the construction sector.	China's growth expectation is clipped by a resurgence of COVID or geopolitical/economic factors. Global inflation/macro environment pushes down demand in the rest of the world. Lower-than-expected demand from the battery sector.
Medium-term outlook[2]	The market is expected to grow at a CAGR of 4.7 percent. Demand for vanadium in steel is set to increase at 3.6 percent per year, supported by higher intensity of vanadium use. 35 percent per year growth in VRFBs to 2028, with demand to be driven by China.	Geopolitics impacts supply. The announcement of multiple large-scale VRFB projects. Higher-than-expected steel output in China increases demand.	Commercialisation of VRFBs fails to materialise, reducing demand. Chinese steel curbs or macro-related factors reduce demand further. High-case scenario secondary material or higher coal stone output causes over-supply.
Long-term outlook[2]	Demand from the steel sector is expected to increase at a CAGR of 1.5 percent, underpinned by increased intensity of vanadium use in steel, in China and in developing countries. Steady commercialisation of VRFBs from the mid-2020s onwards, growing in scale over the net-zero horizon, which will result in a long-term CAGR of 12.6 percent.	Geopolitics further impacts supply. VRFBs ramp up at a faster-than-expected rate. New applications for vanadium are discovered and add demand pressures.	Commercialisation of VRFBs fails to materialise, reducing demand. Higher-than expected drops in steel and micro-alloy demand. A few large-scale projects add to supply, flattening the cost curve and stabilising prices.

These trends will require more capacity from producers, with current estimated feedstock capacity likely to be insufficient by the end of the 2020s. New capacity will be required, both from existing producers and new projects to meet the growing vanadium demand. With the vanadium demand coming from steel expected to rely primarily on intensity rather than on volume, the main medium and long-term industry driver will be the VRFB market with upside, should the technology expand faster than expected and downside should alternative storage technologies develop a competitive advantage to VRFBs.

3. Pangang market data, 2023
4. Guidehouse and EV Tank

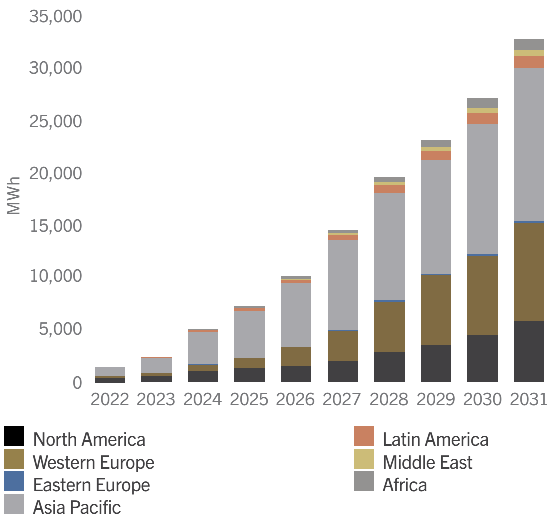
Vanadium Redox Flow Batteries in energy storage

Stationary energy storage is essential to support growth in electricity demand while the world transitions to carbon neutrality. It is now one of the most dynamic and rapidly advancing sectors in the broader technology industry.

TECHNOLOGY

The VRFB is the simplest and most developed flow battery in commercial operation. VRFBs have a long lifespan, low operating costs, are safe and have a low environmental impact in manufacturing. The vanadium used in the batteries can be reused or recycled easily.

Annual Installed Utility and Commercial and Industrial VRFB Deployment Energy Capacity by Region, All Application Segments, World Markets: 2022-2031



Source: Guidehouse Insights, 2022

Commercialisation of VRFBs is accelerating despite misconceptions and comparisons based on upfront, rather than lifetime, costs especially compared to the entrenched position of lithium-ion batteries. Increasing understanding of the technology, reaching economies of scale in supply chain and developing innovative funding solutions are starting to overcome these barriers. The ability to recycle the vanadium or reuse the entire electrolyte in a VRFB creates an opportunity for solutions such as electrolyte rental. These solutions will accelerate adoption of VRFBs at utility scale by reducing the upfront capital costs, while creating new economic opportunities for vanadium producers.

OUTLOOK FOR VRFBs

Global deployment of VRFBs is starting to accelerate, due to increasing demand for long-duration energy storage. According to Guidehouse Insights, the market already exceeds 1 GWh per annum, with Asia Pacific leading. By 2031, it is estimated that Asia Pacific will reach around 14.5 GWh of annual VRFB energy capacity, out of a global demand of 32 GWh[1].

China is leading the way in VRFBs, and currently accounts for 95 percent of the global market. Its growth is a direct result of policies aimed at diversifying the technologies used to store energy. Chinese policies explicitly favour deployment of VRFBs and establishment of supply chains, such as VRFB assembly and vanadium electrolyte production, leading to innovation, manufacturing scale and cost decreases. China already has nearly a dozen local VRFB companies.

Over 3,700 MWh of VRFB projects have been announced in China over the last 18 months, and a recent white paper published by independent research institute EVTank, forecast that China's cumulative VRFB installed capacity will reach 24 GW by 2030[2]. This is in line with China's objective to reach a peak emission level in 2030 and being carbon neutral by 2060.

Supply chain development is not limited to China. The Dutch metallurgical company, AMG, announced a six million litre electrolyte plant in Germany and a partnership with Shell to build a vanadium processing facility in Saudi Arabia that will include an electrolyte plant. In Australia, the government has included vanadium mining and processing under its US$1.3 billion Modern Manufacturing Initiative, which will include construction of an electrolyte plant. The USA and EU consider vanadium to be a critical material, and the recent Inflation Reduction Act is expected to further support the growth of the VRFB supply chain in the USA. In the EU, a preliminary agreement set in 2023 raised the renewable energy target from 32 to 42.5 percent by 2030.

BUSHVELD MINERALS' ROLE

Bushveld Minerals remains bullish on energy storage demand in Africa and South Africa leading that growth, although recent reductions in local content requirements for public procurement and minimal policy support for vanadium-based value chains when compared to other countries may adversely impact the competitiveness of VRFBs.

- Bushveld Energy's development of the 3.5 MW solar PV plus a 1 MW/4 MWh VRFB hybrid mini-grid project for Vametco, the first of its kind in South Africa, demonstrates the case for VRFBs in energy storage. This project will serve as a VRFB reference site for the mining industry, utilities and other power users, and showcase the technological and commercial benefits of long-duration VRFB systems coupled with renewable energy.
- The Department of Mineral Resources and Energy (DMRE) and Independent Power Producers (IPP) Office have noted stand-alone storage procurement of 513 MW in standalone, privately financed energy storage, over five sites. A further 1,231 MW has also been officially announced which is to follow the award of the first 513 MW.
- Eskom's battery procurement programme for 350 MW/1,600 MWh is under way, with 199 MW/833 MWh already awarded.
- Many municipalities and private customers, especially mining companies, are increasingly considering storage to offset loadshedding, with regulation of self-supply of electricity having been reduced.

Bushveld Minerals has positioned itself to support vanadium's role in the energy transition. Its vertical integration strategy combines primary vanadium mining, beneficiation, and downstream energy storage businesses to drive adoption of VRFBs.

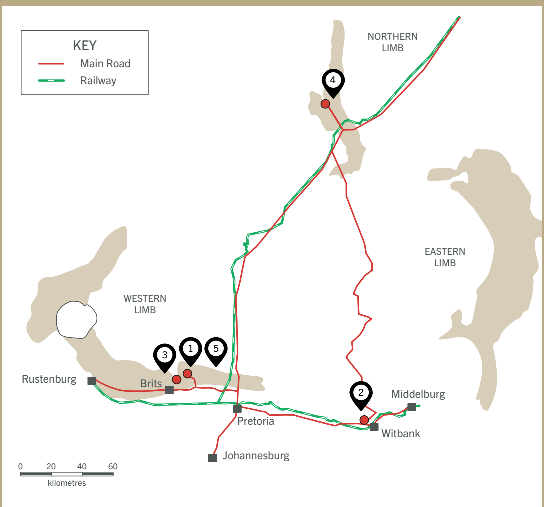
1. Guidehouse Insights, 2022.
2. Fastmarkets, Vanadium redox flow batteries: a new direction for China's energy storage?, November 2022.

Operating assets and operational review

Bushveld Minerals owns three mineral assets: the Vametco mine, the Brits resource and the Mokopane project. Together, the three deposits constitute a 546 Mt (100 percent basis) JORC-compliant resource, including 75 Mt (100 percent basis) of JORC-compliant reserves.

The Group's principal vanadium processing facilities are the Vametco processing plant (Vametco) and the Vanchem plant (Vanchem). Vametco is an integrated mining and processing plant located eight kilometres north-east of Brits in South Africa's North West Province. It operates an open-pit mine that supplies ore to a vanadium processing plant located on the same property. Vametco produces Nitro Vanadium, ammonium metavanadate and modified vanadium oxide.

Vanchem is a primary vanadium-processing facility at the Ferrobank Industrial Park in Emalahleni Local Municipality in Mpumalanga Province. It produces vanadium pentoxide, ferrovanadium and vanadium chemicals, and is capable of producing vanadium trioxide.

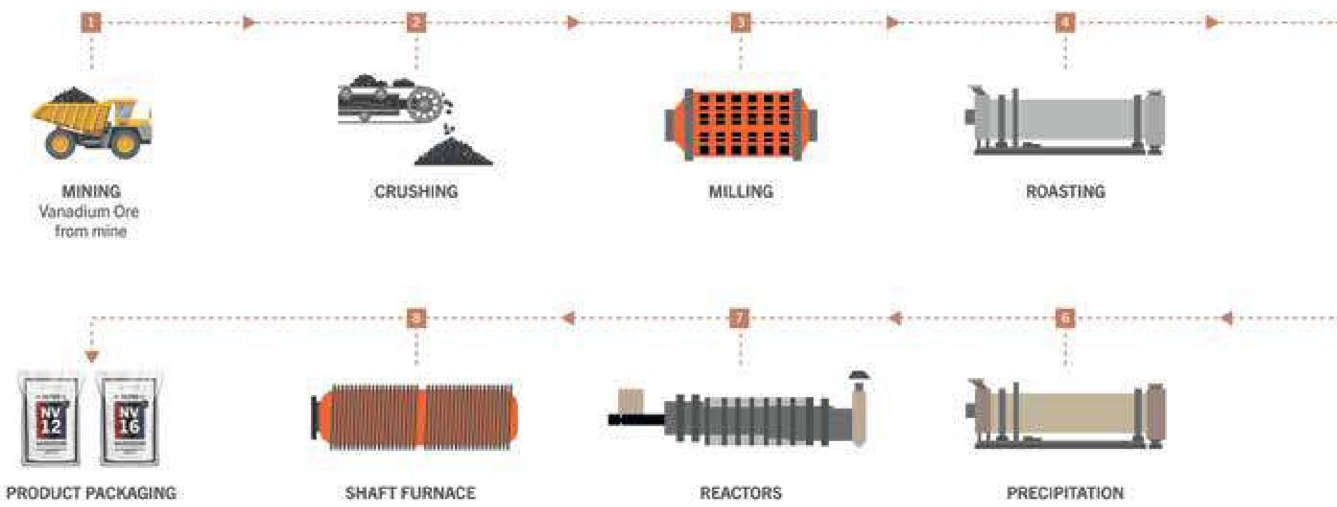


1. Vametco mine and plant
2. Vanchem plant
3. Brits resource
4. Mokopane project
5. Vametco mini-grid

PROCESSING

Vametco's processing plant receives ore from the co-located Vametco mine. Vametco utilises the standard salt-roast and leach process to produce a steel-alloying vanadium carbon nitride product called nitro vanadium. Vanchem's ore supply is a blend between the Vametco Upper Seam project and third-party ore, and also utilises the salt-roast beneficiation process. During the first half of 2023 a new supply agreement for lower-silica ore than the Upper seam ore, was agreed at Vanchem with a third party, and it is anticipated to allow for higher recoveries, resulting in a more stable production rates at no additional costs.

The process stages are shown in the below diagram.



2022 VAMETCO AND VANCHEM OPERATIONAL PERFORMANCE AND 2023 GUIDANCE

Table 1: Operational highlights for Vametco and Vanchem (on a 100 percent basis)

Description	Unit	2022	2021	2021vs 2022
Group Production	mtV	3,842	3,592	7.0%
Group weighted average production cash cost[1]	US$/kgV	27.7	26.1	6.1%
Vametco weighted average production cash cost[1] (C1)	US$/kgV	23.7	24.0	-1.3%
Vanchem weighted average production cash cost[1] (C1)	US$/kgV	37.2	30.6	21.6%

1. Includes direct costs of production. Excludes depreciation, royalties, movements in finished goods inventories and selling, general and administrative expenses.

Group Production for 2022 of 3,842 mtV was below the revised guidance of 3,900-4,100 mtV. Although Vametco's production of 2,705 mtV exceeded the upper end of guidance of 2,550 mtV-2,650mtV, Vanchem lost approximately 200 mtV during the second half of 2022 due to electricity load shedding. Vanchem's performance was further impacted by a slower-than-anticipated ramp-up of Kiln-3 post commissioning, and higher silica content in the ore supply which resulted in further unplanned downtime.

Production guidance for 2023 is between 4,200 mtV and 4,500 mtV, with volumes weighted towards the second half of 2023. Weighted average Group production cash cost (C1) guidance is between US$26.1/ kgV and US$27.0/kgV, (ZAR447/kgV and ZAR438/kgV).

BRITS

The Brits 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 cost-effective source of near-surface ore for the Vametco plant.

MOKOPANE

Mokopane is located on the central portion of the northern limb of the Bushveld Complex. The project includes one of the world's largest primary vanadium resources, with an average grade of 1.80 percent V_2O_5 in-magnetite.

An Ore Reserve of 28.56 Mt of Main Magnetite Layer mineralisation was estimated as mineable, supporting a minimum 30-year life-of-mine.

BUSHVELD ENERGY

Bushveld Energy is 84 percent owned by Bushveld Minerals. It was established to drive the positioning of VRFBs as a superior grid storage technology and their greater adoption in the global energy storage market. The company's activities along the value chain are described below.

VANADIUM ELECTROLYTE MANUFACTURING

Electrolyte manufacturing

BELCO is located in East London, South Africa. It is 55 percent owned by Bushveld Energy and 45 percent by the IDC. Its targeted initial capacity is eight million litres of vanadium electrolyte per year (each litre of vanadium electrolyte will contain between 82 and 92 grams of vanadium, with the plant using over 1,100 tonnes of vanadium oxide equivalent at full production). It is able to scale up to 32 million litres at the same location. This electrolyte plant is the largest publicly-announced electrolyte plant outside of China.

The plant is designed to take vanadium oxide from Bushveld's Vanchem operation as the preferred feedstock provider. Oxide from Bushveld Vametco or non-Bushveld suppliers may also be used. Construction and cold commissioning of the electrolyte manufacturing facility was completed during the first quarter of 2023 and hot commissioning commenced during the period. The plant is expected to be in operation during the second half of 2023. Further progress is being made in the qualification process with manufacturers to use the plant's electrolyte. We are not providing any production guidance at present, as production will be guided by sales and offtake contracts with OEMs with whom we are holding ongoing discussions. The below diagram outlines BELCO's process flow-sheet.

Electrolyte rentals

Given the recyclable capability of vanadium electrolyte, Bushveld Energy has partnered with various entities to pioneer the structure, design, and supply of vanadium electrolyte rental products for VRFBs. We have signed a 25-year lease agreement to rent 4 MWh of vanadium electrolyte to the Vametco mini-grid independent power producer (IPP) company. This project is currently under construction.

The strategic intention is to scale-up the rental product through an off-balance sheet funding structure to match the global growth in energy storage and VRFBs. The structure is innovative and it provides investors with an annuity-type income and secure collateral in the form of vanadium. With the increasing importance of the circular economy, interest in such innovative mineral financing is growing.

VRFB manufacturing

We intend to play a catalytic role in mobilising third-party capital to help VRFB OEMs scale up their sales and capacity to meet the fast-growing demand for long-duration energy storage solutions. We hold a stake in CellCube, a grid scale and micro-grid energy storage battery manufacturer, headquartered in Austria. We have leveraged our investment to mobilise more third-party capital into these companies.

CellCube's recent developments

- CellCube has signed a strategic manufacturing co-operation agreement with North Harbour Clean Energy Pty Ltd to build an assembly and manufacturing line in Eastern Australia to meet demand for long-duration energy storage in the national electricity market. The first project executed by the partnership will be developing the continent's largest VRFB, which will generate 4 MW/16 MWh, based on CellCube's proprietary technology.
- Enerox and G&W Electric have signed a strategic partnership to offer resilience and cost savings to the rapidly expanding micro-grid market in North America. The partnership was initiated through G&W Electric's construction of its own state-of-the-art micro-grid located in Bolingbrook, Illinois, USA with solar energy generation coupled to CellCube's latest battery technology.

Bushveld Energy and the IDC started investigating the business case for VRFB manufacturing in South Africa, following the model of our shared research into the manufacture of vanadium electrolyte. This investigation included a third-party competitiveness assessment that was completed during the period under review.

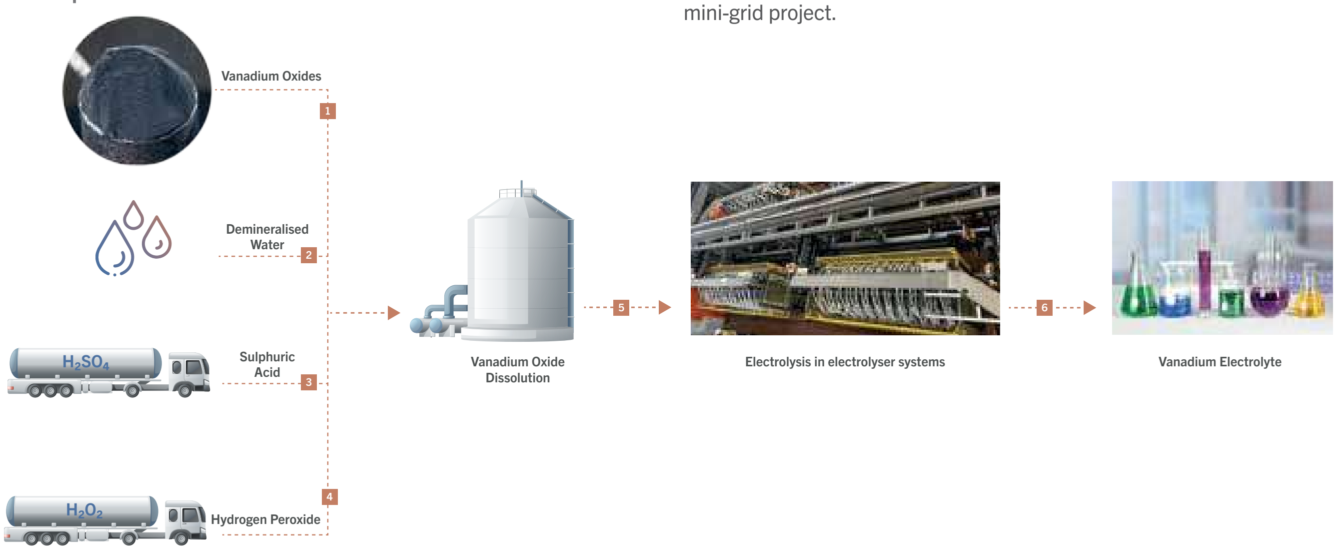
During the first quarter, we successfully defended the litigation initiated in 2021 by Garnet Commerce Limited, our joint venture partner in CellCube, against VRFB-H and Enerox, concerning an alleged breach by VRFB-H of the joint venture agreement in relation to Enerox. The success in defending the litigation, which challenged the indirect investment by Mustang into Enerox, means the indirect investment by Mustang into Enerox remains in place.

Deployment of VRFBs

The Vametco mini-grid

Bushveld Energy has developed a commercial solar plus storage mini-grid project for Vametco, with 3.5 MW of solar PV and 1MW/4 MWh VRFB. The mini-grid is a funded IPP. Construction of the mini-grid is at an advanced stage and it is expected to be in operation during the second half of 2023. The total cost is ZAR113 million (approximately US$7.25 million) and the Engineering procurement and construction is provided on a turnkey basis. The mini-grid is owned and co-funded by Bushveld Energy and NESA Capital. NESA holds 60 percent of the equity in the project and we hold the remaining 40 percent. We received a development fee as revenue from the project upon financial close in June 2022. ABSA Relationship Banking approved a ZAR64 million (approximately US$4.1 million) loan to part-fund the construction of the mini-grid project.

BELCO process flow-sheet



This will be one of the first solar mini-grid projects in Africa and currently the largest with long-duration storage financed from the customer's balance sheet as a stand-alone project. When complete, it will supply over 10 percent of Vametco's electrical energy and will demonstrate the technical and commercial capability of hybrid mini-grids using solar PV and VRFB technology at grid parity pricing. Vametco sold 26 mtV to produce electrolyte for the VRFB, but has not used any of its own capital for the project. The battery, supplied by CellCube, was delivered and installed during the second quarter of 2023. Installation of the solar PV plant is ongoing but had been slowed due to unseasonably high rainfall. The entire project is expected to be fully operational during the second half of 2023

The hybrid mini-grid project will contribute towards reducing the carbon footprint of Bushveld's mining and processing operations, cutting CO_2 emissions by more than 8,000 metric tonnes per year (and nearly 200,000 tonnes over the 25-year life of the project). This will be a positive contribution towards South Africa's low-emission strategy and Bushveld Minerals' ESG objectives.

The project won Power Project of the Year at the South African National Energy Association (SANEA) awards in 2022, due to the number of in-country firsts the project has achieved.

Captive opportunities

Bushveld Energy is targeting captive opportunities within the Group of upto 120 MW of PV and 180 MWh of storage. These projects will also reduce the Group's reliance on the power grid, help to contain energy costs, and reduce the carbon footprint of vanadium production, as part of a broader, long-term ESG strategy.

These opportunities include a Phase 2 power plant at Vametco, where a scoping study is under way to assess output of 100-300 MW of solar PV plus a 15 MW/60 MWh VRFB to be built on site. Any excess power could be wheeled and sold to Vanchem, another grid-connected electricity customer or to one of the emerging electricity traders.

At Vanchem there is no capacity for self-generation due to site constraints. We are currently assessing options for deploying a VRFB at Vanchem and have begun exploratory talks with the municipality about wheeling power from elsewhere to Vanchem.

Update on the carve-out

In June 2022, Bushveld Minerals announced our intentions to carve-out Bushveld Energy. We believe that this will help to crystallise the value of Bushveld Energy and position it in the capital markets.

In November 2022, Bushveld Energy entered into a conditional agreement to sell its entire 50.5 percent interest in VRFB-H to Mustang. VRFB-H own 100% of EHL, which in turn owns the entire issued share capital of Enerox (also referred to as CellCube).

The transaction is an important step in carving out Bushveld Energy from the Bushveld Minerals Group. On the assumption that all the steps of Mustang's acquisitions are achieved, Bushveld Minerals will hold an interest of between 21 percent and 23 percent in Mustang and hence CellCube. Bushveld Minerals' holding in Mustang allows it to retain its vertical integration proposition.

To ensure closer alignment of all vanadium operating facilities, the BELCO electrolyte plant will remain within Bushveld Minerals, both operationally and in ownership, after the Bushveld Energy carve-out.

NON-CORE INTERESTS

The Company holds some non-core assets. It continually reviews its options for these assets, which may include divestment, sale or closure. No further work is planned on these projects while we advance our vanadium platform.

1. Lemur Holdings

Lemur Holdings is developing an integrated power project, the Imaloto Power Project, in Madagascar. It is at an advanced stage of development, with a completed definitive feasibility study (DFS) for the mine. The Imaloto Coal Project was impaired during the year as no further expenditures were budgeted. Further details can be found in Note 13 of the Financial Statements.

2. The PQ Iron & Titanium Project

The PQ Iron & Titanium project is a multi-commodity project on the same licence area the Mokopane project. Progress to date has been limited to understanding the project's economic parameters.

Principal risks

RISK MANAGEMENT

In 2021, Bushveld Minerals instituted a risk management strategy to gradually improve and position the Company so that we can achieve a mature risk culture, operate risk-intelligently and optimise value by 2025. The strategy evolves and matures continually to ensure that risk management is firmly embedded throughout the Company and is aligned to our overall strategic objectives.

The Company has adopted the ISO 31000 Enterprise Risk Management (ERM) Framework, and accordingly our risk management strategy is underpinned by the principles contained in ISO 31000 (2018) of value creation and protection.

Risk management is one of the core responsibilities of the Board and Management, and it is central to our decision-making processes. The Board and Management have the following primary responsibilities in relation to risk management:

- making a robust assessment of emerging and principal risks;
- continuously monitoring risk management and internal controls and;
- embedding and promoting a risk-aware culture within the Group.

Understanding our risk management information and how it links to our strategic objectives and goals, including the investment case, is essential. Our risks are categorised and linked to the Company's strategy and objectives. We evaluate the risks in terms of likelihood (probability) and impact (consequence), and they are then ranked high, medium, or low. This enables us to prioritise the principal risks, and appropriately allocate the resources and effort to effectively and efficiently manage the risks.

OUR ERM ROAD MAP

2021

Basics – Risk Management

- ERM Framework (formalise and structure)
- Basic risk assessment (high level)
- Principal risks identification (Top 10)

2022

ERM Formalised & Structured

- Customised – ERM Framework and policy
- Leadership and commitment – ERM
- Review of principal risks (Board)

We are here

2023

Risk Awareness

- Introduction – Risk management process
- Governance structure, system and culture
- Assess the risk management process

2024

Improvement & Insight

- Improve the risk management process
- Align strategy, risk and decision-making
- Define risk tolerance and acceptance levels

2025

Integration & Optimisation

- Integrate – Risk to decision making
- Influence value protection and creation
- Automate and optimise risk management

PRINCIPAL RISKS

Principal risk refers to a risk or combination of risks that could materially affect the performance, future prospects or reputation of Bushveld Minerals today or in the near future and have their origin both inside and outside the Company. Principal risks comprise those which could threaten the Company's solvency, liquidity, performance, strategic objectives, and its business model.

Principal risks, by their nature, could individually or collectively have material and adverse effects on the Company, prior to any mitigating controls. They emanate from the worst-case scenario, without regard to probability, and assuming all risk controls are ineffective.

Our focus for principal risks is to prevent their occurrence or minimise their impact should they occur, but we also consider how to maximise possible benefits that might be associated with strategic risks. Principal risks are evaluated at least once a year, to determine whether our exposure to them is within our risk appetite.

RISK CATEGORIES

Consistent with the prior year, we have categorised the 10 principal risks according to the following categories:

Risk Categories	
(E)	Economic
(S)	Strategic
(O)	Operational

The risk categories are supported by various sub-categories, and also link to Company strategy.

Strategic categories	
S1	Sustainable high-grade vanadium mines
S2	Low-cost primary vanadium production plants
S3	Vanadium-based energy storage platform

OPPORTUNITIES

In addition, we have identified the following key opportunities, in line with our strategy and investment case:

- Potential to disrupt the power storage industry with a sustainable battery solution;
- Strong position and capacity in primary vanadium production;
- Opportunity to strategically position ourselves in the South African market, owing to Eskom's challenges; and
- Sustainable low-carbon power storage solution at reasonably low cost.

The following pages provide a detailed analysis of our principal risks, strategy link, risk appetite and mitigation measures.

PRINCIPAL RISKS *CONTINUED*

	Nature of risk	Risk category	Risk rating	Mitigating action
1. FUNDING WORKING CAPITAL AND DEBT **S1 AND S2**	Global market volatility affecting demand and commodity prices: – A significant decrease in vanadium commodity prices. – Adverse changes in global demand.	(E)	High	– Managing operations efficiently and cost-effectively. – Commodity prices monitored on a regular basis. – Significant portion of Bushveld's sales are frame contracts, ensuring sufficient level of production is on offtake. – Operational flexibility, enabling a wide spectrum of vanadium products and developing a broad global market strategy. – Global vanadium market movements monitored on a daily basis – arbitrage pricing differences across markets and products. – Reducing surplus finished goods stock levels to generate additional cash.
	– Growing trade protectionist policies in key markets.	(E)	High	– Close and regular monitoring of international legislation. – Diversification of products and targeted international markets. – Proactive engagement with policymakers in high-priority markets.
	Volatile exchange rate: – Significant strengthening of the exchange rate.	(E)	Medium	– Managing our operations to the lowest cost levels possible. – Current and forecast exchange rates monitored daily. – Hedging considered as a mitigating strategy, if exchange rates fall below specific thresholds.
	Going concern issues may materialise in event of: – Missing budgeted production, sales and costs. – Depleting cash resources due to debt servicing.	(E)	High	– Robust budgeting processes and regular monitoring of performance against budget. – Cost containment measures and controls in place and prioritisation of expenditure. – Funding options reviewed and alternative funding mechanisms proactively explored. – Regular dialogue with debt funders.
	Servicing of the debt obligations.	(E)	High	– Regular monitoring of the working capital and payments requirements to ensure compliance. – Regular communication with lenders. – Robust budgeting and cash flow forecasting processes to meeting the required payments.
2. ENVIRONMENTAL, SOCIAL AND GOVERNANCE **S1 AND S3**	Compliance with legislation: – Mokopane Project water use licence (WUL) application not lodged. – Mokopane Project has not commenced mining a year after receiving mining right, and DMRE approval for extension is outstanding. – Vanchem WUL lapsed in February 2022.	(S)	High	– Ongoing engagement with communities. – Ongoing engagement with the DMRE. – Groundwater feasibility conducted to determine groundwater availability. – Application for non-compliance with Mineral and Petroleum Resources Development Act (MPRDA) Section 25 lodged with DMRE. – Amendment and renewal of Vanchem WUL to the Department of Water and Sanitation (DWS) completed. Awaiting the department's response to the application.
	– Lack of governance frameworks and policies, and compliance.	(S)	High	– Corporate governance framework has been developed. – Regulatory compliance framework in place. – Continuous monitoring and review on compliance with the established policies.

Risk Category: (E) Economic (S) Strategic (O) Operational

	Nature of risk	Risk category	Risk rating	Mitigating action
2. ENVIRONMENTAL, SOCIAL AND GOVERNANCE CONTINUED	– Community protest action or social unrest by communities due to unhealthy relationships.	(S)	High	– Building trusted relationships with the stakeholders, including host communities.
	– Unreasonable procurement and employment demands by local communities.	(S)	High	– Proactive and frequent consultations and engagement with the local communities. – Stakeholder engagement strategy in place.
	– Non-compliance with minimum emission standards ("MES") at Vanchem and Vametco.	(O)	High	– Kiln off-gas system has been installed and commissioned. – Application lodged for postponement to comply with MES for Vanchem and awaiting National Air Quality Officer response. – Maintenance of pollution abatement system. – Ongoing stack monitoring to monitor compliance with MES and/or atmospheric emission licence.
	– Groundwater pollution.	(O)	High	– Groundwater pollution modelling completed. – Ongoing monitoring of groundwater quality. – Capital plan to implement groundwater remediation plan for Vametco. – Multi-stakeholder engagement to address groundwater remediation at Vanchem. – Lining trenches transporting hazardous spillages into storage dams. – Operate pollution plume boreholes at maximum capacity – net increase in water balance at Vametco.
3. LICENCE TO OPERATE (SOCIAL) **S1**	– Compliance with Mining Charter III Transitional Plan and MPRDA. – Social unrest by communities due to unhealthy relationships. – Adverse actions by government or communities resulting in project delays, loss of licences or permits. – Unreasonable demands by the local communities.	(S)	High	– Regular engagement with DMRE relating to Social and Labour Plan implementation. – Building trusted relationships with stakeholders, including host communities. – Stakeholder engagement strategy in place. – Proactive and frequent consultations and engagement with stakeholders, including communities.

	Nature of risk	Risk category	Risk rating	Mitigating action
4. OPERATIONAL PERFORMANCE **S1 AND S2**	– Plant and equipment breakdowns causing production delays. – Quality of Vanchem feedstock. – Vanchem Kiln-3 production targets not met because of ramp-up challenges.	(O)	High	– Regular monitoring and constant review of planned versus actual performance. – Prioritised and revised plant and equipment maintenance strategy in progress. – Daily monitoring and proactive response to breakdowns. – Prioritising repairs and maintenance. – Capital allocated for refurbishment and maintenance. – Management monitoring and supervision.
	– Unprotected strikes and actions. – Legacy issues with labour unions may lead to unprotected industrial action.	(O)	High	– Proactive stakeholder strategy in place resulting in frequent consultations and engagement with stakeholders, including communities. – Continue embedding a partnership culture and proactively engage with unions, in line with our employee relations (ER) strategy. – Addressing legacy and historical practices with organised labour. – Long-term wage agreements finalised.
	– Unavailability of raw materials and ore material and/or poor-quality raw material/ore.	(O)	High	– Contracts in place with the suppliers of raw material. – Inventory monitoring systems and controls in place to monitor raw materials and ore. – Quality monitoring and controls in place.
	– Low or poor recovery performance.	(O)	High	– Continuous monitoring and control of the performance and recovery by the plants.
	– Off-grade production by the plants.	(O)	Medium	– Quality controls in place to monitor the product through the production process.
	– Increased costs.	(O)	High	– Cost-focused steering committee to monitor and control cost items. – Dedicated procurement programme that prioritises contract spend over free spend.
5. ELECTRICITY SUPPLY AND COSTS **S1 AND S3**	– Unstable electricity supply from local municipality at Vanchem.	(O)	High	– Engagement with Eskom and government to create a direct Eskom supply. – Electricity supply arrangement in place with the Vanchem local municipality.
	– Excessive price increases for the electricity from the supplier (Eskom).	(O)	High	– Stand-by generators and countermeasures in place in the case of loadshedding.
	– Eskom grid constraints, loadshedding, curtailment, and rising diesel costs for running generators.	(O)	Medium	– Development of self-generation options, including on-site energy storage for all facilities.
6. HUMAN CAPITAL (TALENT) **S1**	– Inability to retain and recruit talent among non-bargaining unit staff in light of highly competitive remuneration packages in the market, as well as wider work/life balance choices post-pandemic.	(S)	High	– Continue embedding the Group-wide culture programme and our values to establish the Bushveld way across the operations. – Integrate talent management and succession planning Group-wide into the business. – Continually review our working model to improve our hybrid model, where practical. – Review and communicate our employee value proposition. – Benchmarking compensation against the market on an annual basis to identify any gaps in compensation.

Risk Category: (E) Economic (S) Strategic (O) Operational

	Nature of risk	Risk category	Risk rating	Mitigating action
7. DEVELOP PRODUCTS FOR ENERGY TRANSITION **S3**	– Slow pace of developing products to demonstrate proof of concept in time to respond to the energy transition.	(S)	High	– Secured the funding for Vametco mini-grid. – Regular review of the market and continual raising of awareness. – Regular monitoring of products. – Partnership strategy that reduces the cost and risk to the Group while increasing the number of participants in the technologies and products supported by the Group.
8. SAFETY **S1**	– Compliance with safety and health processes and protocols.	(O)	High	– Rigorous safety and health protocols implemented and observed. – Continuous monitoring of leading and lagging indicators. – Rigorous pre-employment medical examinations, pre-entry medical examination of contractors, continuous medical examination and exit medical examination by occupational medical practitioner. – Safety given high priority in performance targets of all staff.
	– Insufficient plant maintenance contributes to an unsafe workplace and more safety incidents.	(O)	High	– Increased safety awareness and campaigns. – Regular and continuous safety briefings. – Safety protocols strictly maintained and obeyed. – Improved adherence to maintenance plans.
	– Non-compliance with tailings Storage facility factor of Safety (FoS) at Vametco.	(O)	Medium	– Install central penstock to improve pool/ beach control – Implement recommendation of the tailings storage facility FoS report. – Design and construct buttress.
9. PLANT & EQUIPMENT MAINTENANCE **S1 AND S2**	– Plant and infrastructure maintenance backlog.	(O)	High	– Capital prioritised for refurbishment and maintenance of plant and equipment. – Plant and infrastructure maintenance prioritised during stay-in-business planning. – Planned annual plant shutdown executed and conducting routine maintenance and repairs.
	– Lack of capital to perform the necessary maintenance.	(E)	Medium	– Robust budgeting processes and regular monitoring and prioritisation of maintenance.
	– Reactive asset maintenance and scheduling.	(O)	Medium	– Asset management strategy being developed. – Asset register in place.
10. SUPPLY CHAIN DISRUPTION **S1 AND S3**	– Disrupted domestic and international logistics channels, including the effects of Russia/ Ukraine war and COVID-19.	(S)	High	– Maintaining minimum stock levels and managing inventory levels at various global warehouses. – Careful pre-planning of product shipping and identifying multiple export channels.
	– Long-lead time in delivery of our product to customers, and receipt of cash payment.	(S)	Medium	– Regular review of market conditions and continually raising awareness. – Continually monitor stock levels throughout the supply chain.
	– Global market volatility, resulting in supply chain disruptions.	(S)	High	– Strategic partnership and agreements with service providers, clients and customers.

The global pandemic risk has fallen off the top 10 principal risks in 2022. It has been replaced by supply chain disruption as the new and emerging risk, following the conflict between Russia and Ukraine, and potential conflict between China, the USA and Europe.

OUR VISION FOR A GREENER FUTURE

To become one of the leading vanadium-focused companies through our vertically-integrated platform. We are committed to being a key player in the transition to a low-carbon economy, being a social partner for good by creating shared value, while meeting growing vanadium demand from the global steel and energy storage industries, through our diverse portfolio of products.

OUR MISSION

Create value in a safe and sustainable way through a true partnership with all our stakeholders, especially our communities, while creating value for our shareholders.

Sustainability and creating shared value for all our stakeholders are at the heart of our operations. Our stakeholders include shareholders, employees, communities, government and regulators, as well as suppliers. We are committed to maintaining sustainable mining and mineral processing practices across all our operations and projects, while making a tangible contribution to our communities. We are fully committed to achieving our ESG goals and continue to deploy every available resource in support of our sustainability efforts.

Bushveld Minerals' ESG approach

Our ESG strategy has four key objectives: to instil a culture of sustainability throughout the organisation; to fully integrate this culture into our business decision-making process; to report on key ESG KPIs; and to communicate a consistent message about our ESG commitments to all our stakeholders.

We are rolling out our strategy in four phases. In the first phase from 2020-2022, we devised a comprehensive ESG strategy aligned to the United Nations' Sustainable Development Goals (UN SDGs). We set clear performance indicators to guide our efforts to build sustainable development capability and ensure that ESG considerations are integrated into all our business decisions.

In the second phase, which stretches across 2023, we are focusing on ensuring compliance and alignment across the business. In the third and fourth phases, from 2024 and beyond, we will focus on fully achieving our ESG commitments to create a truly transformative business. We intend to remain responsive to market conditions, requirements and opportunities, and recognise that certain aspects of the more ambitious second phase may materialise sooner.

Given recent market developments and the rapidly changing legislative and reporting environment, we refreshed our ESG strategy in the last quarter of 2022, to ensure our actions and ambitions in this space are fit-for-purpose, and aligned to our current realities and future goals. We have reprioritised the key short-term initiatives and actions we need to take, while ensuring our medium-to longer-term commitments and ambitions remain unchanged.

As part of our reporting standards, we continue to align our sustainability efforts with the International Finance Corporation (IFC) Environmental and Social Performance Standards and various other global reporting standards such as the UN SDGs and we provide biannual updates against these global benchmarks.

Additionally, In 2022, we established a Group ESG subcommittee of the main Board, which met twice during the year. We have established similar committees and forums at the subsidiary level of Vametco and Vanchem, which report to the Group ESG Committee.

These forums will be responsible for the execution of the strategy across the business, as well as the operational management of any ESG issues and opportunities as they arise. We are enhancing our current ESG reporting framework and systems, which will improve the collation, disclosure and use of material ESG data for both internal and external stakeholders.

ESG Strategy 2023-2030

JOURNEY TO 2030

OVERALL VISION	TO BE A RESPONSIBLE MARKET LEADER
COMMITMENTS	**Environmental:** – Contribute to the development of a low-carbon economy. – Proactively reduce our environmental footprint. **Social:** – Ensure the health and safety of our employees. – Foster a diverse and respectful working environment. – Invest in the development of our people and host communities. – Improve the socio-economic conditions of the communities in which we operate. – Plan for sustainable mine closure and developing "life after mine" economic opportunities for the surrounding communities and municipalities. **Governance:** – Engage proactively with our stakeholders and cultivate strong working relationships – Report transparently and consistently. – Assess and manage risks continuously.
GOALS (2030)	**Environmental:** – Reduce Scope 1 and 2 greenhouse gas (GHG) emissions and set goal for net zero emissions by 2050. – Grow the Company's electricity self-generation capacity. – Increase the percentage of vanadium that is reused. – Increase the amount of water recycled/reused and reduce freshwater consumption. Minimise the risks associated with groundwater contamination. – Align water reporting and management in line with ICMM Guidance. – Reduce waste to landfill, actively pursue partnerships in communities and strive for zero waste to landfill. – Safely manage and decommission tailings storage facilities in line with the Global Industry Standard on Tailings Management (GISTM) requirements. – Develop an approach to biodiversity management and strive for biodiversity gains or no net loss – Zero significant environmental fines or incidents **Health & Safety:** – Zero fatalities. – Improve Lost Time Injury Frequency Rate (LTIFR) in line with international best practice in the mining industry. **Social:** – Improve attraction and retention of key talent. – Reduction in external grievances recorded. – Improved well-being of host communities, through increased procurement spend, creation of jobs and provision of essential services. – Increase procurement spend with host communities. **Governance:** – Obtain a Level 2 B-BBEE score. – Equal representation of women on the Board and other leadership positions. – Zero tolerance for unethical behaviour and corruption.

Environment

STATUS OF ENVIRONMENTAL OPERATING LICENCES/ AUTHORISATIONS AND COMPLIANCE

All our operations have firm commitments to comply with all applicable environmental laws and regulations (national, provincial and local) at all times and to align with international standards, including the IFC's environmental and social performance standards and the ISO 14001:2015 environmental management system.

Annual environmental performance assessment audits are conducted by an external environmental specialist and by regulatory authorities. They assess how we are complying with the conditions of the Environmental Management Plan (EMP) and the mine's environmental authorisations. No major findings were reported from any of these audits in 2022 and no environmental penalties were imposed by the regulatory authorities.

The table below summarises our compliance with licence conditions and authorisations.

Vametco	Vanchem
Integrated Environmental Authorisation (IEA) Vametco was issued with an IEA by the DMRE in December 2021. In May 2022, Vametco requested that the DMRE amend the IEA conditions relating to: – Annual audit of the IEA to biennial audit (hence there was no audit in 2022); and – Specific conditions relating to the waste management licence (WML). DMRE responded in December, confirming that the request is being considered, and a decision is imminent.	**Environmental Authorisation (EA)** All Vanchem activities hold the relevant EAs. – No compliance audit by the Department of Forestry, Fishery Environmental Affairs (DFFE) in 2022. – The focus in 2023 is to integrate the various EAs into a single EA.
Air emission licence (AEL) The AEL is valid until August 2026. – No compliance visit by the Authority in 2022. – All mandatory reporting obligations were met.	**Air emission licence** Vanchem Main Plant AEL issued on 24 Jan 2022 and valid until 31 January 2027. The ferrovanadium plant's AEL was issued on 4 April 2022 and is valid until 31 March 2027. – Vanchem's main plant applied for a postponement to comply with minimum emission standards (MES) on SO_2. Department of Forestry, Fishery and Environmental Affairs decision due by end-December 2022.
Water use licence Vametco's WUL is valid until April 2037.	**Water use licence** – Vanchem WUL expired in February 2022. – Department of Water and Sanitation (DWS) has acknowledged the application and processing the renewal of the WUL. The application was submitted prior to the expiry.
Waste management licence – Vametco WML is now integrated into the IEA, following DMRE approval in December 2021. – No major compliance issues at the calcine dump following the 2022 compliance audit.	**Waste management licence** – The Vanchem calcine and tailings storage facility operates under the WML, which is valid until August 2029. – Permission to start dumping on the DWF extension was granted by DFFE in March 2022.

Environment *continued*

Environmental Incidents

In 2022, we recorded 17 environmental incidents, a 29 percent reduction compared with 2021. Unfortunately, although the number reduced, the severity of these incidents has increased from two significant incidents in 2021 to six significant incidents in 2022. However, no environmental directives or fines were issued. As we show below, we are taking corrective measures.

Incident type	Vametco	Vanchem	Total
Minor environmental incidents	10	1	11
Significant environmental incidents	4	2	6
Major environmental incidents	0	0	0
Environmental directive/order	0	0	0
Fines for non-compliance	0	0	0

Summary of significant incidents reported in 2022

Nature of significant Incidents	Key learnings	Status of corrective actions
Storm water dam (SWD) overflow, resulting in discharge of polluted water after rainfall.	– Divert unnecessary stormwater away from SWD. – Desilt SWD to maintain storage capacity. – Install silt trap upstream of SWD. – Maximise use of storm water during dry season to create adequate capacity to accommodate wet season and accidental spillages.	BELCO required to implement some of the corrective actions in 2023.

Energy Management and Climate Change

The table below summarises fuel consumption per source at Vametco and Vanchem:

2022 Energy consumption	Unit	Vametco	Vanchem	Total Energy consumption
Electricity (ESKOM)	MWh	88,285	63,418	151,703
Sasol gas	GJ	n/a	124,523	124,523
LPG bulk	Kt	89	n/a	89
Synthol fuel (heavy fuel)	KL	779	n/a	779
Pea coal	Kt	12.81	0.8	13.6
Duff coal	Kt	21	17	38
LPG cylinder (48 kg/cylinder)	Kt	1.2	#	1.2
Acetylene (13.6 kg/cylinder)	Kt	2.2	1.5	3.7
Diesel	KL	2,976	524	3,500

= data not available, n/a = not applicable

Based on the 2022 energy consumption data, the table below summarises GHG emissions for each operation.

2022 GHG Emissions	Unit	Vametco	Vanchem	Totals
Tonne GHG/	CO_2-eq	111, 305	90, 200	194, 538
Total products	CH_4	1.1	1.0	1.6
(Nitrovan/ Chemicals (V_20_5)	N_2O	1.5	1.4	2.3

Below is a summary of tons emitted per ton of product produced between the two business units:

	Vametco	Vanchem
GHG Emission Type	Tons of emissions per ton of product produced (nitrovan)	Tons of emissions per product produced (chemical products)
CO_2-eq	41.1	43.4
CH_4	0.00040	0.00054
N_2O	0.00055	0.00071

Water Management

Given how important water is to the functioning of our operations, we have a robust system of water accounting in place at Vametco. A similar system is being developed for Vanchem.

Water Intensity

Overall water intensity has increased from an average of 2 m^3/ton of ore milled in 2021 to an average of 3 m^3/ton of ore milled in 2022. Vametco achieved water intensity of 2.4 m^3/ton of ore milled as opposed to Vanchem's 3.6 m^3/ton of ore milled.

The focus in 2023 will be on implementing projects to reduce water wastage and to reuse and recycle water.

Water Withdrawals

Total water used increased by 31 percent from 2,947 ML in 2021 to 3,869 ML in 2022. New water injected into or withdrawn from the system increased by 16 percent from 1,491 ML (in 2021) to 1,727 ML in 2022. The chart opposite shows the various sources of water and quantities withdrawn.

Increased water use in 2022 can also be attributed to better accounting due to additional flow meters being installed during the year.

Water Discharge

Water discharge increased by 15 percent from 261 ML in 2021 to 300 ML in 2022. This increase correlates with more incidents caused by higher rainfall, due to changing climatic conditions.

To ensure work can continue safely, the risk mitigation strategy allows for a controlled release of water as a last resort. This is provided for in the WUL.

Groundwater Pollution Plume Remediation

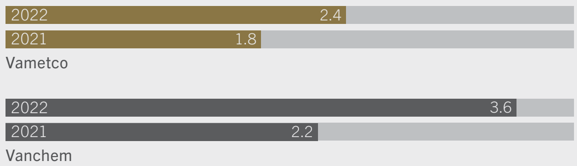
Vametco's WUL notes the existence of a historic groundwater pollution plume which should be managed through a series of interceptor or scavenger boreholes. Shown in bottom chart opposite is the performance of scavenger boreholes against the targets set in the WUL.

Pollution Plume Abstraction

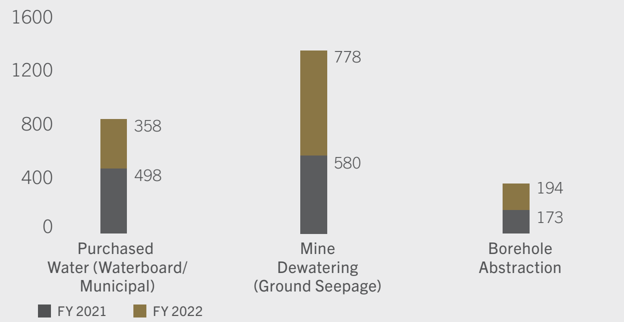
The performance of pollution plume abstraction boreholes has failed to meet the minimum abstraction threshold in the WUL over the past four financial years. In 2022, we managed to achieve 33 percent (67 ML) of the required WUL abstraction volume of 202 ML per annum. The improvement in pollution plume abstraction in 2022 over 2021 resulted from large efficient abstraction pumps installed in 2022.

In 2022, Vametco conducted a feasibility study for the establishment of a water treatment plant. Once this is in place, it will alleviate the risk of pollution plume migration, while strengthening water conservation measures within the operation.

Water intensity: water (m^3)/ ton vanadium milled



Vametco water withdrawals (ML)



Vanchem water withdrawal (ML)

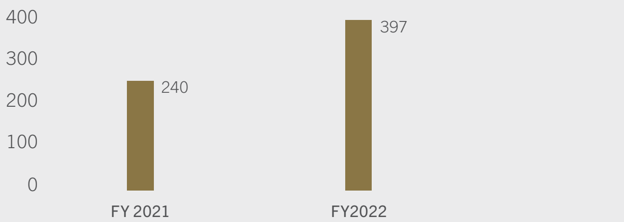
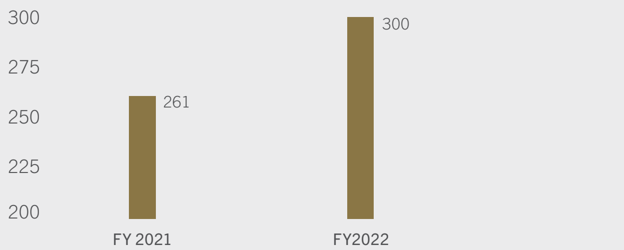
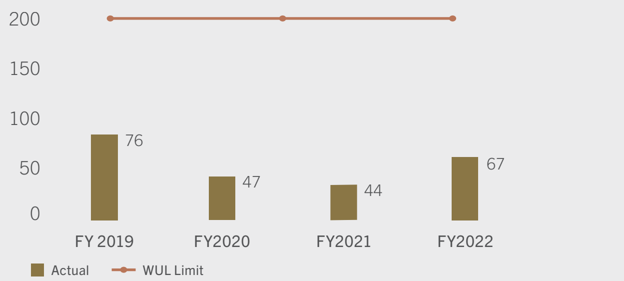


Table 4: Water discharge (ML)



Pollution plume abstraction vs WUL limit (ML)



Environment *continued*

Water Recycling

The Group managed to recycle or reuse a total of 2,156 ML of water in 2022, equivalent to a total reuse/recycling efficiency of 56 percent.

Water recycling/reuse (ML)

Type	Vametco	Vanchem	Total
Tailings storage facility (TSF) Return water	1,511	363	1,874
Stormwater	161	101	262
Sewage effluent	19	0	19

The Vanchem achieved 54 percent recycling efficiency, while Vametco achieved an impressive 56 percent.

AIR QUALITY AND ENVIRONMENTAL DUST FALL-OUT

All facilities in business units hold AELs valid until 2027.

Summarised below is our compliance with AELs:

Sampled parameter (mg/Nm^3)	Vametco	Vanchem (main plant)	Vanchem (FeV plant)	Comment
PM	🔴	🔴	🟢	All business units did not meet the MES for particulate matter (PM), sulphate (SO_2), and ammonia (NH_3). Vanchem main plant applied for a postponement to comply with MES SO_2 limits and awaits a decision by the DFFE.
SO_2	🔴	🔴	🟢	
NH_3	🔴	🟢	🟢	Upgrade of emissions abatement technologies (cyclones, scrubbers and baghouses) is required to meet MES at both business units. It is a focus for 2023 and beyond.
Ambient dust (DFO – $mg/m^2/day$)	🟢	🔴	🟢	Vanchem main plant operates within the Ferrobank industrial area, which is experiencing a resurgence of open cast coal mining activities. This is the main contributor to exceedance of dust fall out (DFO).

🔴 Exceeds limit

🟢 Below limit

Waste generation and management

The tables below provide breakdowns of waste types generated per business unit in the 2022 financial year.

2022 Waste generation	Unit	Vametco	Vanchem	Total
Hazardous waste (off-site disposed)	Kt	0.01	0.6	0.7
General waste (municipal landfill)	Kt	0.1	0.3	0.4
Sewage effluent disposed (municipal sewer system)	ML	0.36	147	147.4
Hazardous waste – mineral tailings (calcine)	Kt	392	187	579
Non-hazardous waste – mineral tailings	Kt	770	44	814
Waste rock dumps	Kt	817	n/a	817
Recycled waste (paper)	Kt	0.002	0	0.002
Recycled waste (scrap metals)	Kt	0.5	0.4	0.9
Recycled waste (rubber)	Kt	0.01	0	0.01
Recycled waste (used oil)	Kt	37	2.1	39.1
Boiler ash – community brick manufacturing	Kt	3.6	0.1	3.6

Total waste generated in 2022 was 2,402 kt, a 36 percent decline from the 2021 total waste of 3,726 kt.

LAND AND BIODIVERSITY MANAGEMENT

Of the 11,618 hectares of land that the Group owns or manages, only 5 percent has been disturbed for operational activities.

Land management	Unit	Vametco	Vanchem	Pamish	Total
Total land leased/managed/owned	ha	1 508	82	10 029	11 618
Total land disturbed	ha	543	35	0	578
Total land rehabilitation	ha	8*	0	0	8

*cummulative

No land was rehabilitated in 2022, so significant efforts will be required from 2023 and beyond to ensure concurrent rehabilitation. Each business unit will need to develop rehabilitation targets to reduce its land disturbance footprint.

Social development

Case study

LIGHTING COMMUNITIES SUSTAINABLY

Safety is our number one priority, not just for our employees at our sites. The safety and security of our communities is equally important to us. Many community members, including our own employees, travel from their homes to work in the darker hours of the day. Good street lighting makes a difference in reducing crime incidents in the community, creating safer neighbourhoods.

As part of the Vametco Social Labour Plan (SLP), we are installing solar high mast lights, in partnership with the Madibeng Local Municipality. Equipped with solar technology, the lights will stay on despite loadshedding. The communities of Rankotea, Switch and Thetele and Ward 21 are currently benefiting from this initiative, as we roll out the solar high mast lights in the area.

To maximise the impact of the project on the local community and ensure economic benefit for local businesses, Vametco has appointed service providers from the same communities where the installations are taking place.

The expected spend for this project is over ZAR4 million (US$ 0.2 million). It will create much-needed economic spin-offs, such as job opportunities for locals and support for emerging entrepreneurs who are now afforded the opportunity to do business with Bushveld Minerals.

Social development *continued*

SOCIAL AND LABOUR PLAN

We are currently in the implementation phase of the projects we committed to in Vametco's 2018 to 2022 SLPs which was approved by the DMRE. These projects are carried out in consultation and, in some instances, in partnership with the municipality, beneficiary communities and other relevant stakeholders. Our new SLP for the period 2023 to 2027 has already been submitted to the DMRE. The SLP is Vametco's commitment to socio-economic and community development for employees and its host communities.

To better strengthen relationships with communities and to fully understand the socio-economic landscape of our host communities, we plan to carry out a comprehensive socio-economic baseline study in 2023. The study will inform the Company's community development strategy going forward, ensuring that we make a lasting impact on the communities where we operate.

ENTERPRISE SUPPLIER DEVELOPMENT

In 2022, Vametco and Vanchem enrolled 10 community-owned businesses into a business development support programme. The programme is aimed at capacitating and strengthening core business competencies such as strategy, marketing, brand awareness, reputational risk and financial modelling. Additionally, we continue to support Small, Medium and Micro Enterprises (SMME's) currently doing business with our operations by prioritising their invoice payments, where possible. Programmes such as these allow us to create a pipeline of local businesses that can, in future, participate economically in the operation.

OUR APPROACH TO STAKEHOLDER RELATIONS

The Company continues to engage with different stakeholders, including the three spheres of the South African government: the national DMRE, provincial, and local government departments where Bushveld Minerals' operations are located.

Bushveld Minerals enjoyed healthy relationships with most of our host communities in 2022.

Partnering with our stakeholders

Government

In 2022, we met regularly with various government departments to discuss regulatory issues. The engagements on behalf of Vametco were part of our licence to operate requirements. These included health and safety inspections, Department of Labour compliance meetings, and meetings about Vametco's SLP.

Submissions made to the DMRE in the year under review centred around legal compliance with different aspects of the SLP: Community Development Programmes, Human Resources Development, Preferential Procurement Plan, Process to Manage Downscaling and Retrenchments, and Housing and Living Conditions.

Various meetings were held with the municipality's administration and technical departments to discuss project scope as well as to define the areas where projects would be implemented.

Community forums (Vametco)

We meet regularly with various community groups in our host communities. These range from unemployment forums to community concern groups. Issues normally discussed with these forums range from employment opportunities to community development initiatives. In response to this need and to streamline engagements with the forums, Vametco and the Madibeng Local Municipality have agreed to set up a Community Engagement Forum (CEF) that will embrace all recognised community structures within the Madibeng municipal area and Vametco's host communities. The CEF will be driven by the municipality and will involve all interested and affected parties. It will work with all relevant stakeholders to identify developmental programmes that the mine can include in its future plans with the communities.

Business forums (Vametco)

The business forums in the host communities at Vametco have asked to discuss procurement-related opportunities with us. Most of these forums represent our host communities of Uitvalgrond, Rankotea, Mmakau, Switch and Thetele, and Mothotlung. Issues raised included requests from local businesses to be registered on the mine's procurement database to access procurement opportunities at Vametco as they become available. In 2022, Vametco increased the number of local businesses that were given an opportunity to do business with the mine. Currently we spend 12 percent of our total procurement spend with local businesses. We are looking to improve this in 2023.

Vametco's community development projects

Vametco has identified a number of projects that will help to uplift the communities around us. This is not only a legal requirement – it is vital that our communities understand and share in the benefits of a well-functioning mine and plant. These initiatives are laid out in our SLP, the fulfilment of which maintains our licence under Mining Charter III and the MPRDA.

Within our modest resources, we have identified projects that will help raise the standards of living in our communities, through providing street lighting, sports facilities, water and roads. The following projects are under way:

1. Rankotea sports facility

In line with its SLP, Vametco is in the process of upgrading a community sports field in Rankotea. The upgrade will include erecting a fence around the stadium, fixing the goalposts, and installing a sprinkler system. A service provider was recently appointed to assist with project implementation, and at least eight local people are expected to be employed during the project's construction phase.

2. Roads and stormwater projects

The mine will work with Madibeng Local Municipality to re-gravel some of the local roads in Rankotea, Switch and Thetele, and Ward 21. This project forms part of their Integrated Development Plan (IDP) infrastructure development programmes. The project is currently at a feasibility stage.

ADDITIONAL PROJECTS

Uitvalgrond water system upgrade programme

During some of the interactions between Vametco and the Uitvalgrond community, it emerged that, although Uitvalgrond has water systems in place, the community is still experiencing serious challenges in accessing water. Vametco worked with the leadership of the community to get the main borehole pump working again and energised. This project has been completed, and water is now supplied into the reticulation system. The second phase of this project will commence in 2023. This phase will focus on repairing the water reticulation system and equipping all the other boreholes with working pumps.

Vanchem Community Engagement

Vanchem in the community

Vanchem as a legal entity established a voluntary community engagement forum (CEF), to maintain and sustain effective relations with stakeholders within our host communities in Emalahleni local municipality.

The forum meetings are used to discuss and give feedback on socio-economic programmes that are planned in order to benefit communities close to Vanchem. These programmes are implemented, subject to availability of budget.

STAKEHOLDER ENGAGEMENTS

In 2022, Vanchem engaged community structures based in the Emalahleni Local Municipality, including the Ferrobank business community and various community development workers, in an effort to ensure open dialogue and mutually beneficial relationships with all stakeholders affected by our operations.

Community structures

Several community structures have been invited to join the CEF and in 2022, 15 of them submitted their applications to become part of the forum. The terms of reference have been shared with all applicants. We are positive that we will be able to launch the forum successfully and proceed as planned in 2023.

Emalahleni Local Municipality

In 2022, engagements were held with the municipality to introduce Vanchem to the newly elected councillors and to find areas of mutual interest and collaboration on municipal community development activities.

We have also met regularly to find workable solutions to the persistent scourge of loadshedding. Additionally, the municipality has agreed to include Vanchem in the Local Economic Development Forum which allows us meaningful participation in municipal development discussions.

Ferrobank businesses engagement

To build relationships with other businesses operating in the Ferrobank area and share ideas and other social and economic activities in our host communities, we have established the Ferrobank Industrial Business Forum.

COMMUNITY PROJECTS

Mandela month project

We partnered with "Hope of the Nation", a local NGO to help renovate the South African National Tuberculosis Association (SANTA) tuberculosis hospital in Ferrobank. Some of the wards' roofs were leaking, there was a shortage of mattresses, no air conditioning, no connections to TVs, and the children's ward needed repainting. We renovated the hospital on Mandela Day, provided DSTV connections, an overhead projector, 10 mattresses, and table soccer for the kids to enjoy. We also repaired all leaks, painted the children's ward and installed proper signage.

Back-to-school campaign

The Emalahleni Local Municipality requested support for the provision of school shoes to needy learners in our host communities that were identified by ward councillors.

We donated 67 school shoes, 100 school backpacks and 100 pencil cases as part of our back-to-school campaign.

Our people

HEALTH AND SAFETY

We care about our employees and communities and we have a responsibility to ensure their safety and well-being. We take a risk-based approach to health and safety. It starts with a Baseline Risk Assessment, moving to an Issue-based Risk Assessment and then to a Continuous Risk Assessment, which includes lag and lead indicators. We do not tolerate any deviations from regulatory requirements, whether by our own staff or contractors.

In 2022, Vanchem was certified in ISO 9001:2015 Quality management systems (QMS), while Vametco retained its QMS certification. In 2023, the Group intends to ensure that both Vanchem's and Vametco's Occupational Health and Safety Management Systems are certified under ISO 45001:2018.

A safety diagnostic audit was conducted at both Vanchem and Vametco to determine the safety and risk maturity levels and identify opportunities for improvement. This included the field verification of activities and the application of documented safety management processes, using pre-defined assessment tools.

From the consolidated report, 10 top initiatives were identified. These top 10 initiatives were proposed to improve the maturity level from reactive to independent and ultimately to interdependent, in line with the Bradley Safety Maturity Curve. A corrective action plan was developed to address the gaps and these are tracked for implementation and closure. The corrective action plans are discussed at operational level, in operational committee and Executive Committee meetings.

SAFETY

Our commitment to achieving zero harm while mining and processing was evident in our zero-fatality record in 2022.

The TIFR rose from 7.78 in 2021 to 10.32 in 2022, this includes recorded first aid incidents. This was due mainly to poor housekeeping which resulted in failure to identify hazards (mainly slip, trip and fall incidents) during routine activities. The safety team has intensified its awareness campaign to employees and contractors to reduce these incidents.

Vametco

Vametco reported zero fatalities and three lost time injuries in 2022. The TIFR increased from 8.62 in 2021 to 11.15 in 2022 due to an increase in recorded first aid cases.

The DMRE's Mine Health and Safety inspectors conducted 12 inspections in 2022 compared to four in 2021. Four section 55 instructions and four section 54 stoppage instructions were issued in terms of the Mine Health and Safety Act. All instructions were implemented, and reports were submitted to the DMRE.

Vanchem

Bushveld Vanchem recorded zero fatalities and six lost time injuries in 2022, unchanged from 2021. The LTIFR rose from 4.37 in 2021 to 6.61 in 2022. The TIFR also increased from 4.37 in 2021 to 12.12 in 2022 as there were more medical treatment cases. The Department of Labour conducted 1 inspection at the ferrovanadium plant located at Highveld Steel. No section 30 contravention or improvement notice was issued.

Safety indicators

Land Management	Safety indicators	Vametco	Vanchem	Bushveld Minerals
Injuries	First aid cases	14	2	**16**
	Medical treatment cases	7	2	**9**
	Fatalities	0	0	**0**
	Total recordable injuries	10	8	**18**
	Lost time injuries	3	6	**9**
Lagging indicators	Time lost	36	387	**423**
	LTIFR	1.4	6.61	**2.85**
	TIFR	11.15	12.12	**10.32**
Incidents	Critical incidents	0	0	**0**
	High potential risk incidents	5	2	**7**
	Near miss incidents reported	57	4	**61**
Authority indicators	Section 55 directives	6	0	**6**
	Section 54 directives	4	0	**4**

HEALTH

To protect our employees' general health and wellness, we monitor chronic diseases, screen for tuberculosis and provide HIV/AIDS voluntary counselling and testing at on-site and off-site Occupational Health Clinics.

Category	Health Indicators	Vametco	Vanchem	Head Office	Bushveld Minerals
Occupational diseases	Total occupational diseases	1	0	0	**1**
	New noise induced hearing loss cases	0	0	0	**0**
	New respiratory diseases	1	0	0	**1**
New "other" cases	Non-occupational diseases	139	26	0	**165**

In 2022 no noise-induced hearing loss cases were recorded, against 1 in 2021. The number of non-occupational diseases increased from 12 in 2021 to 165 across the Group. 1 tuberculosis case was reported in 2022.

We have brought in a health and wellness specialist to help employees achieve their wellness and healthy lifestyle goals by introducing various programmes. These programmes also focus on mental health and raise awareness of our Employee Assistance Programme.

TALENT MANAGEMENT

Attracting, retaining and developing our talent is vital to our success. One of the aspects that makes Bushveld Minerals a desirable place to work is that we support every employee working for us to fulfil their potential. By encouraging continuous learning, we ensure our employees are equipped with the appropriate knowledge and skills to perform at their best and help us to deliver our goals. We ensure we have a pipeline of relevant technical skills by offering graduate, internship, and bursary programmes to talented and needy learners. To date, we have spent ZAR24.3 million (US$ 1.5 million) on skills development. We have an unwavering commitment to building a diverse workforce, with equitable representation at all levels, including females.

Consistent and effective leadership is a priority to sustain our organisation's viability and future mission. Our talent review and succession planning processes help us to identify and develop people in the short, medium, and long term for mission critical roles and we have put retention and succession plans in place for all our leadership positions.

OUR CULTURE JOURNEY

An initial assessment based on conversations with different stakeholders on how we have progressed over the past year in implementing the Bushveld Minerals culture programme is summarised below.

Our safety record generally remains good, and the recent safety diagnostic exercise will further help our efforts. We are focused on ensuring that we remain on top of all the issues which are vital to our social licence to operate – both in law, as well as in line with our values as an organisation.

As we continue to embed our values, we have been encouraged by the level of collaboration between various teams across the business units. This was evidenced on key projects throughout the year, with the sharing of expertise between the Vametco and Vanchem teams. This culture of collaboration is critical to our operational performance and bodes well for our future planning and disciplined execution in future.

In order to further entrench our shared vision for the business and in line with our visible leadership principle, we hosted CEO roadshows in 2022 where the executive team engaged with employees in the various operations and at the corporate office on business values, business performance, strategy and all matters that impact employees' workplace experience.

One of our objectives for 2023 is to conduct a comprehensive base level survey to determine the progress made so far.

OUR VALUES

CARE
We care for the safety and health of our people, safety of our assets, environment and our communities

COURAGE
We are pioneering, resilient,innovative curious and open to new ideas.

COLLABORATION
We collaborate for shared success by building unity through our shared purpose and effective communication

EXCELLENCE
We continuously strive for excellence through rigour, effort and deliberate planning, focused on the right performance outcomes

TRUSTED
We are trusted because we show integrity, aspire to deliver on our promises, and go beyond compliance

Our people *continued*

OVERALL GROUP STAFF COMPLEMENT

The Group employed a total of 814 people at the end of December 2022. The table below provides a breakdown by business unit:

Employment type	Corporate incl. Bushveld Energy and Lemur	Vametco	Vanchem
Permanent	56	427	240
Fixed-term contractors	7	22	27
Learners/apprentices/ interns/ graduates	1	21	13
Total	**64**	**470**	**280**

DIVERSITY AND INCLUSION

In the year under review, our gender ratios improved, as we increased our ratio to 23 percent (185) female staff and 77 percent (621) male staff, compared with 2021 when we had 19 percent (140) female employees and 81 percent (590) male staff. The biggest improvements in gender representativity have been in our corporate office (including Bushveld Energy), where at the end of 2022 the ratio improved to 49 percent (29) females and 51 percent (31) male employees from December 2021's figures of 40 percent (19) female staff and 60 percent (29) male staff. Gender representation will remain essential to our transformation plans in the coming years.

EMPLOYEE WELLNESS

In line with our corporate values as an employer, we care about the well-being of our employees. We seek to empower our employees to have courage and to develop resilience and self-management competencies to overcome life's demands. We believe that when our employees are psychologically and physically fit, they are more productive, and this allows us to deliver with excellence. Our employees trust us to create a workplace that helps them deal with the challenges they face in life.

To address the holistic well-being of our employees, we apply the four Pillars of Wellness which include:

- Physical Well-being (#Commit to being fit)
- Financial Well-being (#Work to live)
- Emotional Well-being (#To thrive, not to survive)
- Work-life balance (#Work hard, play hard)

EMPLOYEE RELATIONS

The Group's ER strategy aims to ensure peace and stability throughout our workforce. It remains a sound basis for engagement with our employees, organised labour and other relevant stakeholders. Overall, the strategy has yielded functional relationships with organised labour, employees and stakeholders. In collaboration with other functions, we continue to monitor the peace and stability of our operations.

Highlights of 2022

- Monitored the implementation of the signed wage agreements both at Vametco and Vanchem to ensure long-term operational stability.
- Continuous support and collaboration with Vanchem management to achieve operational stability, including the kiln project.
- Capacitated the line supervisors on managing discipline at the workplace and managing in a unionised environment.
- Work in progress on the BMN Policy project to be finalised by May 2023.

Union stats

	AMCU	NUMSA	NUM	SOLIDARITY
Vanchem	66	102	0	0
%	26%	36.4%	0	0
Vametco	320	0	15	15
%	68%	0	3%	3%

2023 focus areas

- Roll out a programme on business understanding across the business units.
- Support the business cost saving initiatives and interventions i.e., Overtime project and shifts configuration.
- Identify and manage the employee relations risks on a continuous basis.
- Capacitation of line managers and Shop stewards on handling performance, managing in a unionised environment, workplace mediation skills.
- Establish an annual alignment forum with key national union leaders (AMCU and NUMSA).
- Facilitate the 2023 team-building goal and alignment sessions at Vametco and Vanchem.

Governance

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Meet the Board of Directors

E ESG Committee
D Disclosure Committee
N Nomination Committee
R Remuneration Committee
A Audit Committee
Denotes Chair

MICHAEL J. KIRKWOOD (76) INDEPENDENT NON-EXECUTIVE CHAIRMAN

Board appointment
April 2018

Experience: After spending 31 years at Citigroup, Michael has taken on the chairmanship of Ondra LLP. He has held main board roles at several listed companies, including Kidde, Circle Holdings, AngloGold Ashanti and UK Financial Investments. He was deputy chair of PwC's Advisory Board, chair of British American Business, and President of the Chartered Institute of Bankers.

Qualifications: Graduate of Stanford University; Fellowships: FCIB, HonFCT; Honours: CMG.

FORTUNE MOJAPELO (47) CO-FOUNDER AND CHIEF EXECUTIVE OFFICER

Board appointment
March 2012

Experience: Fortune is co-founder and Chief Executive of Bushveld Minerals and co-founder and a Director of Bushveld Energy. He began his career at McKinsey & Company as a consultant on corporate strategy and went on to play a leading role in the origination, establishment and project development of several junior mining companies in Africa.

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

TANYA CHIKANZA (57) FINANCE DIRECTOR

Board appointment
October 2019

Experience: Tanya has extensive experience in managing publicly-listed companies' relationships with financial markets, having worked at Lonmin Plc, Smith's Corporate Advisory, and JP Morgan Cazenove. Her expertise lies in international equity and debt capital markets, strategy, corporate finance, audit and finance.

Qualifications: Chartered Accountant; Member of the Institute of Chartered Accountants of Zimbabwe.

DAVID NOKO (66) INDEPENDENT NON-EXECUTIVE DIRECTOR

Board appointment
May 2022

Experience: David's comprehensive business acumen is the result of many years of advising prominent companies. He has held senior roles at General Electric Company, Pepsi Cola International, South African Breweries, De Beers Group, and AngloGold Ashanti. David is chairman of the Council of the University of the Free State.

Qualifications: Mechanical Engineer; MBA from Heriot Watt University; postgraduate Diploma in Company Direction from the Graduate Institute of Management Technology.

KEVIN ALCOCK (60) INDEPENDENT NON-EXECUTIVE DIRECTOR

Board appointment
March 2022

Experience: Kevin's business career has been focused on financial services, management consulting and technology. He successfully founded an asset management consultancy business which was later sold to a London listed Company, where he became CEO. Over the past 12 years, He continues to be active in various NED roles, including Board positions at prominent asset management and outsource services companies in the UK and Southern Africa.

Qualifications: Chartered Accountant.

MIRCO BARDELLA (64) INDEPENDENT NON-EXECUTIVE DIRECTOR

Board appointment
March 2022

Experience: A Chartered Accountant and former EY Assurance Partner, Mirco has led audits in the natural resources sector and advised organisations on a range of assurance and governance services. Throughout his career, he has been involved in mentorship programmes, diversity and inclusiveness initiatives, as well as other aspects of human resources.

Qualifications: Chartered Accountant; Member of SAICA and the Institute of Chartered Accountants in Australia and in Scotland.

* The Disclosure Committee was expanded in March 2022 to include dealing with ad hoc matters requiring attention outside of the quarterly Board meetings but that did not necessitate a full Board meeting. However, all meetings last year were treated as full Board meetings and there were no Disclosure Committee meetings.

Executive management team

FORTUNE MOJAPELO (47)
CO-FOUNDER AND CHIEF EXECUTIVE OFFICER

Experience: Co-founder and Chief Executive of Bushveld Minerals and co-founder and Director of Bushveld Energy. He began his career at McKinsey & Company as a consultant on corporate strategy and went on to play a leading role in the origination, establishment and project development of several junior mining companies in Africa.

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

TANYA CHIKANZA (57)
FINANCE DIRECTOR

Experience: Tanya has extensive experience in managing publicly-listed companies' relationships with financial markets, having worked at Lonmin Plc, Smith's Corporate Advisory and JP Morgan Cazenove. Her expertise lies in international equity and debt capital markets, strategy, corporate finance and audit.

Qualifications: Chartered Accountant; Member of the Institute of Chartered Accountants of Zimbabwe.

MIKHAIL NIKOMAROV (42)
CHIEF EXECUTIVE OFFICER OF BUSHVELD ENERGY SINCE APRIL 2015

Experience: Mikhail has over 15 years' international business experience in energy and finance. He spent seven years with McKinsey & Company in Moscow and Johannesburg, advising national governments, utilities and manufacturers on growth strategy and policy.

Qualifications: MBA from INSEAD; Diploma in Economics from London School of Economics; BA (History) and BA (Economics) from the University of Massachusetts.

PRINCE NYATI (45)
CHIEF EXECUTIVE OFFICER OF LEMUR HOLDINGS SINCE NOVEMBER 2017

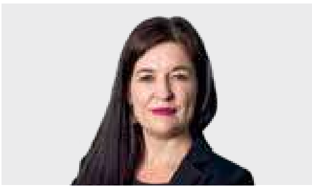
Experience: Prince has over 16 years' experience of developing energy and mining projects in sub-Saharan Africa. He started his career in oil, gas and petrochemicals in the USA and has worked in Zambia, South Africa, India and Singapore for companies including Shell Oil, Total Petrochemicals, Eskom and Tata Power.

Qualifications: MBA from the University of Houston; BA from the University of Zambia.

LUCAS MSIMANGA (52)
GROUP EXECUTIVE: OPERATIONS SINCE JUNE 2022

Experience: Lucas is a seasoned metallurgical engineer with over 25 years' experience in the mining and processing sectors. He has held senior operational roles at Rio Tinto, BHP Billiton and South32, where he was exposed to different commodities. He is also the former Vice-President of Manganese South Africa.

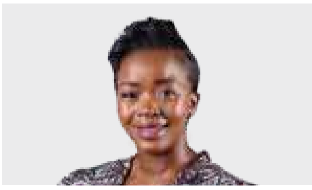
Qualifications: BSc (Hons) Metallurgical Engineering; Masters in Business Leadership.



VIKI RAPELAS (44)
GROUP EXECUTIVE: LEGAL, GOVERNANCE AND COMPLIANCE SINCE JANUARY 2019

Experience: Viki was admitted as an attorney of the High Court of South Africa in 2004 and admitted as a notary and conveyancer in 2012. She has been the legal adviser to the Bushveld Minerals Group since 2007. She has over 20 years' experience in transactional advisory, mergers and acquisitions and general corporate and commercial law.

Qualifications: International Law qualification from University of Antwerp (Belgium); BProc and LLB from Rand Afrikaans University (now University of Johannesburg).



SIBU MAJOZI (39)
GROUP EXECUTIVE: CORPORATE AFFAIRS AND SUSTAINABILITY SINCE AUGUST 2022

Experience: Sibu has over 15 years' experience in corporate communications, gained in South Africa and abroad. She spent just over 9 years at the De Beers Group and has worked in corporate communications for Suntory and Naspers/Prosus in the Netherlands. She was previously the executive manager for Corporate Communications and Reputation Management at Transnet Freight Rail.

Qualifications: Bachelor of Commerce (Economics and Marketing), from University of KwaZulu Natal.

PROFESSOR RICHARD VILJOEN (81)
TECHNICAL ADVISER SINCE MARCH 2012

Experience: With over 30 years' experience in the mining industry as a consulting geologist, Richard has co-ordinated the development of the Northam Platinum mine and the Leeudoorn and Tarkwa gold mines. He has advised exploration and mining companies in multiple mining jurisdictions across the commodities sectors.

Qualifications: MSc and PhD from the University of the Witwatersrand; FGSSA; FSAIMM; FRSSA; FSEG; FGSI; Pr. Sc. Nat.

Corporate Governance Report

The Board collectively recognises that implementing an effective corporate governance structure is of paramount importance to continue delivering the Company's strategy, create long-term value for shareholders, and maintain our licence to operate. Bushveld has elected to adopt the Quoted Companies Alliance Corporate Governance Code (QCA Code), which takes key elements of good governance and applies them in a manner that supports the different needs of growing companies.

The Board believes that it is applying the 10 principles of the QCA Code effectively across the business. These principles are set out below, supplemented with details of how the Company is applying them and how the principles will support the Company's medium- to long-term success.

DELIVER GROWTH

PRINCIPLE 1:

Establish a strategy and business model that promotes long-term value for shareholders

Bushveld Minerals has a well-established strategy and business model. Its objective is to unlock the value of assets in its diversified vanadium product portfolio and deliver returns to shareholders through effective management and efficient operations. The operating model defines the structures in which Bushveld operates and the capabilities it requires to achieve its goals.

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 communicates the value proposition to both institutional and private investors, as well as the broader market, using different forms of engagement. These engagements provide valuable feedback for the Board's decision-making process and determine how the Company can best meet shareholder expectations.

The Company disseminates news on significant developments and regular operational updates in stock exchange announcements via the Regulatory News Service (RNS). These are also available on the Company's website at http://www.bushveldminerals.com/regulatory-news-rns/. The website contains a wealth of information for existing and potential shareholders.

Conference calls are hosted by the Chief Executive Officer and Finance Director after the release of quarterly operational updates and the interim and full year results.

Any shareholder enquiries can be directed to info@bushveldminerals.com.

We provide details below of our shareholder engagements during the past year.

	2022
Virtual roadshows	
Full-year 2021 results	July
Reporting	
Q1 2022 operational update	April
Q2 and H1 2022 operational update	July
Final results for the year ended 31 December 2021	June
Interim results for the six months to 30 June 2022	September
Q3 and nine months to 2022 operational update	October
Q4 and FY 2022 operational update	January 2023
Annual General Meeting (AGM)	August
Conferences	
SA Investment Conference	March
121 Mining Investment Conference	May
Africa Mining Indaba Virtual Investment Programme	May
RMB Morgan Stanley Off Piste Investor Conference	September
Green Energy Africa Summit	October

PRINCIPLE 3:
Take into account wider stakeholder and social responsibilities and their implications for long-term success

Bushveld's strategic intent of value beyond compliance is anchored on the principle of creating shared, long-lasting value for all its stakeholders. It is recognised that the successful execution of its business strategy requires the Company to build and maintain meaningful, well-functioning relationships with multiple stakeholders, including, and very importantly, the communities around our projects and operations.

The Company's sustainability strategy is focused on environmental, social and governance (ESG) principles that aim to integrate material ESG considerations into the decision-making process across the value chain. Material ESG key performance indicators (KPIs) will be reported on, and a consistent message communicated to stakeholders on key ESG commitments.

To support our ESG strategy, we established an ESG Committee in 2022 to ensure sufficient oversight of Bushveld's ESG strategy, ESG risks that can affect the Company's strategy and performance, and the Company's ESG disclosures.

More information and detail on this topic can be found within the Sustainability Report.

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 governance structures, internal controls and risk management systems, which are designed to meet the particular needs of the Company and address the risks to which it is exposed. The oversight responsibility for reviewing the adequacy and effectiveness of these has been delegated to the Audit Committee.

The Company developed an Enterprise Risk Management (ERM) Framework in 2021, the primary purpose of which was to establish and formalise a systematic and collaborated risk management culture, as well as guide and direct the Company's governance and decision-making.

Further details on risk management are provided in the Principal Risks section of this report.

Other important tools to identify, evaluate and manage significant risks are frequent Board meetings, which consider detailed reports on the operations of the Company, as well as reports received from the Internal Auditor and the Company's external, independent auditor, via the Audit Committee, on the state of Bushveld's internal controls.

MAINTAIN A DYNAMIC MANAGEMENT FRAMEWORK
PRINCIPLE 5:
Maintaining the Board as a well-functioning, balanced team led by the Chair

In 2022, a number of changes were made to the Board at different intervals to ensure a level of continuity. Ian Watson, who had served as Chairman for 10 years, retired at the AGM, and Michael Kirkwood assumed the role. Two long-standing Non-Executive Directors, Anthony Viljoen and Jeremy Friedlander, both of whom had served the Board for 10 years, also retired. Four new independent Non-Executive Directors with relevant qualifications and experience were appointed: Kevin Alcock, Mirco Bardella, David Noko, and Jacqueline Musiitwa. Jacqueline subsequently stepped down at year-end after accepting a role with the United States Agency for International Development (USAID).

As detailed in the Chairman's Statement, further to the above changes, the Chief Executive Officer, Fortune Mojapelo, has decided to step down from his role as of 1st July after having led the Company for over 11 years. Craig Coltman, who is deemed to be well qualified for the role, has been identified as Fortune's replacement.

Consequently, the Board currently, and will continue to, comprise of an Independent Chairman, 3 independent Non-Executive Directors and two Executive Directors.

The Board met formally four times during the year ended 31 December 2022, with an additional five meetings held to consider matters falling outside the quarterly cycles. Every Director on the Board attended all meetings.

The Board is supported by the Audit, Remuneration, ESG, Nomination and Disclosure Committees, which operate within specific terms of reference, as described in more detail 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 are appointed based on the varied skills and experience they contribute, as well as their personal qualities and capabilities. Their full biographical details are included on page 50. The Board can also engage independent advisers, should the need arise.

The Board is determined to maintain the right balance of Directors and the Nomination Committee continually reviews the composition of the Board to ensure that it has the necessary breadth and depth of skills to support the Company's strategy. Every year, at least one-third of Directors retire by rotation and, if they offer themselves for re-election, this is put to a vote of the shareholders at the AGM.

PRINCIPLE 7:
Evaluate Board performance based on clear and relevant objectives, seeking continuous improvement

The Board recognises the importance of reviewing the effectiveness of its performance and how the Directors and Committees work together to achieve the Company's objectives.

Corporate Governance Report continued

Responsibility for assessing and monitoring the performance of the Executive Directors lies with the independent Non-Executive Directors, using agreed KPIs. Further details can be found in the Remuneration Report.

The Board as a whole evaluates its own performance internally, as well as the performance of the Committees, and uses the evaluation process to identify opportunities for improvement. The last Board and committee evaluation process was initiated in December 2022, led by the Chairman and facilitated by the Company Secretary. This involves the completion of a confidential questionnaire by each Director covering a number of areas, including Board structure, strategy, risk management, processes, Board dynamics, evaluation of the CEO and Chairman, and culture matters. Committee-specific questionnaires that address the functioning of the Committees are also completed. A report is collated with the responses received, on an unattributed basis, which is then presented to the Board for discussion.

PRINCIPLE 8:
Promote a corporate culture based on ethical values and behaviours

Bushveld is committed to the highest standards of transparency and accountability. It conducts its business in an honest and ethical manner, following sound governance principles, and is determined to ensure that ethical values and behaviours are fully embedded throughout the Company. Bushveld 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 the Company's strategy.

Bushveld has the following policies:
Conflicts of Interest, Anti-Corruption and Bribery Policy

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.

The purpose of this policy is to provide clear guidelines and acceptable practices to all employees to avoid potential and perceived conflicts of interest. Bribery and corruption in any shape or form is strongly discouraged and employees found to be contravening these polices may be subject to disciplinary proceedings.

Fraud Prevention and Fraud Investigation Policies

The purpose of these policies is to detail the Company's expectations on managing fraud risk and to develop awareness of that risk in the organisation. They provide guidance to those who find themselves having to deal with fraud, and establish procedures and assign responsibility for the investigation of fraud and related offences.

Whistle-blowing Policy

This policy is intended to help to counter silence and inaction and assist in preventing corruption within Bushveld and the broader public sector in which it operates. We want to encourage employees and stakeholders to feel confident about raising breaches and concerns and ensure that whistle-blowers will be protected from possible reprisals or victimisation if and when disclosures are made in good faith.

Share Dealing Policy

The Company's policy for dealing in its shares incorporates all obligations under both Rule 21 of the AIM Rules for Companies and Article 19 of the Market Abuse Regulations. The policy explains when 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 doing so. The Company has a memorandum on inside information which provides additional information on applicable laws and possible sanctions, market-abuse provisions and communication requirements.

Social Media Policy

While the Company recognises the benefits of social media engagement in reaching its 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 could affect its reputation.

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. It is supported by Committees that have the necessary skills and knowledge to discharge their duties and responsibilities effectively. These Committees are primarily made up of Non-Executive Directors. Descriptions of the various Committees are provided below.

Audit Committee

The Audit Committee is responsible 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. Its duties include reviewing and reporting on the Company's internal financial controls, risk management initiatives, and governance structures.

The Committee is responsible for recommending the appointment of the auditors and reviewing and monitoring their independence and objectivity. It holds meetings at least three times a year at appropriate intervals in the financial reporting and audit cycle, and as otherwise required.

The Internal Audit and Risk function assists the Audit Committee in executing its responsibilities.

The role of the Audit Committee and the duties it fulfilled during 2022, along with membership details, are more fully described in the Report of the Audit Committee.

Remuneration Committee

In 2022, the Remuneration Committee comprised Kevin Alcock (who assumed the chairmanship after the Q3 Board cycle), Michael Kirkwood, Mirco Bardella and Jacqueline Musiitwa (who stepped down in December). The 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. A comprehensive Remuneration Report can be found on pages 58-66. The Committee met four times during the year.

Nomination Committee

The Nomination Committee is responsible for reviewing the structure, size and composition of the Board, making recommendations to the Board on 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 Chair of each of those Committees. The Nomination Committee comprises Michael Kirkwood (as Chair), David Noko and Fortune Mojapelo. The Committee met three times during the year.

ESG Committee

The ESG Committee was established in the second half of 2022 to ensure sufficient oversight of Bushveld's ESG strategy and management system, ESG risks that can affect the Company's strategy and performance, and the Company's ESG disclosures.

The ESG Committee's members in 2022 were Jacqueline Musiitwa (as Chair), David Noko, Mirco Bardella, Fortune Mojapelo, and Tanya Chikanza. Subsequent to Jacqueline's resignation from the Board in December 2022, David assumed the chairmanship. The Committee met twice during the year.

Disclosure Committee

The purpose of the Disclosure Committee is to oversee the implementation of the governance and procedures associated with the assessment, control, and disclosure of inside information in relation to the Company. The Committee meets on an ad hoc basis, as required, and consists of the Chairs of each of the other Committees and the Executive Directors. The chairmanship of the Committee rotates between its independent members.

BUILDS TRUST
PRINCIPLE 10:

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

Bushveld is committed to providing effective communication with shareholders. We attach great importance to delivering clear and transparent information on the Company's strategy, activities and financial position. Our strategies and activities for communicating with shareholders, both existing and potential, are described under Principle 2.

For other relevant stakeholders and social partners, Bushveld Minerals has developed a stakeholder engagement strategy. This provides a blueprint for building collaborative relationships and forging meaningful social compacts with host communities and various local, regional and national stakeholders in support of our strategic objectives.

More information and detail on this issue can be found in our Sustainability Report.

Report of the Audit Committee

The Audit Committee's main function is to assist the Board of Directors in the fulfilment of its responsibilities by overseeing key areas such as financial reporting, regulatory compliance and risk management. The Audit Committee's work is essential to ensuring the effectiveness of the Group's internal controls and the integrity of the Group financial statements.

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

The Audit Committee consisted of independent Non-Executive Directors Mirco Bardella (Chairman) and Kevin Alcock. Mirco and Kevin are both chartered accountants and bring a wealth of experience with them, as set out in their biographical details on page 50.

The Audit Committee meets quarterly and at other appropriate times in the financial reporting and audit cycle, if required. The Finance Director, Company Secretary, Internal Auditor and external auditor are all invited to attend the meetings. Other individuals may be invited to attend all or part of any meeting, as and when required. In fulfilling its duties, due consideration is given to applicable laws and regulations, the requirements of the AIM Rules, and the QCA Code, as appropriate.

The Chairman of the Committee reports formally to the Board of Directors on all matters within its remit and how it has discharged its responsibilities after each meeting.

Key duties of the Audit Committee include:
- Monitoring the integrity of the Group's financial statements;
- Reviewing the consistency of, and any changes to, accounting policies both on a year-on-year basis and across the 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 external auditor;
- Reviewing the Group's internal financial controls, systems of internal control, and risk;
- Reviewing the adequacy and security of the Group's whistle-blowing facilities and ensuring that appropriate investigations and follow-up action is conducted in respect of concerns raised;
- Reviewing the adequacy of the Group's systems, procedures and controls for detecting fraud, bribery and corruption;
- Making recommendations to the Board of Directors on 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.

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

Financial reporting

The Audit Committee reviewed and assessed the Group's financial reporting in the period, including its interim 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 Group financial statements.

In reviewing the Group financial statements, the Audit Committee has considered the Group's accounting policies, particularly in relation to the treatment of the accounting estimates and judgements as described on page 91. The Audit Committee reviewed the impairment assessment made by management on Vanchem cash generating unit in accordance with the requirements of the relevant accounting standards. The Audit Committee found the key judgements made by management in assessing the recoverable amount to be reasonable and the impairment loss recognised appropriate. Further details have been provided in note 14 of Group financial statements The Audit Committee reviewed the Group's cashflow forecasts taking into account its financial position, expected future performance of its operations, its debt facilities and debt service requirements, including those of the proposed refinancing of the Orion convertible loan note, its working capital and capital expenditure commitments and forecasts. The Audit Committee is confident of obtaining the support of the Company's shareholders based on the progress it is making towards the refinancing of the Orion convertible loan note and securing equity investment for the Group. The Group continue to adopt the going concern basis in preparing the consolidated financial statements. Further details have been provided in note 3 of the Group financial statements.

In addition to the publicly-released reports, the Audit 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 Group's position, performance, business model and strategy.

Internal Audit

The scope of the Internal Audit function has been summarised as below:

- Provide independent and objective assurance through evaluating the Group's governance, risk and internal control systems;
- Evaluate the adequacy and effectiveness of internal financial controls over financial reporting and internal controls in general; and
- Review the extent of compliance with laws, regulations, standards and codes.

The Audit Committee is satisfied, having considered the assurance provided by Group Internal Audit, that no significant or material issues have been identified that would render the Group's system of internal financial controls ineffective. Consequently, the Committee is of the view that reasonable assurance was provided and the financial records may be relied upon for the preparation of the Group financial statements.

External auditor

RSM UK Audit LLP (RSM) is the Group's auditor and the Audit Committee has recommended to the Board of Directors that shareholders be asked to approve the re-appointment of RSM as auditor at the Annual General Meeting.

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

- Approving the engagement of the external auditor, and reviewing and approving the annual audit plan;
- Meeting regularly with the external auditor;
- Reviewing the findings of the audit of the Group financial statements for the year ended 31 December 2022 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.

In the current period, audit fees of US$552,885 were paid in respect of audit procedures on the Group financial statements for the year ended 31 December 2022.

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, non-audit fees of GBP15,000 were paid in respect of agreed-upon procedures on the interim financial statements for the period ended 30 June 2022.

Whistle-blowing

The Group has a Whistle-Blowing Policy, coupled with a whistle-blowing reporting system (Bushveld Minerals – ethics & fraud hotline), facilitated and managed by an independent external service provider, Advance Call. The policy aims to encourage stakeholders and employees to raise any suspected breaches, irregularities or concerns, without fear of reprisal, and to provide a secure platform for stakeholders and employees to anonymously raise suspected breaches or concerns and to prompt management to investigate all the reported cases. The policy commits the Group to treat all such disclosures made in good faith, in a confidential and sensitive manner. The Group receives reports regarding any allegations made, for investigations in line with our Fraud Investigation Policy.

Ongoing communication and training are also offered to our employees on the whistle-blowing line in order to improve their awareness, and to educate them about the whistle-blowing process and associated policies. No issues were reported on the whistle-blowing hotline during the year.

Risk management and internal control

The Audit Committee is mandated to provide oversight on the Group's governance, internal control and risk management systems. 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 Group financial statements in accordance with UK-adopted International Accounting Standards.

The key elements of the Group's system of internal controls are discussed in this report.

The Group's senior executive management – the Executive Committee is responsible for managing and monitoring the risks under the stewardship of the Group Head: Internal Audit and Risk, and the Audit Committee actively reviews the key risks and mitigating controls. The Audit Committee's review of the system of internal controls is supplemented by reports from the internal and external auditors regarding issues identified during their engagement, particularly those relating to control weaknesses and the responses from management.

Mirco Bardella
Chairman of the Audit Committee
20 June 2023

2022 Remuneration Report

PART 1: BACKGROUND STATEMENT FROM THE REMUNERATION COMMITTEE CHAIRMAN

Dear Shareholders,

I am pleased to present my first Remuneration Report for Bushveld Minerals on behalf of the Remuneration Committee (the "Committee"). I joined the Board and the Committee in March 2022 and assumed the role of Chairman of the Committee in the third quarter. Mirco Bardella also joined the Committee as a member. I want to thank my predecessor, Michael Kirkwood, for his valuable years of service as the Committee Chairperson.

It is important to note that, since Bushveld is not subject to the Johannesburg Stock Exchange listing requirements, the policy and implementation reports are not put to non-binding shareholder votes.

In line with our planned actions to simplify our approach to remuneration, we have also simplified the disclosure in this year's report whilst maintaining the same level of transparency. This report aims to ensures that shareholders and stakeholders fully understand the approach to remunerating Executive Directors, Non-Executive Directors, other executives, and the wider employee base, and how this approach aligns to the Company's vision and strategy.

The remuneration outcomes for FY2022 are as follows: Executive Directors were not awarded any short-term incentives ("STIs") and the 2019 long-term incentive ("LTI") performance awards did not vest. The 2022 LTI performance awards were approved in November 2022. The Non-Executive Directors were not awarded increases, as Board members and Committee Chairs volunteered a 10 and 20 percent reduction in fees respectively for FY2022. The reduction in fees in FY2022 was to accommodate the transition and overlap of Board members with four new Directors joining the Board and three Directors, including the Chairman retiring from the Board.

ROLE OF THE COMMITTEE AND KEY DECISIONS TAKEN

The Committee was established by the Bushveld Minerals Board. The Committee's main purpose is to ensure that the remuneration policies, frameworks and practices are aligned with the Company's strategy, objectives and values in order to drive long-term shareholder value.

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 all compensation matters, the Committee retains full discretion to amend pay outcomes in light of performance and reasonableness. In order to discharge its responsibility, 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.

In the 2022 financial period, the Committee executed on their various duties as set out in the Committee's terms of reference, including:

Group-wide remuneration matters

- Reviewed the Group's pay scales.
- LTI performance conditions and performance awards for FY2022.
- Considered fair and responsible pay (see details below).
- Reviewed retirement and risk benefits across the Group.
- Approved STI targets for all Group companies.
- Reviewed the mission-critical roles.
- Approved increases and adjustments for executives, management, and employees.
- Approved the STI and LTI rule amendments relating to unsettled awards and payment of a bonus during the notice period or termination date.
- Performed progress testing pertaining to the 2019 performance share award.
- Aligned the annual performance increase and annual performance bonus payment dates with the release of financial results.
- Reviewed production bonus and annual performance bonus metrics for operations (Vametco and Vanchem).
- Consolidated the provident fund and risk benefits under a single administrator, thereby reducing the investment and management fees.

SHAREHOLDER ENGAGEMENT

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

FUTURE FOCUS AREAS

- In FY2023, the focus is to continue embedding and strengthening the Group's remuneration and performance philosophy into the wider people management framework.
- Simplification of the reward structure which will entail the removal of the deferred STI and re-calibration of the STI and LTI awarded as performance shares. These changes will be implemented during FY2024.
- Review the existing performance management framework.
- Consider the introduction of a total reward statement for employees to better explain our employee value proposition.

REMUNERATION ADVISORS

The Committee used 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. Constructive input is valued and appreciated as we continue to improve the remuneration system. On behalf of the Committee, I thank you for your continued support and feedback regarding our remuneration framework.

Kevin Alcock
Chairman of the Remuneration Committee
20 June 2023

2022 Remuneration Report *continued*

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 Committee aims for the policy to be rolled-out to all subsidiaries where it makes sense, taking into account existing contractual obligations and terms and conditions of employment. The Remuneration Policy follows the general principles of the QCA code and is anchored on the following remuneration philosophy statements and principles:

Total guaranteed remuneration is primarily set between the lower quartile and the median in the relevant market.

Incentive-based rewards are earned by achieving stretch performance conditions consistent with shareholder interests over the short, medium and long term.

ENCOURAGE A CULTURE THAT SUPPORTS SUSTAINABLE AND ENTREPRENEURIAL BUSINESS GROWTH.

PROMOTE THE ACHIEVEMENT OF STRATEGIC OBJECTIVES WITHIN THE ORGANISATION'S RISK APPETITE.

Remuneration practices are aligned with corporate strategy.

Incentive plans, performance measures and targets are structured to operate effectively throughout the business cycle and include an overall cap.

STIs relate to financial and ESG measures.

LTIs include measures of free cash flow margin and total shareholder return.

PROMOTE POSITIVE OUTCOMES ACROSS THE ECONOMIC, SOCIAL AND ENVIRONMENTAL CONTEXT IN WHICH THE GROUP OPERATES.

PROMOTE A CULTURE OF RESPONSIBLE CORPORATE CITIZENSHIP.

Remuneration is aimed at being fair and responsible.

The Remuneration Policy, principles and benchmarking approaches will be transparent.

The design of long-term incentives is prudent and does not expose shareholders to unreasonable financial risk.

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. "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, and 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:

- All variable pay is subject to the achievement of performance metrics, carefully calibrated and approved by the Committee, ensuring a close alignment with shareholder value creation over the performance period;
- 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;
- 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;
- The Group is committed to eliminating any unfair or unjustified differentiation within its remuneration implementation;

- 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;
- Vertical fairness is applied by assessing the pay ratio between the CEO and the pay levels of employees below the executive level – this is monitored by way of tools such as the Gini coefficient; and
- Pay is well administered, with employees paid accurately, on time and in a way that is convenient.

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 STIs and LTIs.

Below is a summary of the policy as it applies to designated employees in the organisation (exclusions as explained above):

Total guaranteed pay, comprising fixed cash salary plus benefits

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. TGP consists of a cash package and benefits which include a Medical Aid, Retirement Fund, Group Life Cover, Disability Benefit and Death-in-Service-Benefit. 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.

For executives, the benchmark is derived from a mix of foreign and South African listed companies with a similar profile to that of Bushveld Minerals. Other employees are benchmarked against the mining circle of the REMchannel® remuneration survey.

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 July for Corporate, Vanchem and Vametco employees.

Short-term incentives

Middle management employees and above participate in the STI. Monthly cash production bonuses are in place for employees represented in the bargaining counsel. The STI takes the form of a bottom-up structure, determined as the sum of business and personal performance and calculated as:

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

Earning potential:

The on-target incentive percentages are determined per grade and expressed as a percentage of an employee's qualifying TGP and relates to the potential STI that can be earned should on-target performance be achieve for the performance period. Current on-target cash STI is 45 percent of TGP for the CEO and FD.

Weightings and performance measures:

A combination of business (using a combination of financial and non-financial measures) 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. The CEO and FD's performance is weighted 80 percent towards business measures and 20 percent towards personal measures. The applicable targets are disclosed below.

As a result of the volatility in the market of the vanadium price and exchange rate, the Committee implemented a collar and cap approach for the "consolidated economic profit" target. The intention of the collar and cap on the vanadium price and foreign exchange rate is to ensure that management are partially insulated from factors that are beyond their control on both the upside and downside.

The personal score (with a 20 percent weighting) ranges between zero percent and 150 percent and will be dependent on the personal performance rating of the employee for the relevant financial year. 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.

For FY2023, the collar and cap for the Vanadium price is set at US$35-US$45 while the exchange rate was set at R14.45 to $1 with a tolerance level of 10 percent up and down.

2022 Remuneration Report *continued*

PART TWO: REMUNERATION POLICY CONTINUED

2023 STI PERFORMANCE TARGETS:

The following Group financial and non-financial targets will apply for the year:

		BUSINESS MEASURES: 80% weighted score			
Key performance area	Weighting	KPI	Threshold	On target	Stretch
Consolidated economic profit	100%	RONA vs WACC	RONA = WACC	RONA = WACC + 1.5%	RONA = WACC + 3.0%
Comprehensive ESG	**20%**				
	100%	Compliance to IFC Environmental and Social Performance Standards	n/a	100%	n/a
Occupational health and safety	**25%**				
	30%	Total Recordable Injury Frequency Rate (TRIFR)	≥2.5% performance improvement	≥5% performance improvement	≥10% performance improvement
	30%	Lost time injury	9	6	3
	20%	New occupational disease cases (No)	2	1	0
	20%	ISO 45001 Certification	0	Gap Audit (Stage 1)	Certified
Environment	20%	Significant environmental incidents	6	5	4
	20%	Major environmental incidents	2	1	0
	20%	Environmental non-compliance fines/ directives	2	1	0
	20%	Environmental authorisations	80%	90%	100%
	20%	ISO 14001 certifications (Vametco)/ ISO 9001 accreditation (Vanchem)	Retained with major non-conformances	Retained with more than 5 minor non-conformances	Retained with less than 5 minor non-conformances
Social licence to operate	**20%**				
	100	Acquire and maintain social licence to operate.	Compliance to applicable regulatory frameworks (MCII, B-BBEE and DTI Codes, etc)	Additional: Adherence to MCIII plan milestones and improvement on previous year ratings on DTI Scorecards	Additional: Effective cross-functional internal forums such as transformational forums inclusive of Business Unit Management, Finance, Procurement, HR and Stakeholder Engagement
Governance	**15%**				
	100%	Adherence to the QCA Code	n/a	Full adherence to the QCA Code	n/a

The personal score (with a 20 percent weighting) ranges between zero percent and 150 percent and will be dependent on the personal performance rating of the employee for the relevant financial year. 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.

Long-term incentives

The Company makes use of a conditional share plan (CSP). The CSP comprises of deferred bonus awards and performance awards – both awarded as conditional rights to shares.

Deferred bonus awards are only awarded if an STI was earned and will be removed from the policy with effect from FY2024.

Eligible employees (middle management and above) may receive performance awards which 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. In addition, at the discretion of the Committee, 50 percent of vested performance shares are subjected to additional holding periods of one year (25 percent of the shares) and two years (the remaining 25 percent) during which they cannot be disposed of, post vesting retrospectively. During the holding period the vested shares may also be subject to claw-back.

The Company voluntarily imposed a dilution limit for the CSP: up to 5 percent 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.

The targets for the FY2023 CSP performance awards are as follows:

Measure	Weighting	Threshold (50% vesting)	Target (100% vesting)	Stretch (up to 250% vesting)
Free cash flow conversion	40%	90% x budget	budget	110% x budget
Absolute TSR	60%	US-based COE	US-based COE + 3%	US-based COE + 10%

PACKAGE DESIGN

The Remuneration Policy is linked to our strategy and is an enabler for the achievement of the Group's KPIs. In line with Bushveld's overall remuneration philosophy, the largest portion of the CEO's and FD's total reward, in the scenario of stretch performance, is weighted towards the stretch vesting of the performance LTI award. Consequently, to ensure that a strong pay for performance link is sustained, a stretch LTI outcome is dependent on a significant delivery of total shareholder return. However, to ensure that the principle of fair and responsible pay is maintained and to mitigate against a windfall gain outcome, the Committee retains full discretion to amend pay outcomes in the light of performance and reasonableness.

The structure of the remuneration package supports the Group's strategic objectives and is made up of fixed and variable remuneration. For FY2023, the package design for the CEO and FD will include TGP, STI and LTI (performance awards). The on-target allocation percentages to factor in the removal of the deferred STI, apply from FY2024 and the new package design will be presented in the next remuneration report. Readers are referred to part 3 of the report for actual outcomes relating to FY2022.

FURTHER DETAIL RELATING TO EXECUTIVES AND DIRECTORS

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 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 (CEO)	200%
Finance Director (FD)	175%
Other executives	150%

The CEO and FD's actual shareholding levels are set out in part 3 below.

2022 Remuneration Report *continued*

PART TWO: REMUNERATION POLICY CONTINUED

Malus and claw-back Policy

Variable remuneration is subject to malus and claw-back. The purpose of this policy is to give the Board the discretion to recoup vested, settled and/or paid incentives (also referred to as "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 percent of vested LTIs may be subject to claw-back as a post vesting recoupment of paid and vested incentives; and
- LTIs that are subject to a holding period will be subject to claw-back as follows: 25 percent can be clawed back for a one-year period post vesting and the final 25 percent for a two-year period post vesting.

Executive employment contracts and termination of employment

All newly appointed executives' contracts include a six-month restraint period. The STI and LTI make a distinction between fault and no-fault terminations as follows:

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 adjusted for performance. The unvested or unpaid portion will lapse.

NON-EXECUTIVE DIRECTOR FEES

Non-Executive Directors are appointed to the Bushveld Minerals Group based on their ability to contribute competence, insights and experience appropriately to assist 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 (US$ 609,459) per annum, or such higher amount as may be determined by ordinary resolution (excluding amounts payable under any other provisions of the Articles). The fees paid to Non-Executive Directors did not exceeded the above threshold in the current financial year.

The current approved fee structure was as follows:

Board Position	Annual fee – US$
Chairperson	92,848
Non-executive director	49,519
Senior non-executive director	61,898

Board Committee Chairperson	Annual fee – US$
Remuneration Committee	6,190
Audit Committee	6,190
Nominations Committee	3,095
Environmental, Social and Governance (ESS)Committee	6,190
Disclosure Committee	–

PART THREE: REMUNERATION IMPLEMENTATION REPORT

Remuneration paid to Executive Directors during the year: Single figure of remuneration table

The Company's increase cycle has been changed to allow for the finalisation of the financial results prior to increases being awarded. Increases will therefore be made in July of 2023 and reported retrospectively in the 2023 report. Similar to FY2021, no cash STI was payable for FY2022, this also resulted in no deferred STI (bonus shares awards) for the FY2022 period. The FY2022 performance awards were approved during November 2022.

As far as historic awards are concerned:

- The 2019 performance awards whose performance period was extended to 31 December 2022 did not vest due to the non-fulfilment of performance conditions
- The July 2021 award of bonus shares were not settled to the executives due to a prolonged closed period and insider trading rules.

Name	Year	Guaranteed pay US$	Benefits US$	STI US$	LTI Reflected US$	Other US$	Total single figure of Remuneration US$
Executive Directors							
F. Mojapelo	2022	374,280	–	–	–	–	374,280
	2021	424,067	–	–	–	–	424,067
T. Chikanza	2022	280,647	–	–	–	–	280,647
	2021	318,050	–	–	–	–	318,050

1. All amounts for the 2022 single figure disclosure were converted to USD using the average exchange rate of 16.32 for the 2022 financial year (2021: 14.7854).
2. No cash STI were earned in relation to the 2022 financial year.
3. No bonus shares were earned in relation to the 2022 financial year and the performance awards whose performance period ended in 2022 did not vest

Table of unvested awards

Names	Award date	Vesting date	Opening balance on 1 Jan 2021	Granted during 2021	Forfeited during 2021	Settled during 2021	Closing balance on 31 Dec 2021	Cash value of receipts 2021 (US$)[1]	Estimated closing fair value on 31 Dec 2021 (US$)[2]	Granted during 2022	Forfeited during 2022[3]	Settled during 2022[4]	Closing balance on 31 Dec 2022	Cash value of receipts 2022 (US$)[1]	Estimated closing fair value on 31 Dec 2022 (US$)[5]
Executive directors															
F Mojapelo															
CSP awards:															
Performance share award	Oct–19	Oct–22	678,572	–	–	–	678,572	–	–	–	678,572	–	–	–	–
Performance share award	Nov–22	May–25	–	–	–	–	–	–	–	1,573,556	–	–	1,573,556	–	93,217
Bonus share award	Jul–20	50% in Dec 2020 and 50% in June 2021	440,372	–	–	(440,372)	–	–	–	–	–	–	–	–	–
Bonus share award	Jul–21	75% in Dec 2021 and 25% in June 2022	–	827,850	–	–	827,850	–	99,342	–	–	–	827,850	–	49,041
T Chikanza															
CSP awards:															
Performance share award	Nov–22	May–25	–	–	–	–	–	–	–	1,179,877	–	–	1,179,877	–	69,895
Bonus share award	Jul–21	75% in Dec 2021 and 25% in June 2022	–	623,838	–	–	623,838	–	74,861	–	–	–	623,838	–	36,956

1. Includes the proceeds from the awards settled during the year based on the market value on vesting date.
2. The performance share awards and bonus share awards were included in 2021 at the 2021 year end share price of $0.12 with an estimated vesting percentage of 0% for the performance shares and 100% for the bonus shares.
3. The performance share awards in October 2019 were forfeited due to performance conditions not being met.
4. The settlement of the July 2021 bonus shares were delayed due to the extended closed period.
5. The share awards were included in 2022 at the 2022 year end share price of $0.06 with an estimated vesting percentage at target of 100% for performance shares and 100% for bonus shares.

2022 Remuneration Report *continued*

PART THREE: REMUNERATION IMPLEMENTATION REPORT CONTINUED

Minimum shareholding requirements

Executives are given three years from the date of adoption of the policy, or the date of their employment, to build up the required shareholding. The FD was not able to build up her shareholding due to the prolonged closed period and in compliance with insider trading regulations. The current levels of ownership are depicted below:

Executives	% of TGP held in shares (as at 31 December 2022)	MSR target and target date
F. Mojapelo	589%	200% (31 Dec 2021)
T. Chikanza	0%	175% (1 Oct 2022)

Non-executive director fees paid during the year

The fees paid during 2022 compared to 2021 are disclosed below.

		2022 fees received by Non-Executive Directors (US$)					
Non-Executive Directors	Board	Remuneration Committee Chair	Audit Committee Chair	Nomination Committee Chair	ESG Committee Chair	Total fees received 2022	Total fees received 2021
Ian Watson[5]	50,637	–	–	1,501	–	52,138	122,437
Michael Kirkwood[6]	66,684	2,476	1,238	975	–	71,373	92,299
Jeremy Friedlander[4]	11,142	–	–	–	–	11,142	66,034
Anthony Viljoen[1]	17,998	–	–	–	–	17,998	66,034
David Noko[2]	33,425	–	–	–	–	33,425	–
Kevin Alcock[3]	44,567	2,476	–	–	–	47,043	–
Mirco Bardella[3]	44,567	–	3,714	–	–	48,281	–
Jacqueline Musiitwa[3,7]	33,324	–	–	–	1,023	34,347	–

1. Anthony Viljoen retired from the Board on 27 May 2022.
2. David Noko was appointed to the Board as an independent Non-Executive Director on 27 May 2022.
3. Kevin Alcock, Mirco Bardella and Jacqueline Musittwa were appointed to the board as independent Non-Executive Directors 17 March 2022.
4. Jeremy Friedlander retired from the Board on 17 March 2022.
5. Ian Watson retired from the Board on 8 August 2022.
6. Michael Kirkwood assumed the role of Interim Chair of the Board on 8 August 2022.
7. Jacqueline Musiitwa retired from the Board on 16 December 2022.

Directors' Report

The Directors of Bushveld Minerals Limited hereby present their report together with the consolidated financial statements for the year ended 31 December 2022.

PRINCIPAL ACTIVITIES, BUSINESS REVIEW AND FUTURE DEVELOPMENTS

Bushveld Minerals is a vertically-integrated primary vanadium producer. It is one of only three primary vanadium producers, with ownership of two of the world's four operating primary vanadium processing facilities. Bushveld offers a compelling exposure to vanadium because it operates across both the upstream and downstream value chains through Bushveld Vanadium and Bushveld Energy.

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.

RESULTS AND DIVIDEND

The Group's results show a loss before tax for the year of US$36.8 million. Consequently, the Directors will not be recommending the declaration of a dividend.

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 23 of the financial statements. 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 during the year and to date are as follows:

Fortune Mojapelo	Chief Executive Officer
Tanya Chikanza	Finance Director
Michael J. Kirkwood	Chairman and Independent Non-Executive Director (appointed Chairman 8 August 2022)
Kevin Alcock	Independent Non-Executive Director (appointed 16 March 2022)
Mirco Bardella	Independent Non-Executive Director (appointed 16 March 2022)
David Noko	Independent Non-Executive Director (appointed 26 May 2022)
Jacqueline Musiitwa	Independent Non-Executive Director (appointed 16 March 2022, resigned 19 December 2022)
Ian Watson	Chairman and Independent Non-Executive Director (retired 8 August 2022)
Anthony Viljoen	Non-Executive Director (retired 26 May 2022)
Jeremy Friedlander	Independent Non-Executive Director (retired 16 March 2022)

DIRECTORS' INTERESTS

The Directors' beneficial interests in the shares of the Company at 28 April 2023. were:

	Ordinary shares of 1p each 28 April 2023	Ordinary shares of 1p each 31 December 2021
Fortune Mojapelo	13,253,794	13,253,794
Michael Kirkwood	300,000	300,000
Kevin Alcock	3,035,809	–

Fortune Mojapelo held 9,173,794 ordinary shares in Bushveld Minerals directly and has a beneficial interest in a further 8,160,000 shares held through VM Investment Company (Pty) Ltd, a company in which he has a 50 percent interest, resulting in a total of 13,253,794 shares.

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.

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 37 of the financial statements.

AUDITOR

The Company's auditor is RSM UK Audit LLP.

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.

By order of the Board.

K Bredin
Company Secretary
20 June 2023

Statement of Directors' Responsibilities

The Directors are responsible for preparing the Annual Report and the Group 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 and have elected under Guernsey company law to prepare Group financial statements in accordance with UK-adopted International Accounting Standards.

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 period and of the profit or loss of the Group for that period and are required by UK-adopted International Accounting Standards to present fairly the financial position and performance of the Group.

In preparing the Group financial statements, the Directors should:
(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 UK-adopted International Accounting Standards; and
(iv) Prepare the Group 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 Group financial statements comply with the requirements of the Companies (Guernsey) Law 2008. The Directors are also responsible for safeguarding the assets of the Group and hence for 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.

Independent Auditor's Report to the members of Bushveld Minerals Limited

OPINION

We have audited the financial statements of Bushveld Minerals Limited and its subsidiaries (the 'group') for the year ended 31 December 2022 which comprise Consolidated Statement of Profit or Loss, Consolidated Statement of Comprehensive Loss, Consolidated Statement of Financial Position, Consolidated Statement of Changes in Equity, Consolidated Statement of Cash Flows and notes to the financial statements, including significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and UK-adopted International Accounting Standards.

In our opinion, the financial statements:

- give a true and fair view of the state of the group's affairs as at 31 December 2022 and of the group's loss for the year then ended;
- are in accordance with UK-adopted International Accounting Standards; 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.

SUMMARY OF OUR AUDIT APPROACH

Key audit matters	**Group** – Impairment of property, plant and equipment
Materiality	**Group** – Overall materiality: $1,850,000 (2021: $2,070,000) – Performance materiality: $1,390,000 (2021: $1,550,000)
Scope	Our audit procedures covered 100% of revenue, 95.4% of total assets and 94.6% of loss before tax.

KEY AUDIT MATTERS

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the group financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) we identified, including 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.

In addition to the matter described in the Material uncertainty related to going concern section we have determined the matter described below to be the key audit matter to be communicated in our report.

Independent Auditor's Report to the members of Bushveld Minerals Limited continued

IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT

Key audit matter description	The Vanchem cash generating unit has experienced lower than anticipated production levels and the group recognised an impairment loss of US$17.27m in the year to 31 December 2022, resulting in a carrying value of property, plant and equipment of US$127.4m. As a result, there is a risk that the carrying value of the group's property, plant and equipment may be materially misstated due to the valuation of the recoverable amount of the Vanchem cash generating unit. The use of estimates and judgements in respect of impairment is disclosed in the "Use of estimates and judgements" section of note 3 on page 91 and details of property, plant and equipment are disclosed in note 14 on page 96-97. This is considered to be a Key Audit Matter due to the use of significant management estimates and judgements in estimating the recoverable amount of the assets based on long-term forecasts which require the use of assumptions, including future vanadium price, production volumes, foreign exchange rates, costs and the discount rate.
How the matter was addressed in the audit	Our work included: – Visiting the key operational locations of the cash generating unit; – Considering the appropriateness of the application of the fair value less costs of disposal model, to determine recoverable value; – Checking the integrity and arithmetic accuracy of the recoverable value calculation prepared by management and as approved by the Board of directors; – Challenging management on the reasonableness of the assumptions made in the forecasts, particularly in respect of production levels, vanadium prices, operating costs, capital expenditure and the discount rate; – Corroborating the reasonableness of assumptions and explanations provided by management to supporting information where available; – Discussing our findings with management and the Audit Committee; – Reviewing the accuracy and completeness of disclosures made in the financial statements in respect of impairment.

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. Based on our professional judgement, we determined materiality as follows:

	Group
Overall materiality	US$1,850,000 (2021: US$2,070,000)
Basis for determining overall materiality	5% of results before tax averaged over the past three years
Rationale for benchmark applied	As a listed entity, result before tax is considered to be the most appropriate benchmark for users of the financial statements. A three-year average is appropriate given the volatility caused by the Vanadium price.
Performance materiality	US$1,390,000 (2021: US$1,550,000)
Basis for determining performance materiality	75% of overall materiality
Reporting of misstatements to the Audit Committee	Misstatements in excess of US$92,800 and misstatements below that threshold that, in our view, warranted reporting on qualitative grounds.

AN OVERVIEW OF THE SCOPE OF OUR AUDIT

The group consists of 19 components, primarily located in Guernsey and South Africa. There are also operations of insignificant components in Mauritius, Madagascar, United States of America and United Kingdom.

The coverage achieved by our audit procedures was:

	Number of components	Revenue	Total assets	Loss before tax
Full scope audit	4	100%	89.9%	92.5%
Specific audit procedures	2	0%	5.5%	2.1%
Total	**6**	**100%**	**95.4%**	**94.6%**

Analytical procedures at group level were performed for the remaining 13 components.

Of the above, full scope audits for 2 components and specific audit procedures for 1 component were undertaken by component auditors.

Specific audit procedures for 2 components were undertaken in respect of property, plant and equipment and intangible assets respectively, due to their significance to the total assets of the group.

MATERIAL UNCERTAINTY RELATED TO GOING CONCERN

We draw attention to note 3 in the financial statements, which indicates that the group is dependent upon refinancing a convertible loan note and the receipt of additional funding, both of which have yet to be confirmed. As stated in note 3, these events or conditions, along with the other matters as set forth in note 3, indicate that material uncertainties exist that may cast significant doubt on the group's ability to continue as a going concern. Our opinion is not modified in respect of this matter.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate. Our evaluation of the directors' assessment of the group's ability to continue to adopt the going concern basis of accounting included:

- Reviewing the group's cashflow forecasts, including challenge of the forward-looking assumptions used by management in their assessment;
- Reviewing the impact of mitigating options that may be available to management and considering the level of uncertainty inherent to those options;
- Consideration of the timing of forecasted repayments of borrowings and interest;
- Discussion with management on the funding options available to the group; and
- Reviewing the accuracy and completeness of disclosures in the financial statements.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

OTHER INFORMATION

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report. Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

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 course of 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 this gives rise to a material misstatement in the financial statements themselves. 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.

Independent Auditor's Report to the members of Bushveld Minerals Limited continued

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 68, the directors are responsible for the preparation of the 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.

THE EXTENT TO WHICH THE AUDIT WAS CONSIDERED CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities are instances of non-compliance with laws and regulations. The objectives of our audit are to obtain sufficient appropriate audit evidence regarding compliance with laws and regulations that have a direct effect on the determination of material amounts and disclosures in the financial statements, to perform audit procedures to help identify instances of non-compliance with other laws and regulations that may have a material effect on the financial statements, and to respond appropriately to identified or suspected non-compliance with laws and regulations identified during the audit.

In relation to fraud, the objectives of our audit are to identify and assess the risk of material misstatement of the financial statements due to fraud, to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud through designing and implementing appropriate responses and to respond appropriately to fraud or suspected fraud identified during the audit.

However, it is the primary responsibility of management, with the oversight of those charged with governance, to ensure that the entity's operations are conducted in accordance with the provisions of laws and regulations and for the prevention and detection of fraud.

In identifying and assessing risks of material misstatement in respect of irregularities, including fraud, the group audit engagement team and component auditors:

- obtained an understanding of the nature of the industry and sector, including the legal and regulatory frameworks, that the group operates in and how the group is complying with the legal and regulatory frameworks;
- inquired of management, and those charged with governance, about their own identification and assessment of the risks of irregularities, including any known actual, suspected or alleged instances of fraud;
- discussed matters about non-compliance with laws and regulations and how fraud might occur including assessment of how and where the financial statements may be susceptible to fraud.

All relevant laws and regulations identified at a group level and areas susceptible to fraud that could have a material effect on the consolidated financial statements were communicated to component auditors. Any instances of non-compliance with laws and regulations identified and communicated by a component auditor were considered in our group audit approach.

The most significant laws and regulations were determined as follows:

Legislation/Regulation	Additional audit procedures performed by the Group audit engagement team included:
UK-adopted International Accounting Standards; **The Companies (Guernsey) Law, 2008; AIM listing rules.**	Review of the financial statement disclosures and testing to supporting documentation; Completion of disclosure checklists to identify areas of non-compliance.
Tax compliance regulations	Inspection of advice received from internal and external tax advisors where applicable.
Mining Charter of South Africa and associated laws	Enquiry of management as to whether any breaches had been identified; Review of supporting documentation where relevant.
UK Bribery Act	Enquiry of internal and external legal advisors; Inspection of policies and procedures, internal reports and minutes of meetings of the Board, Committees and management.

The areas that we identified as being susceptible to material misstatement due to fraud were:

Risk	Audit procedures performed by the Group audit engagement team:
Revenue recognition	Matching of sales to third party cash receipts, to evidence occurrence and accuracy; Tests of control in respect of occurrence and accuracy; and Testing of transactions before and after the year-end date, to determine whether revenue is recognised in the correct period.
Impairment of property, plant and equipment	See the Key audit matters section of this report for work performed on property plant and equipment.
Management override of controls	Testing the appropriateness of journal entries and other adjustments; Assessing whether the judgements made in making accounting estimates are indicative of a potential bias; and Evaluating the business rationale of any significant transactions that are unusual or outside the normal course of business.

A further description of our responsibilities for the audit of the financial statements is included in appendix 1 of this auditor’s report. This description, which is located at page 74, forms part of our auditor’s report.

USE OF OUR 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

20 June 2023

Appendix 1: Auditor's responsibilities for the audit of the 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. We include an explanation in the auditor's report of the extent to which the audit was capable of detecting irregularities, including fraud.
- 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 the use of the going concern basis of accounting is appropriate and no material uncertainties have been identified, we report these conclusions in the auditor's report. 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 as applied to listed entities, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

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 period 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.

We are required to include in the auditor's report an explanation of how we evaluated management's assessment of the group's ability to continue as a going concern and, where relevant, key observations arising with respect to that evaluation.

Consolidated Statement of Profit or Loss

	Notes	2022 US$ '000	2021 Restated* US$ '000
Revenue	5	**148,448**	106,857
Cost of sales		**(108,304)**	(102,782)
Gross profit		**40,144**	4,075
Other operating income		**2,733**	2,619
Impairment losses	13, 14	**(23,965)**	(2,439)
Selling and distribution costs		**(9,270)**	(6,406)
Other mine operating costs		**(2,723)**	(3,224)
Idle plant costs		**(6,725)**	(3,387)
Administration expenses	7	**(20,328)**	(20,518)
Operating loss		**(20,134)**	(29,280)
Finance income	8	**494**	935
Finance costs*	9	**(14,148)**	(13,308)
Other losses	10	**(818)**	(1,902)
Fair value gain on derivative liability*	28	**2,934**	9,010
Share of loss from investments in joint ventures	18	**(5,112)**	(4,351)
Loss before taxation		**(36,784)**	(38,896)
Taxation	11	**1,345**	4,671
Loss for the year		**(35,439)**	(34,225)
Loss attributable to:			
Owners of the parent		**(38,968)**	(32,892)
Non-controlling interest		**3,529**	(1,333)
		(35,439)	(34,225)
Loss per ordinary share			
Basic loss per share (cents)	12	**(3.07)**	(2.74)
Diluted loss per share (cents)	12	**(3.07)**	(2.74)

* Refer to note 36 for details of restatement.

The accounting policies on pages 81 to 92 and the notes on pages 80 to 119 form an integral part of the consolidated financial statements.

Consolidated Statement of Comprehensive Loss

	Notes	2022 US$ '000	2021 Restated* US$ '000
Loss for the year		**(35,439)**	(34,225)
Consolidated other comprehensive income/(loss):			
Items that will not be reclassified to profit or loss:			
Losses on valuation of investments in equity instruments		–	(3,772)
Other fair value movements		**140**	14
Total items that will not be reclassified to profit or loss		**140**	(3,758)
Items that may be reclassified to profit or loss:			
Currency translation differences		**(15,712)**	(9,713)
Other comprehensive loss for the year net of taxation		**(15,572)**	(13,471)
Total comprehensive loss		**(51,011)**	(47,696)
Total comprehensive loss attributable to:			
Equity holders		**(53,323)**	(48,031)
Non-controlling interest		**2,312**	335
		(51,011)	(47,696)

* Refer to note 36 for details of restatement.

The accounting policies on pages 81 to 92 and the notes on pages 80 to 119 form an integral part of the consolidated financial statements.

Consolidated Statement of Financial Position

	Notes	2022 US$ '000	2021 Restated* US$ '000	2020 Restated* US$ '000
Assets				
Non-current assets				
Intangible assets	13	**53,469**	59,254	59,004
Property, plant and equipment	14	**127,409**	153,113	167,580
Investment properties	15	**2,412**	2,595	2,811
Investments in joint ventures	18	**3,151**	7,855	–
Restricted investment	21	**2,710**	–	–
Total non-current assets		**189,151**	222,817	229,395
Current assets				
Inventories	19	**54,990**	41,646	34,082
Trade and other receivables	20	**9,498**	17,642	10,425
Restricted investment	21	**–**	2,869	3,111
Current tax receivable		**–**	275	814
Financial assets	17	**3,075**	–	22,453
Cash and cash equivalents	22	**10,874**	15,433	50,541
Total current assets		**78,437**	77,865	121,426
Total assets		**267,588**	300,682	350,821
Equity and liabilities				
Share capital	23	**17,122**	16,797	15,858
Share premium	23	**127,702**	125,551	117,066
(Accumulated loss)/retained income*	23	**(39,147)**	(179)	21,567
Share-based payment reserve	24	**515**	–	375
Foreign currency translation reserve	23	**(35,346)**	(20,851)	(9,470)
Fair value reserve	23	**(1,798)**	(1,938)	12,966
Attributable to equity holders		**69,048**	119,380	158,362
Non-controlling interest		**36,583**	32,482	32,147
Total equity		**105,631**	151,862	190,509
Liabilities				
Non-current liabilities				
Post retirement medical liability	25	**1,675**	1,906	2,076
Environmental rehabilitation liabilities	26	**16,610**	18,031	17,998
Deferred consideration	27	**1,527**	1,684	1,803
Borrowings*	28	**35,272**	69,686	79,362
Lease liabilities	29	**6,721**	3,921	4,377
Deferred tax liabilities	16	**1,191**	6,014	11,550
Total non-current liabilities		**62,996**	101,242	117,166
Current liabilities				
Trade and other payables	30	**45,896**	33,081	22,066
Provisions	31	**1,714**	3,722	3,297
Borrowings*	28	**47,858**	10,211	13,337
Lease liabilities	29	**561**	564	626
Deferred consideration	27	**901**	–	3,820
Current tax payable		**2,031**	–	–
Total current liabilities		**98,961**	47,578	43,146
Total liabilities		**161,957**	148,820	160,312
Total equity and liabilities		**267,588**	300,682	350,821

* Refer to note 36 for details of restatement.

The consolidated financial statements and the notes on pages 75 to 119, were approved by the Board of Directors on the 20th of June 2023 and were signed on its behalf by:

Tanya Chikanza
Finance Director

The accounting policies on pages 81 to 92 and the notes on pages 80 to 119 form an integral part of the consolidated financial statements.

Consolidated Statement of Changes in Equity

	Share capital US$ '000	Share premium US$ '000	Foreign currency translation reserve US$ '000	Share-based payment reserve US$ '000	Convertible loan note reserve US$ '000	Fair value reserve US$ '000	(Accumulated loss)/retained income US$ '000	Total attributable to equity holders of the Group US$ '000	Non-controlling interest US$ '000	Total equity US$ '000
Opening balance as previously reported	15,858	117,066	(9,470)	375	55	12,966	28,367	165,217	32,147	197,364
Adjustments										
Restatement (note 36)	–	–	–	–	(55)	–	(6,800)	(6,855)	–	(6,855)
Restated balance at 1 January 2021*	15,858	117,066	(9,470)	375	–	12,966	21,567	158,362	32,147	190,509
Restated loss for the year*	–	–	–	–	–	–	(32,892)	(32,892)	(1,333)	(34,225)
Other comprehensive income, net of tax:										
Currency translation differences	–	–	(11,381)	–	–	–	–	(11,381)	1,668	(9,713)
Other fair value movements	–	–	–	–	–	(3,758)	–	(3,758)	–	(3,758)
Total comprehensive loss for the year	–	–	(11,381)	–	–	(3,758)	(32,892)	(48,031)	335	(47,696)
Transaction with owners:										
Issue of shares	939	8,485	–	–	–	–	–	9,424	–	9,424
Share-based payment	–	–	–	(375)	–	–	–	(375)	–	(375)
Transfer between reserves	–	–	–	–	–	(11,146)	11,146	–	–	–
Balance at 1 January 2022	**16,797**	**125,551**	**(20,851)**	–	–	**(1,938)**	**(179)**	**119,380**	**32,482**	**151,862**
Loss for the year	–	–	–	–	–	–	(38,968)	(38,968)	3,529	(35,439)
Other comprehensive income, net of tax:										
Currency translation differences	–	–	(14,495)	–	–	–	–	(14,495)	(1,217)	(15,712)
Other fair value movements	–	–	–	–	–	140	–	140	–	140
Total comprehensive loss for the year	–	–	(14,495)	–	–	140	(38,968)	(53,323)	2,312	(51,011)
Transaction with owners:										
Issue of shares	325	2,151	–	–	–	–	–	2,476	–	2,476
Share-based payment	–	–	–	515	–	–	–	515	–	515
Contribution from non-controlling interest (note 28)	–	–	–	–	–	–	–	–	1,789	1,789
Balance at 31 December 2022	**17,122**	**127,702**	**(35,346)**	**515**	–	**(1,798)**	**(39,147)**	**69,048**	**36,583**	**105,631**

* Refer to note 36 for details of restatement.

Consolidated Statement of Cash Flows

	Notes	2022 US$ '000	2021 Restated* US$ '000
Cash flows from operating activities			
Loss before taxation		**(36,784)**	(38,896)
Adjustments for:			
Depreciation property, plant and equipment (including right-of-use assets)	14	**18,475**	19,395
Share of loss from joint ventures	18	**5,112**	4,351
Remeasurement of financial liabilities	28	**–**	1,902
Fair value gain on derivative liability*	28	**(2,934)**	(9,010)
Finance income	8	**(494)**	(935)
Finance costs*	9	**14,148**	13,308
Impairment losses	13, 14	**23,965**	2,439
Other non-cash movements		**1,138**	–
Foreign exchange differences		**(6,949)**	–
Changes in working capital		**6,154**	(5,022)
Income taxes (paid)/received		**(648)**	394
Net cash generated from/(used in) operating activities		**21,183**	(12,074)
Cash flows from investing activities			
Finance income		**336**	935
Purchase of property, plant and equipment		**(18,197)**	(19,450)
Payment of deferred consideration	27	**–**	(3,874)
Purchase of investments	18	**(1,211)**	(9,988)
Purchase of exploration and evaluation assets	13	**(517)**	(929)
Disposal of financial assets held at fair value		**–**	16,147
Net cash used in investing activities		**(19,589)**	(17,159)
Cash flows from financing activities			
Finance costs	28	**(3,217)**	(2,948)
Repayment of borrowings	28	**(5,623)**	(4,732)
Proceeds from borrowings	28	**4,222**	1,336
Lease payments	29	**(728)**	(705)
Net cash used in financing activities		**(5,346)**	(7,049)
Total cash and cash equivalents movement for the year		**(3,752)**	(36,282)
Cash and cash equivalents at the beginning of the year		**15,433**	50,541
Effect of translation of foreign exchange rates		**(807)**	1,174
Total cash and cash equivalents at end of the year	22	**10,874**	15,433

* Refer to note 36 for details of restatement.

The accounting policies on pages 81 to 92 and the notes on pages 80 to 119 form an integral part of the consolidated financial statements.

Notes to the Consolidated Financial Statements

1. GENERAL INFORMATION AND PRINCIPAL ACTIVITIES

Bushveld Minerals Limited ("Bushveld" or the "Company") and its subsidiaries and interest in equity accounted investments (together the "Group") are an integrated primary vanadium producer and energy storage solutions provider. The Company 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 Oak House, Hirzel Street, St Peter Port, Guernsey, GY1 3RH.

As at 31 December 2022, 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 (Pty) Limited	2	100%	South Africa	Processing company
Pamish Investments No 39 (Pty) Limited	2	64%	South Africa	Mining right holder
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	Holding company
Bushveld Energy Limited	1	84%	Mauritius	Holding company
Bushveld Energy Company (Pty) Limited	4	100%	South Africa	Energy development
Bushveld Vametco Hybrid Mini-Grid Company (RF) (Pty) Limited	12	40%	South Africa	Energy development
Bushveld Electrolyte Company (Pty) Ltd	12	55%	South Africa	Energy development
VRFB Holdings Limited	4	50.5%	Guernsey	Holding company
Vanadium Electrolyte Rental Limited	1&4	40%&30%	UK	Energy development
Enerox Holdings Limited	14	50%	Guernsey	Holding company
Bushveld Vametco Limited	2	100%	Guernsey	Sales of vanadium
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	Mining right holder
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%	Madagascar	Power generation company
Lemur Investments Limited	3	100%	Mauritius	Holding company
Lemur SA (Pty) Ltd	3	100%	South Africa	Coal exploration

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
14. Held by VRFB Holdings Limited

2. ADOPTION OF NEW AND REVISED STANDARDS

Accounting standards and interpretations applied

In the current year, the Group has adopted the following standards and interpretations that are effective for the current financial year and that are relevant to its operations:

Amendments to IFRS 1 First time adoption of International Financial Reporting Standards ("IFRS"): Subsidiary as a first-time adopter	The amendments simplified the application of IFRS 1 by a subsidiary that becomes a first-time adopter after its parent. Subsidiary, associate or joint venture can elect to apply exemption in par D16(a) to the cumulative translation difference.
Amendments to IFRS 9 Financial Instruments: Fees in the '10 per cent' test for derecognition of financial liabilities	The amendments clarify what is included in the fees paid and fees received.
Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets: Cost of fulfilling a contract	The amendments address costs a company should include as the cost of fulfilling a contract when assessing whether a contract is onerous.
Amendments to IAS 16 Property, Plant and Equipment: Proceeds before intended use	The amendments prohibit deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management.
Amendments to IFRS 3 Business Combinations: Reference to the conceptual framework	The amendments update an outdated reference in IFRS 3 without significantly changing its requirements.

The adoption of these Standards and Interpretations, which become effective for annual periods beginning on or after 1 January 2022, had no material impact on the consolidated financial statements of the Group.

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:

Amendments to IAS 12 Income Taxes: Deferred tax related to assets and liabilities arising from a single transaction	The amendments provide recognition exemption and no longer applies to transactions that, on initial recognition, give rise to equal taxable and deductible temporary differences.
Amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors: Definition of accounting estimates	The amendments include the definition of accounting estimates to help entities to distinguish between accounting policies and accounting estimates.
Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2:	The amendments intend to help preparers in deciding which accounting policies to disclose in their financial statements.
Amendments to IAS 1 Presentation of Financial Statements: Classification of liabilities as current or non- current and non-current liabilities with covenants	The amendments may change the classification of certain liabilities as current or non-current, for example convertible debt. Entities may need to provide new disclosures for liabilities subject to covenants.
IFRS 16 Leases: Lease liability in a sale and leaseback	The amendments specify how a seller-lessee should apply the subsequent measurement requirements in IFRS 16 to the lease liability that arises in the sale and leaseback transaction.

The Directors anticipate that the adoption of these Standards and Interpretations, which become effective for annual periods beginning on or after 1 January 2023, in future periods will have no material impact on the consolidated financial statements of the Group, except for the adoption of Amendments to IAS 1 Presentation of Financial Statements: Classification of liabilities as current or non-current and non-current liabilities with covenants.

Notes to the Consolidated Financial Statements *continued*

3. SIGNIFICANT ACCOUNTING POLICIES

The principal accounting policies applied in the preparation of the consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Basis of preparation

The consolidated financial statements of the Company and its subsidiaries and interest in equity accounted investments as at and for the year ended 31 December 2022 have been prepared in accordance with the UK-adopted International Accounting Standards.

The consolidated financial statements have been prepared under the historical cost basis, except for certain financial instruments and investment properties measured at fair value. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

Going concern

The consolidated financial statements have been prepared on the going concern basis, which contemplates continuity of normal business activities and the realisation of assets and discharge of liabilities in the normal course of business.

The Group recorded a net loss after tax of US$35.44 million for the year ended 31 December 2022 (31 December 2021: US$34.22 million) and as at 31 December 2022 had cash and cash equivalents of US$10.87 million (31 December 2021: US$15.43 million) as well as total borrowings of US$83.13 million, of which US$47.85 million is due within 12 months most of which comprised of the Orion convertible loan notes (31 December 2021: total borrowing of US$79.90 million). In recent years, the Group has been loss making due to a combination of weaker vanadium prices and losses incurred whilst the refurbishment work at Vanchem was completed. The refurbished Kiln-3 was commissioned in June 2022,later than initially planned. However, due to unreliable municipal power supply and higher silica content in the ore supply, the production ramp up was slower than expected and had not reached its targeted run rate at the end of 2022.

The Orion convertible loan notes are due to mature in November 2023 and given that the current share price is lower than the conversion price, the convertible loan notes will likely require repayment or refinancing (see note 28). The Company entered into a non-binding term sheet with Orion subsequent to year-end to refinance the convertible loan notes (see note 37). The closing of the transaction is still subject to certain conditions, including South Africa Reserve Bank approval, shareholders' approval at the general meeting which the Directors urge shareholders to support and the finalisation of definitive binding documentation.

The Directors closely monitor and manage the liquidity risk of the Group by ensuring that the Group has sufficient funds for all ongoing operations. As part of the annual budgeting and long-term planning process, the Directors reviewed the approved Group budget and cashflow forecast through to 31 December 2024. The current cashflow forecast has been 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.

The Directors have performed an assessment of whether the Group would be able to continue as a going concern for at least twelve months from the date of this report. In their assessment, the Group has taken into account its financial position, expected future performance of its operations, its debt facilities and debt service requirements, including those of the proposed refinancing of the Orion convertible loan notes, its working capital and capital expenditure commitments and forecasts.

The cashflow forecast assumes that Vametco continues to perform in line with historical levels, planned maintenance shutdowns are undertaken annually, these shutdowns proceed in line with the planned timetable and no unplanned shutdowns are experienced during the going concern period.

The cashflow forecast for Vanchem takes into consideration the production levels achieved to date, the expected improvements from the arrangement concluded with the municipality to stabilise power supply as well as the arrangement concluded with a third party for the supply of low-silica high-grade ore. This forecast assumes an annual planned maintenance shutdown and these shutdowns proceed in line with the planned timetable and no unplanned shutdowns are experienced during the going concern period.

With regards to pricing, the short to medium term assumptions are that the average price achieved by the Group will be US$36.2 through to 31 December 2023 and average at US$35.5 throughout 2024. The year to date average price achieved by the group was US$37.99.

Current cashflow forecast indicates that the Group requires additional liquidity to fund its obligations and activities during the next twelve months. The Group is actively pursuing various financing alternatives to increase its liquidity and capital resources including raising capital, refinancing of debt facilities, securing additional working capital facilities, as well as disposing of assets and/or an interest therein and/or joint-venture partnerships. The Directors believe shareholders will support the capital raising endeavours to ensure the growth of the Group is positioned for, can be delivered.

The Group's ability to continue as a going concern is dependent on its ability to complete the refinance of the Orion convertible loan note, and obtain the necessary additional funding required through a capital raise or alternative funding sources. Although the Group has been successful in the past in obtaining additional liquidity, there is no assurance that it will be able to do so in the future or that such arrangements will be on terms advantageous to the Group.

These conditions indicate the existence of material uncertainties that may cast significant doubt on the Group's ability to continue as a going concern. The consolidated financial statements for the year ended 31 December 2022 have been prepared on a going concern basis as, in the opinion of the Directors, the Group will be in a position to continue to meet its operating and capital costs requirements and pay its debts as and when they fall due for at least twelve months from the date of this report. Accordingly, these consolidated financial statements do not include adjustments to the recoverability and classification of recorded assets and liabilities and related expenses that might be necessary should the Group be unable to continue as a going concern.

Basis of consolidation

The consolidated financial statements present the consolidated statement of financial position and changes therein, consolidated statement of profit or loss, consolidated statement of comprehensive loss and consolidated statement of cash flows for the Group. Where necessary, adjustments are made to the results of subsidiaries and equity accounted investments to ensure the consistency of their accounting policies with those used by the Group. Intercompany transactions, balances and unrealised profits and losses between Group companies are eliminated on 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. Where the Group's interest in a subsidiary is less than 100 percent, the Group recognises a non-controlling interest.

Disposal of subsidiaries

When the Group ceases to have control, any retained interest in the entity is remeasured 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.

Joint ventures

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Investments in joint ventures are accounted for using the equity method. Under the equity method, the share of the profits or losses of the joint venture is recognised in profit or loss and the share of the movements in equity is recognised in other comprehensive income. Investments in joint ventures are carried in the statement of financial position at cost plus post-acquisition changes in the consolidated entity's share of net assets of the joint venture. Goodwill relating to the joint venture is included in the carrying amount of the investment and is neither amortised nor individually tested for impairment. Income earned from joint venture entities reduce the carrying amount of the investment.

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.

Notes to the Consolidated Financial Statements continued

Business combinations
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 remeasured to fair value at the acquisition date; any gains or losses arising from such remeasurement 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 in profit or loss. Contingent consideration that is classified as equity is not remeasured and its subsequent settlement is accounted for within equity.

Segment reporting
Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker ("CODM"). The CODM, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Chief Executive Officer and the Executive Committee. Operating segments whose revenues, net earnings or losses or assets exceed 10 percent of the total consolidated revenues, net earnings or losses or assets, are reportable segments.

In order to determine the reportable operating segments, various factors are considered, including geographical location and managerial structure.

Functional and presentational currency
The functional currency of each entity in the Group is determined as the currency of the primary economic environment in which it operates. For the purpose of the consolidated financial statements, the results and financial position of each entity within the Group are expressed in US Dollars, which is the presentation currency for the consolidated financial statements.

Transactions denominated in foreign currencies are translated into the entity's functional currency as follows:
– Monetary assets and liabilities are translated at the exchange rate in effect at the balance sheet date;
– Non-monetary assets and liabilities are translated at historical exchange rates prevailing at each transaction date;
– Deferred tax assets and liabilities are translated at the exchange rate in effect at the balance sheet date with translation gains and losses recorded in income tax expense; and
– Revenues and expenses are translated at the average exchange rates throughout the reporting period, except depreciation, which is translated at the rates of exchange applicable to the related assets, and share-based compensation expense, which is translated at the rates of exchange applicable at the date of grant of the share-based compensation.

Exchange gains or losses on translation of transactions are included in the consolidated statement of profit or loss.

The results and financial position of all entities within the Group that have a functional currency different from the presentation currency are translated into the presentation currency as follows:
– assets and liabilities for each statement of financial position presented are translated at the closing rate;
– 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
– all resulting exchange differences are recognised in other comprehensive income and accumulated in foreign currency translation reserve.

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.

On disposal of a foreign operation, the cumulative exchange differences recognised in the foreign currency translation reserve relating to that entity up to the date of disposal are transferred to the consolidated statement of profit or loss as part of the profit or loss on disposal.

Revenue recognition - sale of goods

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 Group satisfies a performance obligation by transferring control of the promised goods or services to the customer. 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 transferring control 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 fair value of bonus shares granted to employees for nil consideration under the short-term incentive ("STI") scheme is recognised as an expense over the relevant service period, being the year to which the bonus relates and the vesting period of the shares. The fair value is measured at the grant date of the shares and is recognised in equity in the share-based payment reserve. The number of shares expected to vest is estimated based on the non-market vesting conditions.

Where shares are forfeited due to a failure by the employee to satisfy the service conditions, any expenses previously recognised in relation to such shares are reversed effective from the date of the forfeiture.

The fair value of the performance shares issued under the long-term incentive scheme ("LTI") is recognised as an expense over the vesting period. Non-vesting conditions and market vesting conditions are factored into the fair value of the performance shares granted. An option pricing model is used to measure the fair value of the performance shares.

Finance income

Interest income is recognised when it is probable that economic benefits will flow to the Group and the amount of income can be measured reliably. Interest income 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.

Current and deferred income tax

The tax expense represents the sum of the tax currently payable and deferred income tax.

The current income tax charge is calculated based on the tax laws enacted or substantively enacted at the reporting date in the countries where the Group’s subsidiaries operate and generate taxable income.

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 or loss, 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.

3. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Intangible exploration and evaluation assets

Notes to the Consolidated Financial Statements continued

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.

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 as an impairment loss in the consolidated statement of 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 of disposal and value in use) if that is less than the asset's carrying value. Impairment losses are recognised in the consolidated statement of 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 (excluding right-of-use assets)

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses, except for investment properties which are carried at fair value. Cost comprises the aggregate amount paid and the fair value of any other consideration given to acquire the asset and includes costs directly attributable to making the asset capable of operating as intended.

Depreciation on assets commences when they are available for use by the Group. Depreciation for property, plant and equipment is charged on a systematic basis over the estimated useful lives of the assets after deducting the estimated residual value of the assets, using the straight-line method. The depreciation method applied, the estimated useful lives of assets and their residual values are reviewed at least at each financial year end, with any changes accounted for as a change in accounting estimate to be applied prospectively. The depreciation charge for each period is recognised in the consolidated statement of profit or loss.

The useful life of an asset is the period of time over which the asset is expected to be used. The estimated useful lives of items of property, plant and equipment are as follows:

– Buildings and other improvements	20-25 years
– Plant and machinery	5-20 years
– Motor vehicles, furniture and equipment	3-10 years
– Decommissioning asset	Life of mine
– Waste stripping asset	21 months

Assets under construction are not depreciated.

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 derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statement of profit or loss in the year the asset is derecognised.

Impairment losses

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 ("CGU") to which the asset belongs.

In assessing whether an impairment is required, the carrying value of the asset or CGU is compared with its recoverable amount. The recoverable amount is the higher of the CGU's fair value less costs of disposal ("FVLCD") and value in use ("VIU"). Given the nature of the Group's activities, information on the fair value of an asset is usually difficult to obtain unless negotiations with potential purchasers or similar transactions are taking place. Consequently, the FVLCD for each CGU is estimated based on discounted future estimated cash flows (expressed in real terms) expected to be generated from the continued use of the CGUs using market-based commodity price and exchange assumptions, estimated quantities of recoverable minerals, production levels, operating costs and capital requirements, including any expansion projects, and its eventual disposal, based on the CGU 30 year plans and latest life of mine ("LOM") plans. These cash flows were discounted using a real post-tax discount rate that reflected current market assessments of the time value of money and the risks specific to the CGU.

Estimates of quantities of recoverable minerals, production levels, operating costs and capital requirements are sourced from the planning process, including the LOM plans, two-year budgets and CGU-specific studies.

The determination of FVLCD for each CGU are considered to be Level 3 fair value measurements in both years, as they are derived from valuation techniques that include inputs that are not based on observable market data. The Group considers the inputs and the valuation approach to be consistent with the approach taken by market participants.

Investment property

Investment property is initially measured at cost and subsequently at fair value with any change therein recognised in the consolidated statement of 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 the consolidated statement of profit or loss.

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.

Provision is made, if necessary, for slow-moving, obsolete and defective inventory.

Financial assets and liabilities

Financial assets and financial liabilities are recognised in the Group's consolidated 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.

Financial assets

Measurement

At initial recognition, the Group measures all financial assets at fair value plus, in the case of a financial asset not at fair value through profit or loss ("FVTPL"), transaction costs. Transaction costs of financial assets carried at FVTPL are expensed in the consolidated statement of profit or loss.

Financial assets are classified at initial recognition and subsequently measured at amortised cost, fair value though other comprehensive income ("FVOCI") or FVTPL.

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.

3. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Debt instruments

In order for a financial asset to be classified and measured at amortised cost or FVOCI, 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 assets that do not meet the criteria for amortised cost or FVOCI are measured at FVTPL. A gain or loss on a debt investment that is subsequently measured at FVTPL is recognised in the consolidated statement of profit or loss and presented net within other income/(expenses) in the period in which it arises.

Equity instruments

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments in OCI (however, the cumulative gain/loss on disposal is represented within equity), there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as other income when the Group's right to receive payments is established.

Changes in the fair value of financial assets at FVTPL are recognised in other income/(expenses) in the consolidated statement of profit or loss as applicable. Impairment losses (and reversal of impairment losses) on equity investments measured at FVOCI are not reported separately from other changes in fair value.

Derecognition

Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

Trade and other receivables

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, then they are recognised at fair value. The Group holds the trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently at amortised cost using the effective interest method, less any allowance for expected credit losses.

To determine the expected credit loss allowance for trade receivables, the Group applies the simplified approach permitted by IFRS 9, which requires expected lifetime losses to be recognised from initial recognition of the receivables, see note 33.6 for further details.

Other receivables consist of prepayments and deposits, which are initially recognised as non-financial assets and realised over time.

Restricted investment

Restricted investment comprises of an investment in an insurance fund. These funds are dedicated towards future rehabilitation expenditure on the mine property.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, deposits held at call with financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial liabilities

Accounts payable, accrued liabilities and borrowings are accounted for at amortised cost, using the effective interest rate method.

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.

Borrowings

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognised in profit or loss over the period of the borrowings using the effective interest method. Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down.

Borrowings are removed from the balance sheet when the obligation specified in the contract is discharged, cancelled or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in profit or loss as other income or finance costs.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period.

Borrowing costs are capitalized and allocated specifically to qualifying assets when funds have been borrowed, either to specifically finance a project or for general borrowings during the period of construction. Qualifying assets are defined as assets that require more than a year to be brought to the location and condition intended by management. Capitalization of borrowing costs ceases when such assets are ready for their intended use.

Leases

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 percent to 11 percent 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 consolidated 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.

Notes to the Consolidated Financial Statements *continued*

3. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Leases (continued)

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 Group applies IAS 36 Impairment of Assets to determine whether a right-of- use asset is impaired and accounts for any identified impairment loss.

Provisions

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 consolidated statement of profit or loss, 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 liabilities

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 are shown in the consolidated statement of profit or loss 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 consolidated statement of profit or loss 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

The preparation of consolidated financial statements in conformity with UK-adopted International Accounting Standards requires management to make judgements, estimates and assumptions that affect the reported amounts of assets, liabilities and contingent liabilities at the date of the consolidated financial statements and reported amounts of revenues and expenses during the reporting period. Estimates and assumptions are continuously evaluated and are based on management's experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Assumptions about the future and other major sources of estimation uncertainty at the end of the reporting period have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities, within the next financial year. The most significant judgements and sources of estimation uncertainty that the Group believes could have a significant impact on the amounts recognised in its consolidated financial statements are described below.

i. Impairment of non-current assets

Judgements made in relation to accounting policies

Both internal and external sources of information are required to be considered when determining the presence of an impairment indicator or an indicator of reversal of a previous impairment. Judgement is required around significant adverse changes in the business climate which may be indicators of impairment such as a significant decline in the asset's market value, decline in resources and/or reserves including as a result of geological reassessment or change in timing of extraction of resources and/or reserves which would result in a change in the discounted cash flow, and lower commodity prices or higher input cost prices than would have been expected since the most recent valuation. Judgement is also required when considering whether significant positive changes in any of these items indicate a previous impairment may have reversed.

Key sources of estimation uncertainty

If there are indications that impairment may have occurred, estimates are prepared of expected future cash flows for each group of assets. Expected future cash flows used to determine the recoverable amount of tangible assets are inherently uncertain and could materially change over time and impact the recoverable amounts. The cash flows and recoverable amount are significantly affected by a number of factors including published reserves, resources, exploration potential and production estimates, together with economic factors such as spot and future commodity prices, discount rates, foreign currency exchange rates, estimates of costs to produce products and future capital expenditure. Refer to Note 14 for key assumptions.

ii. Impairment of exploration and evaluation assets

Judgements made in relation to accounting policies

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. If there is any indication of potential impairment, an impairment test is required.

As disclosed in note 13, the Mokopane license held by the Group requires that mining operations commence prior to the end of January 2021. As at 31 December 2022 no mining has taken place at the site. Based on the conditions included in the mining right, the Group has the right to apply for an extension to the requirements to commence mining activities and an application has been submitted to the Department of Mineral Resources and Energy ("DMRE"), however a response has not yet been received.

Based on the mining right conditions, including that the Minister has to give written notice regarding a potential suspension or cancellation of the mining right and that the Group has the opportunity to provide reasons to the Minister on why this should not occur and the remedies put in place, the directors are confident that the extension will be forthcoming and the license therefore remains valid. Consequently, the directors have made a judgment that no impairment of the related intangible asset with a carrying amount of US$53.47 million is required.

iii. Environmental rehabilitation liabilities

Key sources of estimation uncertainty

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. Refer to note 26.

Notes to the Consolidated Financial Statements continued

3. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

iv. Valuation of derivative liability

Key sources of estimation uncertainty

The conversion option (embedded derivative liability) in connection with the Orion Mine Finance convertible loan note are carried at fair value. The Group engaged an independent valuation specialist which calculated the fair value of the conversion option using a Monte-Carlo simulation. The Monte-Carlo simulation captured the impact of movements in the US$/GBP exchange rate and the price per ordinary share over the life of the convertible loan note.

4. SEGMENTAL REPORTING

Bushveld Minerals Limited's operating segments are identified by the Chief Executive Officer and the Executive Committee, collectively named as the CODM. The operating segments are identified by the way the Group's operations are organised. As at 31 December 2022, the Group operated within three operating segments, vanadium mining and production, which consists of the Vametco and Vanchem operations; energy and mineral exploration activities for vanadium and coal exploration (together "Exploration"). Activities take place in South Africa (iron ore, vanadium and energy), Madagascar (coal), other African countries (energy project development) and global (battery investment, vanadium sales). Corporate includes the remaining balances within the Group.

Segment revenue and results

The following is an analysis of the Group's revenue and results by reportable segment.

Consolidated statement of profit or loss

31 December 2022	Revenues US$ '000	Cost of sales(1) US$ '000	Other costs(2) US$ '000	Administrative expenses(3) US$ '000	Impairment losses US$ '000	Operating loss US$ '000
Vanadium mining and production	148,446	(108,304)	(16,525)	(8,435)	(18,454)	(3,272)
Exploration	–	–	–	(21)	(5,137)	(5,158)
Energy	2	–	171	(952)	(374)	(1,153)
Corporate	–	–	369	(10,920)	–	(10,551)
Total	148,448	(108,304)	(15,985)	(20,328)	(23,965)	(20,134)

(1) Include depreciation of US$18.04 million.
(2) Other costs include other operating income, other mine operating costs, selling and distribution costs and idle plant costs.
(3) Include depreciation of US$0.15 million for Vanadium mining and production, US$0.10 million for Energy and US$0.18 million for Corporate.

Consolidated statement of profit or loss

31 December 2021	Revenues US$ '000	Cost of sales(1) US$ '000	Other costs(2) US$ '000	Administrative expenses(3) US$ '000	Impairment losses US$ '000	Operating loss US$ '000
Vanadium and mining production	106,857	(102,782)	(10,695)	(7,171)	(1,694)	(15,485)
Exploration	–	–	–	26	(340)	(314)
Energy	–	–	–	(808)	(405)	(1,213)
Corporate	–	–	297	(12,565)	–	(12,268)
Total	106,857	(102,782)	(10,398)	(20,518)	(2,439)	(29,280)

(1) Include depreciation of US$19.00 million.
(2) Other costs include other operating income, other mine operating costs, selling and distribution costs and idle plant costs.
(3) Include depreciation of US$0.13 million for Vanadium mining and production and US$0.26 for Corporate.

Other segmental information

	31 December 2022		31 December 2021	
	Total assets US$ '000	Total liabilities US$ '000	Total assets US$ '000	Total liabilities US$ '000
Vanadium mining and production	186,460	104,351	221,704	70,927
Exploration	53,679	38	59,340	54
Energy	17,432	10,836	8,448	5,839
Corporate	10,017	46,732	11,190	72,000
Total	267,588	161,957	300,682	148,820

5. REVENUE

Revenue from contracts with customers

	2022 US$'000	2021 US$'000
Sale of goods	148,446	106,857
Other	2	–
	148,448	106,857
Disaggregation of revenue from contracts with customers		
The Group disaggregates revenue from customers as follows:		
Sale of goods		
Local sales of vanadium - NV12	5,503	5,090
Local sales of vanadium - NV16	2,650	1,606
Local sales of vanadium - MVO	4	(140)*
Export sales of vanadium - NV12	34,939	21,721
Export sales of vanadium - NV16	99,672	71,713
Export sales of vanadium - AMV	5,678	6,867
	148,446	106,857
Other	2	–
	148,448	106,857

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.

* The negative sales amount is due to the return of MVO sold during the 2020 financial year.

6. STAFF COSTS

	2022 US$'000	2021 US$'000
Production staff	25,799	24,613
Administrative staff	7,259	8,601
Key management personnel	2,068	2,145
	35,126	35,359

Details of directors' remuneration are included in note 35 (related party transactions) and the Remuneration Report on page 58.

7. ADMINISTRATIVE EXPENSES BY NATURE

	2022 US$'000	2021 US$'000
Key management personnel	2,068	2,145
Staff costs	7,259	8,601
Depreciation of property, plant and equipment	439	393
Professional fees	6,007	5,861
Share-based payments	315	(375)
Other	4,240	3,893
	20,328	20,518

Notes to the Consolidated Financial Statements *continued*

8. FINANCE INCOME

	2022 US$'000	2021 US$'000
Bank interest	206	827
Interest on restricted investment	127	106
Other finance income	161	2
	494	935

9. FINANCE COSTS*

	Notes	2022 US$'000	2021 US$'000
Interest on borrowings	28	11,189	10,687
Unwinding of discount	26	1,726	1,915
Interest on lease liabilities	29	974	459
Other finance costs		259	247
		14,148	13,308

* Refer to note 36 for details of restatement.

10. OTHER LOSSES

	Notes	2022 US$'000	2021 US$'000
Movement in earnout estimate	27	693	–
Loss on financial instrument		125	–
Remeasurement of financial liabilities	28	–	1,902
		818	1,902

11. TAXATION

	2022 US$'000	2021 US$'000
Current income taxes		
Current income tax on profits for the year	3,294	370
Current income tax recognised for prior years	–	(13)
	3,294	357
Deferred income taxes		
Deferred income tax movement for current year	(4,659)	(5,111)
Prior year adjustment	20	83
	(4,639)	(5,028)
Income tax recovery	(1,345)	(4,671)

The income tax expense represents the sum of the tax currently payable and the deferred tax adjustment for the year.

	2022 US$'000	2021 US$'000
Loss before tax	(36,784)	(38,896)
Tax at the applicable tax rate of 28% (2021: 28%)	(10,300)	(10,891)
Tax effect on non-deductible items	1,423	606
Origination and reversal of temporary differences	(2,045)	1,477
Deferred tax asset (recognised)/not recognised	7,916	8,841
Recognised deferred tax assets - initial recognition	(17)	(5,028)
Tax rate change	(210)	–
Foreign jurisdictions subject to a different tax rate	1,888	324
Taxation recovery for the year	(1,345)	(4,671)

12. LOSS PER SHARE

Basic loss per share*

Basic loss per share is calculated by dividing the net loss attributable to equity holders of the Company by the weighted average number of ordinary shares in issue during the year excluding ordinary shares purchased by the Company and held as treasury shares.

	2022 US$'000	2021 US$'000
Numerator		
Net loss attributable to equity holders	(38,968)	(32,892)
Denominator (in thousands)		
Weighted average number of common shares	1,270,637	1,201,683
Basic loss per share attributable to equity holders (cents)	(3.07)	(2.74)

* Refer to note 36 for details of restatement.

Diluted loss per share

Due to the Group being loss making for the year, instruments are not considered dilutive and therefore the diluted loss per share is the same as basic loss per share for both financial years.

13. INTANGIBLE ASSETS

	Vanadium and Iron Ore US$ '000	Coal US$ '000	Total US$ '000
Balance, 1 January 2021	54,950	4,054	59,004
Capitalised expenditures	163	766	929
Impairment loss	(541)	–	(541)
Exchange differences	(716)	578	(138)
Balance, 31 December 2021	53,856	5,398	59,254
Capitalised expenditures	174	343	517
Impairment loss	–	(5,137)	(5,137)
Exchange differences	(561)	(604)	(1,165)
Balance, 31 December 2022	**53,469**	–	**53,469**

Mokopane Vanadium and Iron Ore Project

The Group has a 64 per cent interest in Pamish Investment No 39 Proprietary Limited ("Pamish") which holds an interest in Prospecting right 95.

The Department of Mineral Resources and Energy ("DMRE") executed a 30-year mining right on 29 January 2020 in favour of Pamish, over five farms: Vogelstruisfontein 765 LR; Vriesland 781 LR; Vliegekraal 783 LR; Schoonoord 786 LR; and Bellevue 808 LR (the "Mining Right") situated in the District of Mogalakwena, Limpopo, which make up the Mokopane Project. 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.

The Mining Right required Pamish to commence mining activities, including in-situ activities associated with the Definitive Feasibility Study ("DFS") by end of January 2021. The COVID-19 pandemic resulted in a significant delay in the commencement of the DFS and the necessary engagement with local communities required to finalise land use arrangements and, consequently, this deadline was not met. Application to the DMRE for an extension to commence mining activities has been submitted and Pamish is waiting on a response. Engagement has begun with communities to reach agreement for access to the project areas and secure a land use arrangement.

Brits Vanadium Project

The Group 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 and was executed in May 2021. The Group has also applied for Section 102 of the MPRDA and waiting for approval to incorporate NW 30/5/1/1/2/11069 PR into NW 30/5/1/1/2/11124 PR.

The Group has applied for a prospecting right 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.

A renewal application for Prospecting Right NW 30/5/1/1/2/11124 PR was granted for Great 1 Line on Farm Uitvalgrond 431 JQ Portion 3.

13. INTANGIBLE ASSETS (CONTINUED)

Notes to the Consolidated Financial Statements continued

Coal

Coal Exploration licences have been issued to Coal Mining Madagascar SARL a 99 per cent 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. The Imaloto Coal Project was impaired during the year as no further expenditures were budgeted.

14. PROPERTY, PLANT AND EQUIPMENT

	Buildings and other improvements US$ '000	Plant and machinery* US$ '000	Motor vehicles, furniture and equipment US$ '000	Right of use asset US$ '000	Waste stripping asset US$ '000	Assets under construction US$ '000	Total US$ '000
Cost							
At 1 January 2021	7,559	180,623	1,466	5,504	3,764	7,117	206,033
Additions	–	240	25	–	–	19,450	19,715
Disposals	–	(3,912)	(55)	–	(3,723)	–	(7,690)
Impairment of obsolete assets	–	(475)	–	–	–	–	(475)
Transfers within PPE	–	5,374	57	–	–	(5,431)	–
Changes in environmental rehabilitation liabilities	–	(199)	–	–	–	–	(199)
Exchange differences	(602)	(12,167)	(119)	(438)	(41)	(1,989)	(15,356)
At 31 December 2021	**6,957**	**169,484**	**1,374**	**5,066**	**–**	**19,147**	**202,028**
Additions	–	691	138	2,989	1,850	15,988	21,656
Changes in environmental rehabilitation liabilities	–	(1,705)	–	–	–	–	(1,705)
Transfers within PPE	63	19,376	34	–	–	(19,473)	–
Exchange differences	(445)	(9,298)	(92)	(435)	(68)	(1,097)	(11,435)
At 31 December 2022	**6,575**	**178,548**	**1,454**	**7,620**	**1,782**	**14,564**	**210,543**
Accumulated depreciation							
At 1 January 2021	(1,032)	(31,828)	(615)	(1,214)	(3,764)	–	(38,453)
Depreciation charge for the year	(355)	(18,146)	(277)	(618)	–	–	(19,396)
Disposals	–	2,239	53	–	3,723	–	6,015
Exchange differences	107	2,417	80	272	41	–	2,917
At 31 December 2021	**(1,280)**	**(45,318)**	**(759)**	**(1,560)**	**–**	**–**	**(48,917)**
Depreciation charge for the year	(330)	(17,233)	(219)	(297)	(396)	–	(18,475)
Impairment	(898)	(17,920)	(10)	–	–	–	(18,828)
Exchange differences	122	2,776	56	117	14	–	3,085
At 31 December 2022	**(2,386)**	**(77,695)**	**(930)**	**(1,741)**	**(382)**	**–**	**(83,134)**
Net Book Value							
At 31 December 2021	**5,677**	**124,168**	**617**	**3,505**	**–**	**19,146**	**153,113**
At 31 December 2022	**5,038**	**100,008**	**523**	**5,873**	**1,401**	**14,566**	**127,409**

* Include decommissioning assets.

The right of use asset of US$5.87 million relates to land and buildings of US$5.77 million and plant and machinery of US$0.1 million.

Impairment disclosure

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 exist, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any).

Vanchem Cash generating unit (CGU)

The newly refurbished Kiln-3 at Vanchem was commissioned in June 2022 however due to various issues including loadshedding and ore feed supply, the production ramp up was slower than expected and had not reached its targeted run rate by the end of 2022. The lower than expected performance was considered by the Group to be an indicator of impairment for the Vanchem CGU, which consists of Bushveld Vanchem (Pty) Limited and Ivanti Resources (Pty) Limited. The Vanchem CGU forms part of the vanadium mining and production reportable segment.
The recoverable amount of the CGU was determined by calculating the fair value less cost of disposal ("FVLCD"). The FVLCD was determined by calculating the net present value of the estimated future cash flows. The determination of FVLCD is considered to be Level 3 fair value

measurement as the FVLCD is derived from valuation techniques that include inputs that are not based on observable market data. The Group considered the inputs and the valuation approach to be consistent with the approach taken by market participants.

Estimates of quantities of recoverable minerals, production levels, operating costs and capital requirements are sourced from the planning process, including the LOM plans, two-year budgets and CGU-specific studies.

The determination of FVLCD is most sensitive to the following key assumptions:
- Production volumes
- Commodity prices
- Discount rates
- Exchange rates

Production volumes: In calculating the FVLCD, the production volumes incorporated into the cash flow model was 1,500 mtVpa for 2023, 2,300 mtVpa for 2024 and increasing to 2,500 mtVpa thereafter. Estimated production volumes are based on detailed life-of-mine plans and take into account development plans for the mines agreed by management as part of the long-term planning process. Production volumes are dependent on a number of variables, such as: the recoverable quantities; the production profile; the cost of the development of the infrastructure necessary to extract the reserves; the production costs; and the selling price of the commodities extracted. The cash flows are computed using appropriate individual economic models and key assumptions established by management. These are then assessed to ensure they are consistent with what a market participant would estimate.

Commodity prices: Forecast commodity prices are based on management's estimates and are derived from forward price curves and long-term views of global supply and demand, building on past experience of the industry and consistent with external sources. These prices were adjusted to arrive at appropriate consistent price assumptions for the different qualities and type of commodities, or, where appropriate, contracted prices were applied.

Estimated long–term FeV price for the current year and the comparative year that have been used to estimate future revenues, are as follows:

	2022					
Assumptions	2023	2024	2025	2026	2027	Long term (2028+)
Fev US$ per KgV	36.10	36.05	36.00	37.00	38.00	40.00

	2021		
Assumptions	2022	2023	Long term (2024+)
Fev US$ per KgV	41.35	35.15	40.00

Discount rates: In calculating the FVLCD, a real post-tax discount rate of 9.70 percent (2021: 7.70 percent) was applied to the post-tax cash flows expressed in real terms. This discount rate is derived from the Group's post-tax weighted average cost of capital ("WACC"), with appropriate adjustments made to reflect the risks specific to the CGU. Segment-specific risk is incorporated by applying individual beta factors. The beta factors are evaluated annually based on publicly available market data. The WACC also includes an appropriate small capital premium.

Exchange rates: Foreign exchange rates are estimated with reference to external market forecasts. The rates applied for the first five years of the valuation are based on observable market data including spot and forward values, thereafter the estimate is interpolated to the long term assumption, which involves market analysis including equity analyst estimates. The assumed long-term US dollar/Rand is estimated to be 15.75 (2021:15.00).

The impairment test determined that the recoverable amount of US$66.32 million, representing the CGU's FVLCD, was below the carrying amount. This resulted in an impairment charge of US$17.27 million being recognised in the consolidated statement of profit and loss within impairment losses and in the consolidated statement of financial position as a reduction to property, plant and equipment.

Any change in the key assumptions above may result in a further impairment write down or partial reversal of the recognised impairment charge.

Other

The Group also recognised an impairment charge of US$1.56 million in the consolidated statement of profit or loss related to items of property, plant and equipment that were identified as being no longer in use.

15. INVESTMENT PROPERTIES

Notes to the Consolidated Financial Statements continued

	2022 US$ '000	2021 US$ '000
Balance, beginning of the year	2,595	2,811
Fair value movement	(17)	(216)
Exchange differences	(166)	–
Balance, end of the year	**2,412**	**2,595**

Investment properties comprise residential housing in Brits and Elandsrand, North West Province.

Investment properties are stated at fair value (level 3 of the fair value hierarchy), which has been determined based on valuations performed by Domus Estate Management, an accredited independent valuer, as at 31 December 2022. 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.

16. DEFERRED TAX LIABILITIES

Deferred tax liability

	2022 US$ '000	2021 US$ '000
Investment properties	(517)	(577)
Property, plant and equipment	(17,925)	(25,722)
Prepayments	(15)	(24)
Expected credit losses	(18)	–
Total deferred tax liability	**(18,475)**	**(26,323)**
Deferred tax asset		
Provisions	(642)	711
Environmental rehabilitation liabilities	4,549	5,049
Lease liabilities	1,521	195
Non-deductible expenses	1,029	–
Post-retirement medical liability	460	534
Deferred tax balance from temporary differences other than unused tax losses	6,917	6,489
Unused tax losses	10,367	13,820
Total deferred tax asset	**17,284**	**20,309**
Deferred tax liability	(18,475)	(26,323)
Deferred tax assets	17,284	20,309
Total net deferred tax liability	**(1,191)**	**(6,014)**

The evidence supporting recognition of a deferred tax asset is forecasts for the component to which the losses relate which indicate with reasonable certainty the availability of sufficient future taxable profits and the existence of corresponding deferred tax liabilities against which the losses can be utilised.

2022	Beginning balance US$ '000	Statement of profit or loss US$ '000	Other comprehensive income US$ '000	Exchange differences US$ '000	Ending balance US$ '000
Deferred tax liability					
Investment properties	(577)	24	–	36	(517)
Property, plant and equipment	(25,722)	6,374	–	1,423	(17,925)
Prepayments	(24)	8	–	1	(15)
Expected credit losses	–	(19)	–	1	(18)
Deferred tax asset					
Provisions	711	(1,358)	–	5	(642)
Non-deductible expenses	–	1,068	–	(39)	1,029
Environmental rehabilitation liabilities	5,049	(181)	–	(318)	4,550
Lease liabilities	195	1,389	–	(63)	1,521
Post-retirement medical liability	534	–	(34)	(41)	459
Unused tax losses	13,820	(2,666)	–	(787)	10,367
	(6,014)	4,639	(34)	218	(1,191)

2021	Beginning balance US$ '000	Statement of profit or loss US$ '000	Other comprehensive income US$ '000	Exchange differences US$ '000	Ending balance US$ '000
Deferred tax liability					
Investment properties	(625)	(2)	–	50	(577)
Property, plant and equipment	(29,268)	1,306	–	2,240	(25,722)
Prepayments	(144)	117	–	3	(24)
Deferred tax asset					
Provisions	856	(82)	–	(63)	711
Inventories	356	(352)	–	(4)	–
Environmental rehabilitation liabilities	5,040	441	–	(432)	5,049
Lease liabilities	219	(7)	–	(17)	195
Post-retirement medical liability	581	–	(1)	(46)	534
Unused tax losses	11,435	3,607	–	(1,222)	13,820
	(11,550)	5,028	(1)	509	(6,014)

17. FINANCIAL ASSETS

	2022 US$ '000	2021 US$ '000
Balance, beginning of the year	–	22,453
Additions	2,923	9,988
Disposals[1]	–	(16,147)
Fair value movement	–	(3,771)
Finance income	159	–
Transfer to investments in joint ventures[2]	–	(12,292)
Exchange differences	(7)	(231)
Balance, end of the year	3,075	–

(1) The Group disposed of its investment in AfriTin during 2021.
(2) The Group's investment in VRFB Holdings Limited ("VRFB") became an investment in joint venture in April 2021. Refer to note 18.

The Group subscribed for two convertible loan notes issued by Mustang Energy Plc ("Mustang") with a principle amount of US$2.93 million bearing 10 percent interest per annum in exchange for a convertible loan note issued to Primorius and share capital issued to Lind Partners. See note 23 and 28.

Notes to the Consolidated Financial Statements *continued*

18. INVESTMENTS IN JOINT VENTURES

	VRFB US$ '000	Mini–Grid US$ '000	Total US$' 000
Balance, 1 January 2021	–	–	–
Transfer from financial assets	12,292	–	12,292
Share of loss	(4,351)	–	(4,351)
Exchange differences	(86)	–	(86)
Balance, 31 December 2021	7,855	–	7,855
Acquisition of investment in joint ventures	–	1,211	1,211
Share of loss	(5,112)	–	(5,112)
Exchange differences	(751)	(52)	(803)
Balance, 31 December 2022	**1,992**	**1,159**	**3,151**

VRFB Holdings Limited ("VRFB")

The Group acquired a 50.5 percent interest in VRFB in April 2021, which is the holding company for the Group's investment in Enerox GmbH ("Cellcube"). The investment in VRFB is in line with the Group's strategy of partnering with Vanadium Redox Flow Battery ("VRFB") companies. The Group accounts for its 50.5 percent shareholding in VRFB as an investment in joint venture as it does not meet the requirements of control.

Summarised financial information in respect of VRFB is set out below:

	2022 US$ '000	2021 US$ '000
Revenue	**11,183**	1,008
Net loss	**(20,389)**	(8,484)
Other comprehensive income	**275**	(1,941)
Comprehensive loss	**(8,931)**	(9,417)

The Group entered into a conditional agreement on 25 November 2022 to sell its entire 50.5 percent interest in VRFB to Mustang. The transaction remains subject to the fulfilment of a number of conditions precedent, including Mustang completing a reserve takeover and obtaining the relevant approvals from its shareholders, the FCA and the Takeover Panel.

Hybrid Mini-Grid Company Proprietary Limited ("Mini-Grid")

The Group entered into a shareholders' agreement with NESA Investment Holdings, whereby it holds a 40 percent interest in Mini-Grid. The Group accounts for its 40 percent shareholding as an investment in joint venture as the relevant decisions require unanimous consent.

19. INVENTORIES

	2022 US$ '000	2021 US$ '000
Finished goods	**23,511**	18,058
Work in progress	**14,740**	9,323
Raw materials	**4,435**	3,160
Consumable stores	**12,304**	11,105
Total inventories	**54,990**	41,646

The cost of inventories recognised as an expense during the year was US$88.60 million (2021: US$82.49 million).

The Group recognised a net realisable value write down of finished goods amounting to US$0.33 million (31 December 2021: US$0.48 million) and work in progress amounting to US$0.19 million (31 December 2021: US$nil).

20. TRADE AND OTHER RECEIVABLES

	2022 US$ '000	2021 US$ '000
Financial instruments:		
Trade receivables	3,134	6,129
Other receivables	2,856	5,034
Expected credit losses	(78)	(77)
Non-financial instruments:		
Value-added taxes	3,163	5,728
Deposits	19	–
Prepaid expenses	404	828
Total trade and other receivables	9,498	17,642

Categorisation of trade and other receivables

Trade and other receivables are categorised as follows in accordance with IFRS 9:

	2022 US$ '000	2021 US$ '000
Financial instruments:		
At amortised cost	5,912	11,086
Non-financial instruments	3,586	6,556
	9,498	17,642

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business. They are generally due for settlement within 15-90 days and therefore are all classified as current.

The fair value of trade and other receivables approximate the carrying value due to the short maturity.

Impairment and risk exposure

Information about the impairment of trade receivables and the Group's exposure to credit risk, interest rate risk and foreign currency risk can be found in note 33.

21. RESTRICTED INVESTMENT

	2022 US$ '000	2021 US$ '000
Rehabilitation insurance fund	2,710	2,869
Split between non-current and current portions		
Current assets	–	2,869
Non-current assets	2,710	–
	2,710	2,869

The Group is required by statutory law in South Africa to hold this restricted investment in order to meet environmental rehabilitation liabilities on the statement of financial position (refer to note 26 and 34 for further details).

22. CASH AND CASH EQUIVALENTS

	2022 US$ '000	2021 US$ '000
Cash at bank and on hand	8,347	7,336
Short-term deposits	2,527	8,097
	10,874	15,433

22. CASH AND CASH EQUIVALENTS (CONTINUED)

Notes to the Consolidated Financial Statements continued

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. Short-term deposits include funds received from Orion Mine Finance ("Orion") under the Production Financing Agreement ("PFA") and Convertible Loan Notes Instrument ("CLN").

The total cash and cash equivalents denominated in South African Rand amount to US$6.72 million (2021: US$14.88 million).

The fair value of cash and cash equivalents approximates the carrying value due to the short maturity.

23. SHARE CAPITAL, SHARE PREMIUM AND RESERVES

	Number of shares	Share capital US$ '000	Share premium US$ '000	Total share capital and premium US$ '000
Balance, 1 January 2021	1,190,757,892	15,858	117,066	132,924
Shares issued - Directors and staff	2,808,928	36	388	424
Shares issued - Duferco	66,892,037	903	8,097	9,000
Balance, 31 December 2021	**1,260,458,857**	**16,797**	**125,551**	**142,348**
Shares issued - Directors and staff	**2,324,842**	**29**	**494**	**523**
Shares issued - Primorus Convertible	**4,157,645**	**54**	**476**	**530**
Shares issued - Lind	**20,876,937**	**242**	**1,181**	**1,423**
Balance, 31 December 2022	**1,287,818,281**	**17,122**	**127,702**	**144,824**

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 2022 the Company owns 670,000 (31 December 2021: 670,000) treasury shares with a nominal value of 1 pence.

Shares issued

Directors and staff

The Company issued 2,324,842 new ordinary shares of 1 pence each in the Company in respect of the short-term incentive plans (2021: 2,808,928 ordinary shares).

Duferco Participations Holdings S.A. ("Duferco")

The Group settled the unsecured convertible notes held by Duferco on 8 November 2021. US$2.50 million of the amount due, as well as the accrued interest of US$0.51 million, was satisfied in cash and the balance of US$9.0 million was satisfied with the issue of 66,892,037 new ordinary shares of 1 pence, using a conversion price of 9.97 pence, which was a 5 percent discount to the prevailing 10-day volume weighted average share price leading up to conversion. There was no lock in or orderly marketing period for the shares issued.

Primorus Investments Plc ("Primorus")

The Company issued a convertible loan note to Primorus. The Company issued a total of 4,157,645 new ordinary shares of 1 pence each in accordance with the conversion provisions.

Lind Global Macro Fund, LP ("Lind")

The Company issued 20,876,937 new ordinary shares of 1 pence each to Lind in accordance with the Investment Agreement between the Company and Mustang.

Nature and purpose of other reserves

Share premium

The share premium reserve represents the amount subscribed for share capital in excess of nominal value.

Share-based payment reserve

The share-based payment reserve represents the cumulative fair value of share options granted to employees.

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.

Retained income reserve

The retained income reserve represents other net gains and losses and transactions with owners (e.g. dividends) not recognised elsewhere.

24. SHARE-BASED PAYMENTS

Short-Term Incentive ("STI")

	Number of shares	
Deferred share awards	2022	2021
Balance, beginning of the year	1,212,360	–
Granted	–	5,226,020
Vested	(1,099,404)	(4,013,660)
Forfeited	(112,956)	–
Balance, end of the year	–	1,212,360

The Group awarded 2,424,720 deferred share awards to certain employees on 5 August 2021 under its short-term incentive plan. The deferred share awards vested in equal tranches after twelve months (31 December 2021) and 18 months (30 June 2022). The vesting of the deferred share awards is dependent on the employees still being employed on the respective vesting dates. The deferred share awards are settled directly by the Company, in its own shares. The fair value of the deferred share awards was US$0.42 million which is the market price of the Company's share at grant date (£0.13) and the exchange rate on that date.

The Group awarded 2,801,300 deferred share awards to certain employees on 5 August 2021 in lieu of a cash bonus. These deferred share awards vested on 31 December 2021. The vesting of the deferred share awards is dependent on the employees still being employed on the vesting date. The deferred share awards are settled directly by the Company, in its own shares. The fair value of the deferred share awards was US$0.50 million which is the market price of the Company's share at grant date (£0.13) and the exchange rate on that date.

The Company issued 2,324,842 new ordinary shares of 1 pence each in respect to the STI (note 23) and 2,788,222 shares are still to be issued to certain employees being in a closed period.

Long-Term Incentive ("LTI")

	Number of shares	
Performance awards	2022	2021
Balance, beginning of the year	2,458,443	2,458,443
Granted	–	–
Vested	–	–
Lapsed	(2,458,443)	–
Balance, end of the year	–	2,458,443

The Group awarded performance awards to certain employees on 28 November 2019 under its long-term incentive plan. The performance awards vest over a period of three years and is subject to both employment and performance conditions. The performance conditions contain both a market condition and a non-market condition.

The market condition states that 60 percent of the number of performance shares awarded would vest based on the performance of the Company's total shareholder return ("TSR"), per annum, over the performance period. The non-market condition states that 40percent of the number of performance shares awarded will vest based on the performance of the Group's free cash flow margin ("FCF"), per annum, over the performance period.

As at 31 December 2021, it was assumed that 0 percent of the performance shares awarded to participants during 2019 will vest. This was based on the Group's performance on both TSR and FCF being below the threshold. At vesting date, 28 November 2022, it was determined that 0 percent of the performance shares awarded vested as the thresholds on both TSR and FCF not being achieved.

The remuneration committee approved performance awards in 2022, which were awarded in 2023. The performance awards vest over a period of three years and is subject to both employment and performance conditions. The performance conditions contain both a market condition and a non-market condition.

25. POST-RETIREMENT MEDICAL LIABILITY

The benefit comprises medical aid subsidies provided to qualifying retired employees. Actuarial valuations are made annually with the most recent valuation on 31 December 2022. The present value of the post-retirement medical liability were measured using the projected unit credit method.

Notes to the Consolidated Financial Statements *continued*

The following table summarises the components of the net benefit expense recognized in the consolidated statement of profit or loss and the consolidated statement of comprehensive income or loss and the amounts recognised in the consolidated statement of financial position.

	2022 US$ '000	2021 US$ '000
Balance, beginning of the year	1,906	2,076
Net expense recognised in profit or loss	13	5
Actuarial changes recognized in other comprehensive income or loss	(126)	(10)
Exchange differences	(118)	(165)
Balance, end of the year	1,675	1,906

The principal assumptions used for the purposes of the actuarial valuation was as follows:

	2022	2021
Actual age	77.3 years	77.3 years
Discount rates	11.60%	10.90%
Health care cost inflation	7.80%	7.90%
Duration of liability	8.8 years	9.3 years

A 1 percent change in the assumed rate of healthcare costs inflation would have the following effect on the present value of the unfunded obligation: Plus 1 percent – US$0.13 million (2021: US$0.16 million); Less 1 percent – US$0.12 million (2021:US$0.14 million).

A 1 percent change in the assumed interest rate would have the following effect on the current service cost and interest cost; Plus 1 percent – US$0.20 million (2021: US$0.21 million); Less 1 percent – US$0.17 million (2021: US$0.18 million).

26. ENVIRONMENTAL REHABILITATION LIABILITIES

	Notes	2022 US$ '000	2021 US$ '000
Balance, beginning of the year		18,031	17,998
Unwinding of discount	9	1,726	1,915
Change in estimates charged to profit or loss		(291)	(140)
Change in estimates capitalized to property, plant and equipment	14	(1,705)	(199)
Exchange differences		(1,151)	(1,543)
Balance, end of the year		16,610	18,031

The Group makes full provision for the future cost of rehabilitating mine sites and related production facilities on a discounted basis at the time of developing the mine and installing and using those facilities.

The rehabilitation provision represents the present value of rehabilitation costs relating to mine sites, which are expected to be incurred up to 2052, which is when the producing mine properties are expected to cease operations. These provisions have been created based on the Group's internal estimates. Assumptions based on the current economic environment have been made, which management believes are a reasonable basis upon changes to the assumptions. However, actual rehabilitation costs will ultimately depend upon future market prices for the necessary rehabilitation works required that will reflect market conditions at the relevant time. 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 provision is calculated using the following key assumptions:

	2022	2021
Inflation rate	**10.41 %**	9.76 %
Discount rate	**11.41 %**	10.76 %

A 1 percent change in the assumed discount rate would have the following effect on the present value of the provision:
Plus 1 percent – decrease of US$3.91 million; Less 1 percent – increase of US$5.16 million.

A 1 percent change in the assumed inflation rate would have the following effect on the present value of the provision:
Plus 1 percent – increase of US$5.16 million; Less 1 percent – decrease of US$3.97 million.

27. DEFERRED CONSIDERATION

	Notes	2022 US$ '000	2021 US$ '000
Balance, beginning of the year		**1,684**	5,623
Payment		–	(3,724)
Finance costs		**51**	91
Movement in earnout estimate	10	**693**	–
Exchange differences		–	(306)
		2,428	1,684
Split between non-current and current portions			
Current deferred consideration		**901**	–
Non-current deferred consideration		**1,527**	1,684
		2,428	1,684

The Group is required to pay an earnout amount to EVRAZ on the acquisition of the Vametco Group which is based on the annual percentage of additional revenue ascribed to Bushveld Vametco Alloys as a result of the prevailing price being above the trigger price in respect of each financial year commencing on 1 January 2018 and ending on 31 December 2025, up to a maximum amount of US$5.54 million.

Management updated their estimated earnout payment to reflect actual production and price for the year ended 31 December 2022 and estimated production and price for future years which resulted in an increase of US$0.69 million in the estimated earnout payment.

28. BORROWINGS*

	2022 US$ '000	2021 US$ '000
Production financing agreement	**35,146**	33,512
Orion convertible loan notes	**39,742**	36,282
Nedbank revolving credit facility	–	5,821
Industrial Development Corporation shareholder loan	**1,999**	3,282
Industrial Development Corporation property, plant and equipment loan	**3,481**	–
Development Bank of South Africa	**1,000**	1,000
Other	**1,762**	–
	83,130	79,897
Split between non-current and current portions		
Non-current	**35,272**	69,686
Current	**47,858**	10,211
	83,130	79,897

* Refer to note 36 for details of restatement.

Notes to the Consolidated Financial Statements *continued*

28. BORROWINGS* (CONTINUED)

	Product financing agreement US$ '000	Orion convertible loan notes US$ '000	Nedbank revolving credit facility US$ '000	Industrial Development Corporation loans US$ '000	Other US$ '000	Total US$ '000
Balance, beginning of the year	33,512	36,282	5,821	3,282	1,000	79,897
Cash changes:						
Proceeds from borrowings	–	–	–	3,416	806	4,222
Repayments of principle and interest	(2,906)	–	(5,885)	–	(49)	(8,840)
Non-cash changes:						
Convertible loan note in exchange for financial assets	–	–	–	–	1,636	1,636
Conversion of convertible loan notes	–	–	–	–	(530)	(530)
Finance costs[(1)]	4,420	6,394	232	470	143	11,659
Fair value gain on derivative liability	–	(2,934)	–	–	–	(2,934)
Adjustment to reflect market value of loan	–	–	–	(1,789)	–	(1,789)
Exchange differences	120	–	(168)	101	(244)	(191)
	35,146	**39,742**	**–**	**5,480**	**2,762**	**83,130**

(1) Finance costs include capitalised finance costs of US$0.47 million to property,plant and equipment.
* Refer to note 36 for details of restatement.

Orion Mine Finance Production Financing Agreement

The Group signed a long-term production financing agreement ("PFA") of US$30 million with Orion Mine Finance ("Orion) in December 2020, primarily to finance its expansion plans at Bushveld Vametco Alloys Proprietary Limited and debt repayment. Exchange control authorization from the South Africa Reserve Bank Financial Surveillance Department was granted in October 2020.

PFA Details

The Group will repay the principal amount and pay interest via quarterly payments determined initially as the sum of:
- a gross revenue rate (set at 1.175 per cent for 2020 and 2021 and 1.45 per cent from 2022 onwards, subject to adjustment based on applicable quarterly vanadium prices) multiplied by the gross revenue for the quarter; and
- a unit rate of US$0.443/kgV multiplied by the aggregate amount of vanadium sold for the quarter.

Once the Group reaches vanadium sales of approximately 132,020 mtV during the term of the facility, the gross revenue rate and unit rate will reduce by 75 per cent (i.e. to 25 per cent of the applicable rates).

On each of the first three loan anniversaries, the Group has the option to repay up to 50 per cent of both constituent loan parts (each may only be repaid once). If the Group utilises the loan repayment option, the gross revenue rate and/or the unit rate will reduce accordingly.

The PFA capital will provide funding to continue to grow production at Vametco to more than 4,200 mtV per annual production level and debt repayment. Part of the proceeds were used by the Group to prepay in full the Nedbank ZAR250 million term loan.

First Amendment

The Group entered into a first amendment to the agreement on 6 August 2021. In terms of the amendment, US$17.8 million of the funds ringfenced for the Vametco Phase 3 Expansion was reallocated to Vanchem mainly for capital expenditure on Kiln-3.

The original PFA had a cap of 1,075 mtV per quarter. This amounted to 4,300 mtV per annum expected from 2024 onwards following the completion of the Vametco Phase 3 expansion project. The amended agreement, with the addition of the Vanchem production volumes from 1 July 2021 resulted in the initial cap of 4,300 mtV being brought forward, from 1 July 2022 instead of from 2024.

Accounting impact of amendment

IFRS 9 requires the amortised cost of the liability to be recalculated by discounting the modified contractual cash flows (excluding costs and fees) using the original effective interest rate. Any change to the amortised cost of the financial liability is required to be recognised within profit or loss at the date of the modification. The carrying amount of the liability is then further revised for any costs or fees incurred. The effective interest rate is also revised accordingly, so the costs are amortised over the remaining term of the modified liability.

As a result of the increased production volumes from Vanchem and the cap of 4,300mtV being brought forward, this resulted in a non-substantial modification to the contractual terms. The amortised cost was recalculated and loss on remeasurement of financial liabilities of US$1.90 million was recognised in the consolidated statement of profit or loss for the year ended 31 December 2021.

Orion Mine Finance Convertible Loan Notes Instrument

The Company subscribed to a US$35 million convertible loan notes instrument in December 2020 (the "Instrument") with Orion Mine Finance ("Orion"). The Instrument's proceeds were used towards the first phase of Vanchem's critical refurbishment programme and debt repayment.

The terms of the Instrument are:
- A fixed 10 per cent per annum coupon with a three year maturity date from the drawdown date.
- All interest will accrue and be capitalised on a quarterly basis in arrears but compounded annually.
- Accumulated capitalised and accrued interest is convertible into Bushveld ordinary shares. All interest and principal, to the extent not converted into ordinary shares, is due and payable at maturity date.
- Conversion price set at 17 pence.

The conversion features are:
Between drawdown and the Instrument's maturity date Orion may, at their option, convert an amount of the outstanding debt, including capitalised and accrued interest, into Bushveld's ordinary shares as follows:
- First six months: Up to one third of the outstanding amount;
- Second six months: Up to two thirds of the outstanding amount (less any amount previously converted);
- From the anniversary of drawdown until the maturity date: the outstanding amount under the Instrument may be converted;
- The Company also has the option to convert all, but not some, of the amount outstanding under the Instrument, if its volume weighted average share price is more than 200 per cent of the conversion price over a continuous 15 trading day period, a trading day being a day on which the AIM market is open for the trading of securities.

At any time until the convertible maturity date, Orion may convert the debt as above mentioned into an amount of ordinary shares equal to the total amount available for conversion under the Instrument divided by the conversion price of 17 pence.

Refer to note 36 for the restatement associated with the change in accounting treatment.

	Loan US$ '000	Derivative liability US$ '000	Total US$ '000
Balance, 1 January 2021	27,952	11,976	39,928
Finance costs and fair value gain	5,364	(9,010)	(3,646)
Balance, 31 December 2021	33,316	2,966	36,282
Finance costs and fair value gain	6,394	(2,934)	3,460
Balance, 31 December 2022	**39,710**	**32**	**39,742**

The Orion and Nedbank borrowings are secured against certain group companies and associated assets.

Nedbank Term Loan and Revolving Credit Facility

The Group secured R375 million (approximately US$25 million) in debt facilities through its subsidiary Bushveld Vametco Alloys Proprietary Limited (the "Borrower") in November 2019 with Nedbank Limited in the form of a R250 million term loan and a R125 million revolving credit facility.

The Nedbank term loan was repaid in December 2020.

The Group had drawn the R125 million revolving credit facility in March 2020 which have the following key terms:
- Three-year term – Repayment due in November 2022;
- Interest rate calculated using the three year or six months JIBAR as selected by the Company plus a 3.85 percent margin; and
- Interest payments are due semi-annually.

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.

Notes to the Consolidated Financial Statements continued

28. BORROWINGS* (CONTINUED)

The following financial covenants are in place for the Borrower for so long as any amount is outstanding, in respect of each reporting period:
- the Net Interest Cover Ratio; and
- the Net Debt to EBITDA Ratio at a Borrower level shall not exceed 4.0 times.

The Nedbank revolving credit facility was repaid in November 2022, except for R1.

Industrial Development Corporation Shareholder Loan

Bushveld Electrolyte Company ("BELCO") is 55 percent owned by Bushveld Energy Company ("BEC") and 45 percent by the Industrial Development Corporation ("IDC"). The loan represents the IDC's contribution to BELCO and consists of the initial capitalized cost of R4.38 million (US$0.26 million; 31 December 2021: R4.38 million (US$0.26 million)) and the subsequent subscription amount of R55.31 million (US$3.26 million; 31 December 2021: R55.31 million (US$3.82 million)).

The loan is interest free, unsecured, subordinated in favour of BELCO's creditors and has no fixed term of repayment and shall only be repaid from free cash flow when available. BELCO has the unconditional right to defer settlement until it has sufficient free cash flow to settle the outstanding amount, which is estimated at the end of 2028. The loan has been classified as non-current.

The shareholder loan is measured at the present value of the future cash payments discounted using an interest rate of 8.5 percent, which is the estimated prevailing market rate. The difference between the fair value and the nominal amount of US$1.79 million was recognised as non-controlling interest.

A general notarial bond for a minimum amount of R140 million plus an additional sum of 30 percent for ancillary costs and expenses was registered over all the movable assets owned by BELCO.

Industrial Development Corporation Property, Plant and Equipment Loan

The IDC provided a property, plant and equipment loan to BELCO as part of the funding for the construction of the electrolyte plant. The loan bears interest at the South African prime rate plus 2.5 percent margin and is repayable in 84 equal monthly instalments starting in July 2023.

Development Bank of Southern Africa – Facility Agreement

Lemur Holdings Limited entered into a US$1.0 million 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 percent capped at 2.5 times, which ever is lower. As at 31 December 2022, US$1.0 million (31 December 2020: US$1.0 million) was drawn down.

Primorius

The Company issued a convertible loan note to Primorius for the nominal amount of £1,20 million bearing interest at 10 percent per annum. The convertible loan note may be converted into Bushveld ordinary shares at any time within the conversion period (the six conversion periods being: 28 February 2022 to 14 April 2022; 15 April 2022 to 14 July 2022; 15 July 2022 to 14 October 2022; 15 October 2022 to 16 January 2023; 17 January 2023 to 14 April 2023;15 April 2023 to 14 July 2023) at a conversion price of £0.098987. Primorius converted £0.41 million of the principal amount and was issued a total of 4,157,645 Bushveld ordinary shares.

Nesa Investment Holdings ("Nesa")

The Group entered into a loan agreement with Nesa to fund US$0.81 million (R12.08 million) bearing interest at South African prime rate plus 3.5 percent margin and is repayable on 30 October 2023.

29. LEASE LIABILITIES

	Notes	2022 US$ '000	2021 US$ '000
Balance, beginning of the year		**4,485**	5,002
Additions		**2,989**	128
Finance cost	9	**974**	459
Payments		**(728)**	(705)
Exchange differences		**(438)**	(399)
Balance, end of the year		**7,282**	4,485
Non-current lease liabilities		**6,721**	3,921
Current lease liabilities		**561**	564
		7,282	4,485

Leases are entered into and exist to meet specific business requirements, considering the appropriate term and nature of the leases asset. The Group leases relate to land leases, office leases and equipment lease.

Extension options

Some property leases contain extension options exercisable by the Group. The Group assesses at the lease commencement date whether it is reasonably certain to exercise the extension options. The Group reassesses whether it is reasonably certain to exercise its options if there is a significant event or significant changes within its control.

30. TRADE AND OTHER PAYABLES

	2022 US$ '000	2021 US$ '000
Financial instruments:		
Trade payables	**40,573**	28,330
Trade payables - related parties	**61**	107
Accruals and other payables	**5,257**	4,644
Non-financial instruments:		
Value-added taxes	**5**	–
	45,896	33,081
Financial instrument and non-financial instrument components of trade and other payables		
At amortised cost	**45,891**	33,081
Non-financial instruments	**5**	–
	45,896	33,081

Trade and other payables principally comprise amounts outstanding for trade purchases and on-going costs. The average credit period taken for trade purchases is 90 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$29.78 million (2021: US$20.62 million).

Notes to the Consolidated Financial Statements continued

31. PROVISIONS

Reconciliation of provisions – 2022

	Opening balance US$ '000	Additions US$ '000	Utilised during the year US$ '000	Foreign exchange US$ '000	Total US$ '000
Leave pay	1,629	80	(40)	(81)	1,588
Performance bonus	1,923	–	(1,923)	–	–
Other	170	–	(13)	(31)	126
	3,722	80	(1,976)	(112)	1,714

Reconciliation of provisions – 2021

	Opening balance US$ '000	Additions US$ '000	Utilised during the year US$ '000	Foreign exchange US$ '000	Total US$ '000
Leave pay	1,655	51	–	(77)	1,629
Performance bonus	1,375	882	(334)	–	1,923
Other	267	157	(254)	–	170
	3,297	1,090	(588)	(77)	3,722

Leave pay

Leave pay represents employee leave days due multiplied by their cost to the company employment package.

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.

Other

The other provisions represents estimates for Group tax, legal and consulting fees to be charged.

32. NON-CONTROLLING INTEREST

Selected summarized financial information of subsidiaries that have material non-controlling interest are provided below:

	2022 US$ '000	2021 US$ '000
Bushveld Vametco Holdings		
Percentage of voting rights held by non-controlling interest	26 %	26 %
Current assets	85,598	66,820
Non-current assets	80,228	77,916
Current liabilities	(25,517)	(22,944)
Non-current liabilities	(45,311)	(42,376)
Net assets	94,998	79,416
Revenues	117,226	83,114
Net earnings/(loss) for the year	21,401	(2,451)
Net earnings/(loss) attributable to non-controlling interest	5,564	(637)
Net cash generated from/(used in) operating activities	14,270	(917)
Net cash used in investing activities	(10,649)	(15,097)
Net cash used in financing activities	(6,020)	(2,364)
Net increase/(decrease) in cash and cash equivalents	(2,398)	(18,378)

33. 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 consolidated financial statements.

33.1. Categories of financial instruments
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 and cash equivalents
- Restricted investments
- Trade and other payables
- Borrowings
- Financial assets
- Lease liabilities
- Deferred consideration

The Group holds the following financial assets and financial liabilities:

	2022 US$ '000	2021 US$ '000
Financial assets at amortised cost		
Trade and other receivables	**5,912**	11,086
Restricted investment	**2,710**	2,869
Cash and cash equivalents	**10,874**	15,433
	19,496	29,388
Financial assets at fair value		
Financial assets at fair value through profit or loss	**3,075**	–
Total financial assets	**22,571**	29,388
Financial liabilities at amortised cost		
Trade and other payables	**45,891**	33,081
Borrowings - loan	**83,098**	76,931
Lease liabilities	**7,282**	4,485
	136,271	114,497
Financial liabilities at fair value		
Borrowings - derivative liability	**32**	2,966
Deferred consideration	**2,428**	1,684
	2,460	4,650
Total financial liabilities	**138,731**	119,147

33.2. 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:

Notes to the Consolidated Financial Statements continued

33. FINANCIAL INSTRUMENTS (CONTINUED)

33.3. 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 31 December 2022, the Group had borrowings of US$83.13 million (2021: US$79.90 million).

The financial covenants for the Nedbank revolving credit facility are continuously monitored by management and the Group is compliant.

The capital structure of the Group consists of cash and cash equivalents, equity and borrowings. Equity comprises of issued capital and retained income.

	2022 US$ '000	2021 US$ '000
Cash and cash equivalents	10,874	15,433
Borrowings	83,130	79,897
Equity	105,677	142,169
	199,681	237,499

The Group is not subject to any externally imposed capital requirements.

33.4. 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:

Vametco	2022 US$/kgV	2021 US$/kgV
Ferro Vanadium (FEV)	50.17	–
Nitrovan (NV)	44.45	34.10
Ammonium Metavanadate (AMV)	30.05	–
Modified Vanadium Oxide (MVO)	–	17.18

Vanchem	2022 US$/kgV	2021 US$/kgV
Vanadium Pentoxide Flake (FVP)	31.82	25.04
Vanadium Pentoxide Chemical (VCM)	35.85	32.73
Sodium Ammonium Vanadate (SAV)	55.07	51.22
Ammonium Metavanadate (AMV)	52.80	35.19
Ferro Vanadium (FEV)	35.73	31.53
Vanadyl Oxalate Solution (VOX)	197.79	195.41
Potassium Metavanadate	42.41	35.31
Nitrovan	–	30.60

If the average price of each of these commodities increased/decreased by 10 per cent the total sales related to each of these commodities would have increased/decreased as follows: 10 percent is the sensitivity used when reporting commodity prices internally to management.

Vametco	Effect on 2022 revenue US$ '000	Effect on 2022 net loss US$ '000	Effect on 2021 revenue US$ '000	Effect on 2021 net loss US$ '000
Ferro Vanadium (FEV)	358	258	–	–
Nitrovan (NV)	11,568	8,329	8,431	6,071
Ammonium Metavanadate (AMV)	81	58	(14)	(10)
	12,007	8,645	8,417	6,061

Vanchem	Effect on 2022 revenue US$ '000	Effect on 2022 net loss US$ '000	Effect on 2021 revenue US$ '000	Effect on 2021 net loss US$ '000
Vanadium Pentoxide Flake (FVP)	**494**	**356**	611	440
Vanadium Pentoxide Chemical (VCM)	**329**	**237**	298	215
Sodium Ammonium Vanadate (SAV)	**182**	**131**	72	52
Ammonium Metavanadate (AMV)	**34**	**25**	27	20
Ferro Vanadium (FEV)	**2,391**	**1,721**	1,637	1,179
Vanadyl Oxalate Solution (VOX)	**63**	**45**	138	99
Potassium Metavanadate	**157**	**113**	47	34
Nitrovan (NV)	**–**	**–**	484	348
	3,650	**2,628**	3,314	2,387

33.5. 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. 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 2022, the Group had US$10.9 million (2021: US$15.4 million) of cash and cash equivalents. At 31 December 2022, the Group had borrowings of US$83.13 million (2021: US$79.90 million), lease liabilities of US$7.28 million (2021: US$4.49 million) and trade and other payables of US$45.90 million (2021: US$33.08 million).

2022	Carrying amount US$ '000	Contractual cash flows US$ '000	<1 year US$ '000	1 - 2 years US$ '000	3 - 4 years US$ '000	>4 years US$ '000
*Production financing agreement	**35,146**	**139,795**	**4,181**	**8,626**	**8,833**	**118,155**
Orion convertible loan notes	**39,742**	**46,585**	**46,585**	**–**	**–**	**–**
Industrial Development Corporation shareholder loan	**1,999**	**3,515**	**–**	**–**	**–**	**3,515**
Industrial Development Corporation property, plant and equipment loan	**3,481**	**5,725**	**477**	**1,636**	**1,636**	**1,976**
Development Bank of South Africa	**1,000**	**1,000**	**–**	**1,000**	**–**	**–**
Other	**1,762**	**1,794**	**1,794**	**–**	**–**	**–**
Lease liabilities	**7,283**	**22,577**	**704**	**901**	**1,348**	**19,624**
Trade and other payables	**45,891**	**45,891**	**45,891**	**–**	**–**	**–**

2021	Carrying amount US$ '000	Contractual cash flows US$ '000	<1 year US$ '000	1 - 2 years US$ '000	3 - 4 years US$ '000	>4 years US$ '000
*Production financing agreement	33,512	145,435	4,123	8,868	9,012	123,432
Orion convertible loan notes	36,282	46,585	–	46,585	–	–
Nedbank revolving credit facility	5,821	5,885	5,885	–	–	–
Industrial Development Corporation shareholder loan	3,281	3,515	–	–	–	3,515
Development Bank of South Africa	1,000	1,000	–	1,000	–	–
Lease liabilities	4,485	9,771	614	501	902	7,754
Trade and other payables	33,081	33,081	33,081	–	–	–

* The contractual cash flows are based on estimated principal and interest payments calculated as the sum of the gross revenue rate multiplied by the gross revenue for the quarter and the unit rate multiplied by the aggregate amount of vanadium sold for the quarter.

33. FINANCIAL INSTRUMENTS (CONTINUED)

33.6. Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The maximum amount of credit risk is equal to the balance of cash and cash equivalents, restricted investments, trade and other receivables and financial assets.

Credit risk is managed on a Group basis. Credit verification procedures are undertaken for all customers with whom we trade on credit. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the Board. The compliance with credit limits by customers is regularly monitored by line management.

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 investments in debt instruments are considered to be low risk investments. The credit ratings of the investments are monitored for credit deterioration.

The Group holds cash and cash equivalents and restricted investments in creditworthy financial institutions that comply with the Company's credit risk parameters. The Group has a significant concentration of cash held on deposit with large banks in South Africa, Mauritius, United States of America and the United Kingdom with A ratings and above (Standards and Poors).

The concentration of credit risk by currency was as follows:

	2022 US$ '000	2021 US$ '000
Pound Sterling	20	10
South African Rand	6,702	14,943
United States Dollar	4,152	480
	10,874	15,433

Impairment of financial assets

The Group's only financial assets that are subject to the expected credit loss model are third party trade receivables.

The Group applies the IFRS 9 simplified approach to measure expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due.

The expected loss rates are based on the payment profiles of sales over a period of 36 month before 31 December 2022 and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables. The Group has identified the GDP and the unemployment rate of the countries in which it sells its goods and services to be the most relevant factors, and accordingly adjusts the historical loss rates based on expected changes in these factors.

On that basis, the loss allowance as at 31 December 2022 and 31 December 2021 was determined as follows for trade receivables:

Subsidiary - 2022	Expected credit loss rate	Gross carrying amount US$ '000	Loss allowance US$ '000
Bushveld Vametco Alloys (Pty) Ltd	0.15 %	1,135	2
Bushveld Vanchem (Pty) Ltd	0.27 %	1,487	4
Ivanti Resources (Pty) Ltd	7.74 %	121	9
Bushveld Energy Company (Pty) Ltd	100.00 %	63	63
		2,806	78

Subsidiary - 2021	Expected credit loss rate	Gross carrying amount US$ '000	Loss allowance US$ '000
Bushveld Vametco Alloys (Pty) Ltd	0.11 %	87	–
Bushveld Vametco Limited	0.13 %	4,198	5
Bushveld Vanchem (Pty) Ltd	0.13 %	1,275	2
Ivanti Resources (Pty) Ltd	0.43 %	609	3
Bushveld Minerals SA (Pty) Ltd	0.19 %	8	–
Bushveld Energy Company (Pty) Ltd	100.00 %	67	67
		6,244	77

Trade receivables are written off when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include, amongst others, the failure of a debtor to engage in a repayment plan with the Group, and a failure to make contractual payments for a period of greater than 120 days past due.

Impairment losses on trade receivables are presented as net impairment losses within operating profit. Subsequent recoveries of amounts previously written off are credited against the same line item. There were no impairment losses on trade receivables for the 2022 and 2021 financial year.

33.7. Interest rate risk

Interest rate risk is the risk that the fair values and future cash flows of the Group's financial instruments will fluctuate because of changes in market interest rates. The Group has interest bearing financial assets and borrowings. As part of the process of management the Group's interest rate risk, interest rate characteristics of new borrowings and the refinancing of existing borrowings are positioned according to expected movements in interest rates.

As at 31 December 2022, the majority of the Groups' borrowings was at fixed rates. A 1 percent increase or decrease in the interest rates would result in a nominal increase or decrease in the Group's earnings in respect of borrowings held at variable rates. There was no significant change in the Group's exposure to interest rate risk during the year ended 31 December 2022.

33. FINANCIAL INSTRUMENTS (CONTINUED)

33.8. Foreign exchange risk

The presentation currency of the Group is United States Dollar and the functional currency of its major subsidiaries are South African Rand. The Group has foreign currency denominated assets and liabilities. Exposure to exchange rate fluctuations therefore arise. The Group has transactional foreign exchange exposures, which arise from sales or purchases by the subsidiaries in currencies other than their functional currency. The vanadium market is predominately priced in US$ which exposes the Group to the risk of fluctuations in the ZAR/US$ exchange rate. The carrying amount of the Groups foreign currency denominated monetary assets and liabilities, all in US$, are shown below:

	2022 US$ '000	2021 US$ '000
Cash and cash equivalents	**6,723**	15,135
Other receivables	**11,226**	12,696
Trade and other payables	**(32,652)**	(20,753)
	(14,703)	7,078

The Group does not enter into any derivative financial instruments to manage its exposure to foreign currency risk.

33.9. Fair value

The fair value hierarchy categorizes into three levels the inputs to valuation techniques used to measure fair value. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1 inputs) and the lowest priority to unobservable inputs (Level 3 inputs).

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities which the entity can access at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 which are observable for the asset or liability, either directly or indirectly such as those derived from prices.
- Level 3 inputs are unobservable inputs for the asset or liability.

There have been no changes in the classification of the financial instruments in the fair value hierarchy since 31 December 2021.

(a) Financial assets and liabilities measured at fair value on a recurring basis

2022	Carrying amount US$ '000	Level 1 US$ '000	Level 2 US$ '000	Level 3 US$ '000	Total fair value US$ '000
Assets					
Financial assets	**3,075**	–	–	**3,075**	**3,075**
Liabilities					
Derivative liability – conversion option on Orion CLN	**32**	–	**32**	–	**32**
Deferred consideration	**2,428**	–	–	**2,428**	**2,428**

2021	Carrying amount US$ '000	Level 1 US$ '000	Level 2 US$ '000	Level 3 US$ '000	Total fair value US$ '000
Assets					
Financial assets	–	–	–	–	–
Liabilities					
Derivative liability – conversion option on Orion CLN	2,966	–	2,966	–	2,966
Deferred consideration	1,684	–	–	1,684	1,684

(b) Financial assets and liabilities measured at amortised costs

Financial assets	2022 Book value US$ '000	2022 Fair value US$ '000	2021 Book value US$ '000	2021 Fair value US$ '000
Trade and other receivables	**5,912**	**5,912**	11,086	11,086
Restricted investments	**2,710**	**2,710**	2,869	2,869
Cash and cash equivalents	**10,874**	**10,874**	15,433	15,433

Financial liabilities	2022 Book value US$ '000	2022 Fair value US$ '000	2021 Book value US$ '000	2021 Fair value US$ '000
Trade and other payables	**45,891**	**45,891**	33,081	33,081

The directors are of the opinion that the book value of financial instruments measured at amortised costs approximates fair value due to the short-term maturities of these instruments. The carrying value less impairment provision of trade receivables and payables are assumed to approximate their fair values.

The directors consider that sufficient information to understand the borrowings of the Group is disclosed in note 28.

34. CONTINGENT LIABILITIES

Bank guarantee

As required by the Minerals and Petroleum Resources Act (South Africa), a guarantee amounting to US$11.94 million (2021: US$12.76 million) before tax and US$8.60 million (2021: US$9.19 million) 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 Centriq Insurance Company Ltd with restricted use by the Group. The restricted cash consists of US$2.71 million (2021: US$2.87 million) held by Centriq Insurance Company.

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 Investment Company (Pty) Ltd ("VM Investments") is a related party due to the Director, Fortune Mojapelo being majority shareholder of VM Investments. VM Investments owns the offices rented by Bushveld Minerals Limited. The rent paid in 2022 financial period was US$206,209 (2021: US$162,897).

Services rendered by Ondra LLP for the amount of US$61,900 (2021: US$200,000) is classified as a related party transaction due to a non executive director, Michael Kirkwood being a partner at the firm.

The company paid on behalf of Mr Fortune Mojapelo, tax on historic shares to the value of US$439 094. The tax arises from historic shares issued to Mr Mojapelo. The company had an obligation to settle the tax on behalf of Mr Fortune Mojapelo. The amount is reflected as a debtor.

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.

	2022 US$ '000	2021 US$ '000
Salaries and fees	**1,866**	1,979
Short-term incentives	**95**	166
Long-term incentives	**107**	–
	2,068	2,145

Notes to the Consolidated Financial Statements *continued*

36. RESTATEMENTS

The Company subscribed to a US$35 million convertible loan notes instrument in December 2020 with a fixed 10 percent per annum coupon, a three year maturity date and a conversion price of 17 pence (the "Instrument") (refer to note 28).

At inception the Instrument was accounted for as a compound instrument and was partly presented as a loan (US$34.95 million) and partly as equity (US$0.05 million). The equity component was not subsequently remeasured. The loan component was subsequently measured at amortized cost.

During the preparation of the annual consolidated financial statements for the year ended 31 December 2022, it was determined that the Instrument should have been accounted for at inception as a loan and a derivative liability as the conversion will result in a variable amount of shares. Subsequently the derivative liability is remeasured to fair value at each reporting date with fair value movements recorded in the consolidated statement of profit or loss. The amount allocated to the loan continues to be measured at amortized cost.

The information in the following tables show the effect of the restatement on each affected financial statement line item:

Consolidated Statement of Financial Position	Previously reported at 31 December 2021 US$ '000	Adjustment US$ '000	Restated at 31 December 2021 US$ '000
Convertible loan note reserve	55	(55)	–
Retained earnings	(1,265)	1,086	(179)
Total equity	150,831	1,031	151,862
Borrowings – non-current portion	70,717	(1,031)	69,686
Borrowings – current portion	10,211	–	10,211
Total liabilities	149,849	(1,031)	148,818

No impact on total cashflows as reported for the year ended 31 December 2021 were noted as these adjustments were non- cash. The add backs for finance costs and fair value gain on derivative liability were adjusted.

Consolidated Statement of Profit or Loss	Previously reported at 31 December 2021 US$ '000	Adjustment US$ '000	Restated at 31 December 2021 US$ '000
Finance costs	12,184	1,124	13,308
Fair value gain on derivative liability	–	(9,010)	(9,010)
Loss before taxation	46,782	(7,886)	38,896
Loss for the year	42,113	(7,886)	34,227
Basic loss per share	(3.39)	0.65	(2.74)

Consolidated Statement of Financial Position	Previously reported at 31 December 2020 US$ '000	Adjustment US$ '000	Restated at 31 December 2020 US$ '000
Convertible loan note reserve	55	(55)	–
Retained earnings	28,367	(6,800)	21,567
Total equity	197,364	(6,855)	190,509
Borrowings – non-current portion	72,507	6,855	79,362
Borrowings – current portion	13,337	–	13,337
Total liabilities	153,457	6,855	160,312

37. EVENTS AFTER THE REPORTING PERIOD

The Company entered into a non-binding term sheet with Orion Mine Finance ("Orion") on 5 May 2023. The term sheet, which were approved by the Orion Investment Committee, envisages that the Orion convertible loan notes which are due in November 2023 will be refinanced into the following components:

– A three-year secured term loan ("Term Loan") totaling approximately US$27 million, bearing interest at 6 percent plus the greater of (i) 3-month secured overnight financing rate and (ii) 3.0 percent per annum, payable quarterly in cash in arrears. 25 percent of the facility is repayable in June 2024, 30 percent repayable in June 2025 and 45 percent repayable in June 2026.
– A new convertible loan note of approximately US$13.5 million, bearing interest at 12 percent per annum, conversion price of 8 pence and a maturity date of June 2028. The Company shall have a one-time right to redeem 50 percent (in whole and not in part) of the New CLN in June 2026, subject to the right of Orion to elect for conversion of the same for a 30-day period.
– Conversion of approximately US$4.5 million of existing convertible loan notes into shares at 6 pence per share.
– Supplemental production financing agreement ("PFA") on the same terms as the existing PFA during the tenure of the Term Loan, except for the PFA rate being 0.22 percent with a realized kgV price of less than US$47/kgV or the PFA rate being 0.18 percent with a realized kgV price of more than US$47/kgV. Once the Term Loan has matured in June 2027, the top-up PFA rate will reduce by a further 80 percent for the life of mine.

The transaction is conditional on several items, including due diligence, shareholder approval at a general meeting and definitive documentation.

Supplementary Information

CONTENTS

Mineral Resources and Reserves

DEFINITION

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.

Measured/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 of 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.

Ore Reserves are declared for open pits inside the life-of-mine pit design (the optimised pit shell in this instance), which include the dilution of 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, and 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

VAMETCO MINE

The Vametco Mine is situated about 6.5 km northeast of the town of Madibeng (formerly known as Brits). It is an operational opencast vanadium mine, located in the Bojanala Platinum District within the North- West Province of the Republic of South Africa.

The operation comprises an open pit mine which supplies ore directly to the vanadium processing plant located on the same property. The open pit is approximately 3.5 km long, in an east-west direction. The vanadium is extracted from magnetite occurring near the basal contact of the Upper Zone of the Bushveld Igneous Complex. The mine has been in operation since 1967.

Mineral Resources & Ore Reserves

The Mineral Resources and Ore Reserves estimates for Vametco Mine reported herein are based on the Competent Person's depletion statement prepared by an independent consultancy company, MSA Group, as at 31 December 2022.

Key highlights

- Ore Reserves have been depleted from a revised pit design completed in September 2022 which has resulted in a net 1 percent increase in Ore Reserves from the previous Ore Reserve estimate as at 31 December 2021. The Ore Reserves are reported as at the 31 December 2022 at 264,600 tonnes V_2O_5 in magnetite at a grade of 1.99 percent V_2O_5 (in magnetite).
- The combined Inferred and Indicated Mineral Resource comprises three seams (the Lower, Intermediate and Upper seams) and is reported as at 31 December 2022 at 181.5 Mt at an average grade of 1.98 percent V_2O_5 (in magnetite), with an average magnetite content of 35 per cent (in whole rock) for 699,000 tonnes of contained vanadium. The previously reported combined Inferred and Indicated Mineral Resource, as at 31 December 2021, was 182.7 Mt at an average grade of 1.98 percent V_2O_5 (in magnetite), with an average magnetite content of 35 percent (in whole rock) for 703,900 tonnes of contained vanadium.
- Within this, the Ore Reserve in the Probable Category comprises three Seams (The Lower, Intermediate and Upper Seams) and is reported as 46.4 Mt at an average grade of 1.99 percent V_2O_5 (in magnetite), with an average magnetite content of 28.7 percent (in whole rock) for 148,200 tonnes of vanadium.
- The Lower Seam is the main ore seam and the thickest, ranging from 13.8 to 52 metres in thickness, comprising a Probable Reserve of 36.2 Mt at an average grade of 2.03 percent V_2O_5 (in magnetite), with an average magnetite content of 28.1 percent (in whole rock) for 115,700 tonnes of vanadium.
- The decrease in the total 2022 Mineral Resource, by 0.67 percent less tonnes compared with the 31 December 2021 estimate, is attributed to mining of the seams over the last 12 months. No Mineral Resource exploration was carried out over the period.
- The increase in the total 2022 Ore Reserves from 45.3 Mt to 46.4 Mt as at 31 December 2022 is mainly due to the impact of the revised Vametco pit design (September 2022) which incorporated additional Upper and Intermediate Seam tonnage. The additional tonnage was offset by the Ore Reserve depletion which was calculated to be 1.2 Mt for the combined seams, mined over the 12-month period.
- An adjustment was made to the modifying factors to reflect more accurate Ore Reserve grades for the individual seams. The Ore Reserve modifying factors (mining loss and dilution) were adjusted based on pit to plant reconciliation production data supplied by Bushveld Vametco Alloys (Pty) Ltd. The impact of the revised pit design and adjustment to modifying factors is an additional 2.3 Mt.

Table 1: Vametco Mineral Resource at a cut-off grade of 20 percent magnetite, as at 31 December 2022 – Gross basis

Class	Seam name	Tonnes (millions)	V_2O_5 grade of whole rock (%)	Magnetite grade of whole rock (%)	V_2O_5 grade in magnetite (%)	Tonnes V_2O_5 in magnetite (thousands)	Tonnes V in magnetite (thousands)
Indicated	Upper	5.4	1.44	65.9	1.78	62.7	35.1
	Intermediate	27.6	0.67	32.9	1.91	173.1	97.0
	Lower	105.9	0.72	32.4	2.03	697.2	390.4
	Total	**139.0**	**0.74**	**33.8**	**2.00**	**933.0**	**522.5**
Inferred	Upper	10.2	1.46	63.6	1.75	113.3	63.5
	Intermediate	7.0	0.67	32.1	1.92	43.4	24.3
	Lower	25.4	0.74	31.3	2.00	158.4	88.7
	Total	**42.6**	**0.90**	**39.1**	**1.93**	**315.2**	**176.5**
Indicated and Inferred	Upper	15.5	1.45	64.4	1.76	176.0	98.6
	Intermediate	34.7	0.67	32.7	1.91	216.5	121.3
	Lower	131.3	0.72	32.1	2.03	855.6	479.2
	Total	**181.5**	**0.77**	**35.0**	**1.98**	**1,248.2**	**699.0**

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. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. 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.
6. Depleted using the January 2023 pit survey.
7. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74 percent.

Table 2: Vametco Mineral Resource at a cut-off grade of 20 percent magnetite, as at 31 December 2022 – Attributable basis

Class	Seam name	Tonnes (millions)	V_2O_5 grade of whole rock (%)	Magnetite grade of whole rock (%)	V_2O_5 grade in magnetite (%)	Tonnes V_2O_5 in magnetite (thousands)	Tonnes V in magnetite (thousands)
Indicated	Upper	4.0	1.44	65.9	1.78	46.4	26.0
	Intermediate	20.5	0.67	32.9	1.91	128.1	71.8
	Lower	78.4	0.72	32.4	2.03	515.9	288.9
	Total	**102.8**	**0.74**	**33.8**	**2.00**	**690.4**	**386.6**
Inferred	Upper	7.5	1.46	63.6	1.75	83.9	47.0
	Intermediate	5.2	0.67	32.1	1.92	32.1	18.0
	Lower	18.8	0.74	31.3	2.00	117.2	65.7
	Total	**31.5**	**0.90**	**39.1**	**1.93**	**233.2**	**130.6**
Indicated and Inferred	Upper	11.5	1.45	64.4	1.76	130.3	73.0
	Intermediate	25.7	0.67	32.7	1.91	160.2	89.7
	Lower	97.8	0.72	32.1	2.03	633.2	354.6
	Total	**135.2**	**0.78**	**35.0**	**1.98**	**923.7**	**517.3**

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. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. 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.
6. Depleted using the January 2023 pit survey.
7. Reported on an attributable basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74 percent.

Mineral Resources and Reserves *continued*

Table 3: Vametco Ore Reserves, 31 December 2022 – Gross basis

Class	Seam name	Tonnes (millions)	V_2O_5 grade of whole rock (%)	Magnetite grade of whole rock (%)	V_2O_5 grade in magnetite (%)	Tonnes V_2O_5 in magnetite (thousands)	Tonnes V in magnetite (thousands)
Probable	Upper	1.9	1.07	50.2	1.77	16.7	9.3
	Intermediate	8.3	0.57	26.7	1.87	41.3	23.1
	Lower	36.2	0.62	28.1	2.03	206.7	115.7
	Total	**46.4**	**0.63**	**28.7**	**1.99**	**264.6**	**148.2**

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry run of mine (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. Ore Reserves depleted as at 31 December 2022 using 31 December 2022 pit survey.
5. Ore Reserve estimate was based on a revised pit design completed in September 2022.
6. Ore Reserve modifying factors adjusted by seam based on analysis of pit to plant production information.
7. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as at 31 December 2022.
8. Reported on a gross basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74 percent.

Table 4: Vametco Ore Reserves, 31 December 2022 – Attributable Basis

Class	Seam name	Tonnes (millions)	V_2O_5 grade of whole rock (%)	Magnetite grade of whole rock (%)	V_2O_5 grade in magnetite (%)	Tonnes V_2O_5 in magnetite (thousands)	Tonnes V in magnetite (thousands)
Probable	Upper	1.4	1.07	50.2	1.77	12.4	6.9
	Intermediate	6.1	0.57	26.7	1.87	30.5	17.1
	Lower	26.8	0.62	28.1	2.03	152.9	85.6
	Total	**34.3**	**0.63**	**28.7**	**1.99**	**195.8**	**109.7**

Notes:
1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry run of mine (ROM) (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/ losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. Ore Reserves depleted as at 31 December 2022 using 31 December 2022 pit survey.
5. Ore Reserve estimate was based on a revised pit design completed in September 2022
6. Ore Reserve modifying factors adjusted by seam based on analysis of pit to plant production information.
7. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as at 31 December 2022.
8. Reported on a attributable basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74 percent.

BRITS PROJECT

This project is located directly east of Bushveld's Vametco Mine in the Bojanala Platinum District within the North- West Province and hosts high-grade vanadium mineralisation in several magnetite layers. The mineralisation, which is outcropping in places, 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.

Minerals Resource

A JORC- compliant maiden Mineral Resource was declared in June 2019 on Portion Three of the farm Uitvalgrond 431 JQ on which the project is situated, and no further exploration work has been conducted on the project after this mineral resource estimate. This resource was classified into the Indicated and Inferred categories.

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 percent V_2O_5 in-magnetite, at a cut-off grade of 20 percent magnetite in- whole rock for 175,400 tonnes of contained vanadium.
- The Indicated Mineral Resource tonnages account for 67 percent of the total combined Mineral Resource and stand at 44.9 Mt with an average grade of 1.59 percent 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 percent V_2O_5 in-magnetite for 137,000 tonnes of contained vanadium. This represents approximately 83 percent 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 percent V_2O_5 in-magnetite, although the tonnages are low at the current cut-off grade of 20 percent 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 m below surface and is based on the drilling on the western and central blocks of the farm Uitvalgrond Portion Three which extends over a strike length of approximately 1.65 km 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 1km.

Table 5: Brits Mineral Resource (Uitvalgrond 431 JQ Portion Three) at a cut-off grade of 20 percent magnetite, 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 concentrate (%)	Tonnes V_2O_5 in magnetite concentrate (thousands)	Tonnes V in magnetite concentrate (thousands)
Indicated	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
	Total	**44.9**	**0.56**	**28.94**	**1.59**	**206.3**	**115.6**
Inferred	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
	Total	**22.0**	**0.55**	**31.78**	**1.54**	**106.9**	**59.9**
Indicated and Inferred	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
	Total	**66.8**	**0.56**	**29.87**	**1.58**	**313.2**	**175.4**

Notes:
1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources, which are not Mineral Reserves, have no demonstrated economic viability.
3. Magnetite content (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 percent of the Mineral Resource for the property (Bushveld has a 62.5 percent ownership of the property (Uitvalgrond 431 JQ Portion Three).
6. Bushveld Minerals, through its subsidiary Bushveld is the operator of Brits Project.

Mineral Resources and Reserves *continued*

Table 6: Brits Mineral Resource (Uitvalgrond 431 JQ Portion Three) at a cut-off grade of 20 percent magnetite, 18 June 2019 – Attributable basis

Class	Seam name	Tonnes (millions)	V_2O_5 grade of whole rock (%)	Magnetite grade of whole rock (%)	V_2O_5 grade of magnetite concentrate (%)	Tonnes V_2O_5 in magnetite concentrate (thousands)	Tonnes V in magnetite concentrate (thousands)
Indicated	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
	Total	**28.0**	**0.56**	**28.94**	**1.59**	**129.0**	**72.2**
Inferred	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
	Total	**13.7**	**0.55**	**31.78**	**1.54**	**66.8**	**37.4**
Indicated and Inferred	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
	Total	**41.8**	**0.56**	**29.87**	**1.58**	**195.8**	**109.7**

Notes:
1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Mineral Reserves have no demonstrated economic viability.
3. Magnetite content (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 on a net attributable basis (Bushveld has a 62.5 percent ownership of the property (Uitvalgrond 431 JQ Portion Three).
6. Bushveld Minerals, through its subsidiary Bushveld is the operator of Brits Project.

Table 7: MML and MML- HW Mineral Resources at a 0.30 percent V_2O_5 cut-off, ≤120 m depth, as at 15 October 2017

Layer name	Mineral resource category	Width (m)	Tonnes (Mt[1])	Density (t/m³)	V_2O_5 (%)	Fe (%)	Fe_2O_3 (%)	TiO_2 (%)	SiO_2* (%)	Al_2O_3* (%)	P_2O_5* (%)	S* (%)	V_2O_5 (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
Total	**Indicated**	9.84	63.2	3.85	1.32	40.4	57.8	8.6	15.4	10.2	0.01	0.18	833.7	25.6
Total Mineral Resources[1]		**46.61**	**284.8**	**3.33**	**0.68**	**24.4**	**34.8**	**5.4**	**31.2**	**17.0**	**0.01**	**0.10**	**1,934.5**	**69.4**

Notes:
1. Rounding may cause computational errors; no geological losses applied.
* Included for information purposes only, no value will be derived from these materials.
** A 0.30 percent V_2O_5 cut-off has been applied laterally across this layer, so only material greater than 0.30 percent V_2O_5 is included in the tonnage listed in this table.

Table 8: Probable Ore Reserves for Mokopane Project

Orebody	True thickness (m)	Specific gravity (t/m³)	Tonnes (millions)	V_2O_5 (%)
MML Upper (MAG3)	4.09	4.08	15,342	1.43
MML Lower (MAG4)	3.59	4.00	13,154	1.39
Total/Average*	**7.68**	**4.04***	**28,496**	**1.41***

Notes:
Mineral Resource is reported at a 40 percent Fe_2O_3 cut-off; no geological losses applied.
* Included for informative purposes only, no value will be derived from these materials.

Table 9: AB Zone Mineral Resource at 0.3 percent V_2O_5 cut-off, ≤120 m vertical depth, as at 15 October 2017

Layer name	Mineral Resource category	Tonnes (Mt[1])	Thickness (m)	Density (t/m³)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	P_2O_5* (%)	SiO_2* (%)	Al_2O_3* (%)	S* (%)	V_2O_5 (%)
AB Upper	Inferred	2.7	1.93	3.29	0.89	34.7	5.4	0.01	30.3	17.1	0.06	24.3
AB Parting	Inferred	3.7	2.86	3.07	0.48	20.9	3.0	0.01	40.0	19.7	0.01	17.9
AB Lower	Inferred	6.0	4.51	3.21	0.75	29.1	4.3	0.01	34.6	18.6	0.01	45.1
Total[1]	**Inferred**	**12.5**	**9.30**	**3.18**	**0.70**	**27.9**	**4.2**	**0.01**	**35.3**	**18.6**	**0.02**	**87.3**

Notes:
1. Rounding may cause computational errors; No geological losses applied.
* Included for informative purposes only, no value will be derived from these materials.

The Mineral Resources and Ore Reserves estimates are based on the Competent Person's Report prepared by MSA Group as at 15 October 2017.

Table 10: N-Q Zone (weathered + unweathered) Indicated Mineral Resource less than 200 m depth, as at 8 March 2013

Layer name	Tonnes (millions)	Specific gravity (g/cm³)	Fe (%)	Fe_2O_3 (%)	Fe metal (Mt)	TiO_2 (%)	V_2O_5 (%)	SiO_2 (%)	Al_2O_3 (%)	P_2O_5 (%)	S (%)
Q3	138.63	3.61	31.7	45.4	43.99	10.2	0.13	25.2	9.9	0.06	0.40
Q2	81.17	4.01	41.9	59.9	34.00	15.2	0.28	12.6	6.5	0.02	0.27
Q1	26.36	3.59	32.5	46.6	8.58	10.5	0.28	22.3	9.9	0.02	0.27
PMAG	34.44	3.62	32.4	46.3	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	0.01	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
Total	**355.09**	**3.67**	**33.51**	**47.65**	**119.06**	**10.85**	**0.22**	**22.37**	**9.66**	**0.05**	**0.38**

* Layer reported at a 35 per cent Fe_2O_3 cut-off; no geological losses applied.

Table 11: N-Q Zone (unweathered) Inferred Mineral Resource, 200 m to 400 m depth, as at 8 March 2013

Layer Name	Tonnes (millions)	Density (t/m³)	Fe (%)	Fe_2O_3 (%)	Fe metal (Mt)	TiO_2 (%)	V_2O_5 (%)	SiO_2 (%)	Al_2O_3 (%)	P_2O_5 (%)	S (%)
Q3	139.03	3.59	30.2	43.3	42.05	8.8	0.09	28.3	10.3	0.13	0.61
Q2	92.64	3.99	40.2	57.5	37.27	14.1	0.23	15.3	7.6	0.02	0.55
Q1	23.42	3.64	32.7	46.8	7.66	10.8	0.27	22.2	10.6	0.02	0.36
PMAG	38.28	3.58	30.6	43.7	11.70	9.8	0.26	23.5	11.5	0.04	0.74
PFWDISS*	76.51	3.37	26.8	38.3	20.49	6.9	0.21	30.2	12.8	0.03	0.43
OMAG*	1.87	3.77	32.4	46.3	0.61	9.5	0.40	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
Total	**378.97**	**3.66**	**32.47**	**46.47**	**123.12**	**10.07**	**0.19**	**24.24**	**10.20**	**0.06**	**0.55**

* Layer reported at a 35 percent Fe_2O_3 cut-off; no geological losses applied.

Mineral Resources and Reserves continued

Table 12: P-Q Zone Inferred Mineral Resource, surface to 300 m vertical depth at a 35 percent Fe_2O_3 cut-off for the farms Schoonoord 786LR and Bellevue 808LR, as at 15 October 2017

Layer Name	Tonnes (millions)	Density (t/m³)	Fe (%)	Fe_2O_3 (%)	Fe metal (Mt)	TiO_2 (%)	V_2O_5 (%)	SiO_2 (%)	Al_2O_3 (%)	P_2O_5 (%)	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
Total	**220.8**	**3.85**	**36.2**	**51.9**	**80.03**	**11.8**	**0.20**	**20.1**	**9.2**	**0.12**	**0.57**

* Layer reported at a 35 percent Fe_2O_3 cut-off; no geological losses applied.

The PQ Phosphate Project Mineral Resources

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 percent P_2O_5 as shown in Table 13. 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 percent P_2O_5 concentrate grades are achievable from this deposit.

Figures are based on the Competent Person's Report prepared by MSA Group as at 15 October 2017.

Table 13: Inferred Mineral Resource of Phosphate Zone at a Three percent P_2O_5 cut-off, as at 15 October 2017

Farm	Tonnes (millions)	P_2O_5 (%)	Fe_2O_3 (%)	S* (%)	SiO_2* (%)	*CaO* (%)	Density (t/m³)
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	0.41	33.3	8.9	3.36
Total[1]	**441.6**	**3.6**	**32.6**	**0.39**	**33.7**	**9.0**	**3.32**

1. All tabulated data has been rounded and as a result minor computational errors may occur.

Lemur Holdings Limited

The Mineral Resource estimates are based on the Competent Person's Report prepared by Sumsare Consulting Group CC at 26 April 2023.

Table 14: Resource for the Imaloto coal project

Category	Gross			Mineable (SAMREC 2016)			Net attributable (99%)			Operator
		Raw coal quality (ADB)			Raw coal quality (ADB)			Raw coal quality (ADB)		
Coal Resource per asset	Tonnes (millions)	Ash (%)	CV (MJ/Kg)	MTIS (Mt)	Ash (%)	CV (MJ/kg)	Tonnes (millions)	Ash (%)	CV (MJ/kg)	
Measured	90.448	33.5	19.26	76.500	33.5	19.26	75.735	33.5	19.26	Lemur Holdings Limited
Indicated	41.206	37.0	17.66	33.274	37.0	17.66	32.941	37.0	17.66	
Inferred	8.733	36.6	18.42	6.637	36.6	18.42	6.571	36.6	18.42	
Indicated and Inferred	49.939	36.9	17.79	39.911	36.9	17.79	39.512	36.9	17.79	
Total	**140.387**	**34.7**	**18.74**	**116.411**	**34.7**	**18.75**	**115.247**	**34.7**	**18.75**	

Acronyms

AEL	Air emission licence
AMV	Ammonium Metavanadate
AGM	Annual General Meeting
BELCO	Bushveld Electrolyte Company
Brits	Brits Project
CAGR	Compound Annual Growth Rate
CLN	Convertible Loan Note
CSP	Conditional share plan
DFS	Definitive Feasibility Study
DFFE	Department of Forestry, Fisheries and the Environment
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EBITDA	Earning Earnings Before Interest, Taxes, Depreciation, and Amortisation
EHL	Enerox Holdings Limited
Enerox	Enerox GmbH
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ESG	Environment, social and governance
ERM	Enterprise Risk Management
FeV	Ferrovanadium
GSSA	Geological Society of South Africa
GW	Gigawatt
GWh	Gigawatt hour
IDC	Industrial Development Corporation
IFC	International Finance Corporation
IPP	Independent power producer
JSE	Johannesburg Stock Exchange
JORC	Joint Ore Reserves Committee
KPI	Key performance indicator
Kt	Thousands of tonnes
LTI	Long-term incentive
LTIFR	Lost Time Injury Frequency Rate
LSE	London Stock Exchange
MES	Minimum emissions standard
MML	Main Magnetite Layer
MML-HW	Main Magnetite Layer Hanging Wall
mtV	Metric ton of vanadium
mtVp.a.	Metric ton of vanadium per annum
MW	Megawatt
MWh	Megawatt hour
Mt	Millions of tonnes
MVO	Modified vanadium oxide
OEM	Original equipment manufacturer
PFA	Production Finance Agreement
P_2O_5	Phosphate
QMS	Quality Management System
QCA Code	Quoted Companies Alliance Corporate Governance Code
RONA	Return on Net Assets
SLP	Social and Labour Plan
STI	Short-term incentive
TiO_2	Titanium dioxide
TIFR	Total Injury Frequency Rate
TGP	Total guaranteed pay
TSR	Total shareholder return
Vametco	Vametco Mine & processing plant
V_2O_5	Vanadium pentoxide
V_2O_3	Vanadium trioxide
VRFB	Vanadium Redox Flow Battery
VRFB-H	VRFB Holdings Limited
Vanchem	Vanchem vanadium plant
WACC	Weighted average cost of capital
WML	Waste management licence
WUL	Water use licence

Glossary

Mining terms

Beneficiation
Any process that improves (benefits) the economic value of the ore by removing the gangue minerals prior to further metallurgical treatment.

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. 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 strata situated above the targeted mineralised ore zone.

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 of 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 of 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 mined economically to completion.

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 mineral form of iron ore with the chemical formula Fe_3O_4.

Main Magnetite Layer (MML)
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 1 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 of 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
Reconciling the metal quantity within the latest resource/reserve estimate that has been mined from a previous resource/reserve estimate.

Modified vanadium oxide (MVO)
An oxide form of vanadium (a mixture of V_2O_5, V_2O_4 and V_2O_3) that is chemically produced by reducing ammonium metavanadate (NH_4VO_3) and is used as feedstock for final vanadium products such as nitro vanadium and ferrovanadium (FeV).

Open pit mining
A method of mining rock or minerals by removing them from an open pit commencing from the earth's surface.

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
Ore mined in the course of regular mining activities and extracted from the mining operation. 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, perpendicular to its down dip direction.

Other terms
Bankable feasibility study
A feasibility study is bankable if it has been prepared in detail and with objectivity so that the 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 DFS 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 amortization 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.

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 Annual General Meeting

BUSHVELD MINERALS LIMITED

(Incorporated in Guernsey under registered number 54506)

REGISTERED OFFICE:

Oak House, Hirzel Street, St Peter Port,
Guernsey, GY1 3RH.

23 June 2023

Notice is hereby given of an Annual General Meeting of Bushveld Minerals Limited to be held at 12 noon on 2 August 2023 at Oak House, Hirzel Street, St Peter Port, Guernsey, GY1 3RH.

PLEASE READ CAREFULLY – ARRANGEMENTS FOR THE ANNUAL GENERAL MEETING

The Board recognises that travel to Guernsey may not be feasible for the majority of shareholders and so would like to draw the attention of shareholders to the following:

1. 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.
4. The arrangements for the Meeting proposed by the Board are subject to constant review and, should they be subject to change, 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 2022.
2. To approve the Directors' fees as reflected in the 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.
5. That Michael Kirkwood shall be re-elected as a Director, having retired by rotation and offered himself for re-election.
6. That Kevin Alcock shall be re-elected as a Director, having retired by rotation and offered herself for re-election.
7. That Craig Coltman shall be re-elected as a Director in accordance with Article 140 of the Articles, having been appointed by the Directors in July 2023.

8. 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 128,781,828 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 percent of the average closing price of such shares for the five 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).
9. 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 to 429,272,760 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 RESOLUTIONS

10. If Resolution 9 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 9 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 128,781,828 shares, being approximately 10.0 percent 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

K BREDIN
Company Secretary
23 June 2023

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 31 July 2023. 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.
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 measures 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 https://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 note 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 https://www.signalshares.com by 12 noon on 31 July 2023;
   - by requesting a hard copy form of proxy directly from the Registrars, Link Group by phone – UK – 0371 664 0300. (Calls are charged at the standard geographic rate and will vary by provider. Calls outside the United Kingdom will be charged at the applicable international rate. Lines are open between 9:00am - 5:30pm, 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 Group at PXS1, Central Square, 29 Wellington Street, Leeds, LS1 4DL by 12 noon on 31 July 2023; or
   - 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), 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 https://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). 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 & International 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 12 noon on 31 July 2023. 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 & International 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 2023 (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 1,287,818,281 ordinary shares, carrying one vote each. Therefore, the total voting rights in the Company as at 22 June 2023 are 1,287,818,281.
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.

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