

THIS ANNOUNCEMENT CONTAINS INSIDE INFORMATION FOR THE PURPOSES OF THE MARKET ABUSE REGULATION (EU) NO. 596/2014 (INCLUDING AS IT FORMS PART OF THE LAWS OF ENGLAND AND WALES BY VIRTUE OF THE EUROPEAN UNION (WITHDRAWAL) ACT 2018 ("MAR")).

28 April 2023

Ferro-Alloy Resources Limited
("Ferro-Alloy" or the "Group" or the "Company")

2022 Final Results and Updated Ore-Body 1 Mineral Resource Estimate ("MRE")

Ferro-Alloy Resources Limited (LSE:FAR), the vanadium producer and developer of the large Balasausqandiq vanadium deposit in Southern Kazakhstan, announces its final results for the year ended 31 December 2022.

In addition, the Company announces that on the 27 April 2023 it received the results of the revised mineral resource estimate ("MRE") from SRK Consulting Ltd ("SRK") for Ore-Body 1 ("OB1") at the Balasausqandiq deposit. Selected highlights from the report are summarised below with a full announcement expected to be released on 2 May 2023, once management has reviewed the full report.

MRE selected highlights (post period)

- An Indicated Mineral Resource of 32.9 million tonnes for OB1 at a mean grade of 0.62% V₂O₅ reported at a marginal cut-off grade of 0.4% V₂O₅ - equating to 203,364 contained tonnes of V₂O₅
- An increase of 8.6 million tonnes (35.4%) of mineral resource and an increase of 38,058 tonnes (23%) of contained V₂O₅ by comparison to the Company's 2018 Competent Persons Report
- The results of the previously reported infill drilling and trenching programs completed during 2021/22 have been successful in converting 100% of the Resources to Indicated for the OB1 deposit. No Measured or Inferred Resource are stated

Financial and corporate highlights

- Group revenues of US\$6.27m (2021: US\$4.73m), a 28% increase over the period, but slightly below market expectations
- The Group made an overall loss for the year of US\$4.29m (2021: loss of US\$2.83m), a greater loss than market expectations, mainly attributable to the difficulties importing raw materials during the period, increased costs of associated reagents and fuel
- Cash in the bank of US\$4.33m as at 31 December 2022 (2021:US\$2.81m)
- Successful equity fundraising of US\$10.0m (approximately £8.6m) in September 2022 to advance the feasibility study on the Balasausqandiq deposit
- Continue to develop the Group's senior management in readiness for the main project inception with the appointment of William Callewaert as Chief Financial Officer, Baurzhan Tleulinov as Mine Project Director and Anvar Moldakhanov as Kazakhstan Finance Director

Feasibility study

The feasibility study for Stage 1 of the Balasausqandiq project is expected to be completed in the final quarter of 2023 with Stage 2 to follow in 2024.

Work is progressing well and continues to support or exceed the results of previous company test work that was disclosed in the 2018 Competent Persons Report, which indicated a transformative vanadium project producing some 22,400 tonnes of vanadium pentoxide per annum (over 10% of current world supply), with an operating margin of almost 80% and a project Net Present Value of c.US\$2 billion with relatively modest capital expenditure.

Progress during the period includes:

- Completion of the drilling programme for Ore-Bodies 1,2,3 and 4
- Open pit geotechnical drilling for Ore-Body 1 has been completed with mechanical testing pending
- Open pit hydrogeological drilling completed
- Full site topographical survey completed
- Metallurgical testing nearing completion indicates high metallurgical recovery in line with previous Company test work
- Carbon flotation tests show that a >40% carbon concentrate can be made with good overall carbon recovery. Test work on the resulting rubber performance shows that partial substitution of this concentrate for carbon black in the production of rubber for tyres can be made without loss of performance

Existing operation

Although operations during the year were severely impacted by difficulties importing raw materials, the Group has made significant progress with the development of the existing operation.

- The planned expansion of the plant to increase production and to recover more value from each tonne treated was completed, including:
 - Approximately doubling the potential maximum recovery of molybdenum from additional ion-exchange resin
 - Adding a third roaster to the vanadium pentoxide line to increase maximum throughput of treatable concentrates and a fourth roaster for the nickel process
 - Installation of three new press filters
 - Commissioning of a new equipment to convert ammonium metavanadate to vanadium pentoxide that commands better product pricing in the market
 - Implementing a plan to convert the fuel of the roasting ovens used by the plant from diesel to gas
- Increased the number of vanadium concentrate supply contracts and diversified source location in order to minimise the risk of failure of delivery of concentrates by any one supplier
- Funding from a Kazakhstan government agency was received to undertake a project leading to the production of vanadium oxides for making electrolyte for vanadium redox flow batteries

Reconciliation of year end losses

- The Company announced a preliminary unaudited loss for the year in January in the region of US\$3.3m. The further losses being reported of c. US\$1m incurred following the finalisation of the year end accounts and are a result of:
 - c. US\$210,000 of negative pricing adjustments incurred on long duration delivery sales contracts due to the falling price of vanadium between June and November

- c. US\$160,000 of post year end stock provisions made against slow moving and obsolete stock lines held by the Group at the year end
- c. US\$55,000 of obsolete asset write offs for Group equipment that can no longer be repaired or do not have a future useful life
- c. US\$205,000 of administrative expenses incurred by the Group after the year relating to 2022 trading activity
- c. US\$370,000 of foreign exchange losses incurred on finalised year end balances and transactions completed during the year

Outlook

- Positive updated MRE report on the OB1 deposit shows an increase in contained metal and the successful conversion of 100% of the Resources to Indicated – post period
- In Q1 2023 a contract was signed with a significant new ongoing supplier of raw materials to compensate for the shortfalls being experienced from existing suppliers
- The Group’s assumption is for metal prices to remain at current levels of around US\$9.50/lb of vanadium pentoxide and US\$24.3/kg of nickel for the remainder of 2023. Molybdenum prices have come down from the exceptionally high levels of early 2023 but are expected to remain at current levels of around US\$53/kg.
- With the plant now fully developed and with concentrates expected to be in good supply, the Company believes that both the production and financial results for 2023 are likely to be significantly better than 2022 and result in the Company operating profitably because of:
 - increased quantity of concentrates to be treated
 - increased recoveries of vanadium, molybdenum and nickel from each tonne treated
 - higher prices expected for vanadium as a result of the conversion of AMV to vanadium pentoxide or other oxides
 - return to more normal levels of transport, fuel and reagent costs which in 2022 were impacted by the ending of the pandemic and the commencement of the Ukrainian invasion.

Sir Mick Davis, Non-executive Chairman, commented:

“The management team has acted to address external pressures related to the constrained raw material supply which impacted financial results during the year.

Another successful capital raise in September, followed by the endorsement of the recent mineral resource estimate, enables the Company to continue its journey towards becoming an important global vanadium producer. At the same time, it is encouraging to see continuing growth in demand for vanadium serving both the growing stainless steel and battery market segments.”

Commenting on the results, Nick Bridgen, CEO of Ferro-Alloy Resources said:

“It is extremely encouraging that the feasibility study results so far have met or exceeded the Company’s previous work which shows how transformative the Balasausqandiq project will be for the world’s vanadium industry.

“The existing operation has been impacted by supply difficulties during 2022 but the plant is now fully developed and, with concentrates in good supply, we expect the existing plant to operate profitably from now on, producing a meaningful contribution to the development of the Balasausqandiq project.

“I am also delighted to have received the updated MRE report from SRK which has shown some encouraging results at our OB1 deposit. We are reviewing the report and will provide shareholders with an update on 2 May 2023.”

Publication of Annual Report

The Company's annual report will be available shortly on the Company's website at www.ferro-alloy.com

For further information, visit www.ferro-alloy.com or contact:

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Report on Operations

Strategy

Operational Review

During 2022 and the first quarter of 2023, the Group made significant progress with the ongoing feasibility study into the development of the transformative Balasausqandiq vanadium deposit as well as the expansion of the existing operations treating bought-in vanadium concentrates.

Feasibility study

The progress made by the Group on the Stage 1 feasibility study is covered more fully by the feasibility study review.

The highlights of that review are:

- Completion of the drilling programme for Ore-Bodies 1,2,3 and 4;
- Imminent publication of the revised mineral resource estimate for Ore-Body 1 ("OB1");
- Mine planning for Stage 1 of the feasibility study to commence post publication of the OB1 mineral resource estimate;
- Open pit geotechnical drilling for OB1 has been completed with mechanical testing pending;
- A full site topography survey has been taken;
- Extraction of vanadium during acid leaching shows 94-97% vanadium extraction into solution and 95% adsorbed in ion-exchange in line with previous Group test work; and
- Flotation tests show that a >40% carbon concentrate can be made with good overall carbon recovery. Test work on the resulting rubber performance shows that partial substitution of this concentrate for carbon black in the production of rubber for tyres can be made without loss of performance.

Existing operation

The existing operation is the result of the conversion and expansion of the large scale test-plant that was constructed to pilot and test the metallurgical processes to be used in the main Balasausqandiq project.

This operation will provide a cash flow to assist with the substantial ongoing costs of the preparation of the feasibility study and to contribute to the construction costs of the Balasausqandiq project mining operations.

A second objective is to retain the high-quality technical and operating team that developed the metallurgical processes to be used in the main Balasausqandiq project so that they are available to assist with the feasibility study, design and future construction and operation of Stage 1 and Stage 2 of the Balasausqandiq project. As a result, the Group's work-force is experienced and will have a high level of technical and operational expertise prior to commissioning of the mine. This significantly de-risks the project.

Plant developments

The original test-plant has been adapted to treat bought-in vanadium concentrates. During 2022 and the start of 2023, the plant has been significantly expanded and equipment added to enable the full recovery of all of the components of the purchased concentrates so that a great deal more value is extracted from each tonne treated and, more importantly, no tailings or other residues are left on-site.

Although the plant is designed to be flexible and able to treat a variety of raw materials, the most common raw materials are the spent (charged) catalysts used to remove impurities from crude oil in refineries. These typically contain vanadium, molybdenum and nickel, all of which can now be recovered.

Specifically, the Group has completed the following installations at the plant during the year:

- Added a third roaster to the vanadium pentoxide line to increase maximum throughput of treatable concentrates;
- Added a fourth roaster to either upgrade the low-grade nickel residues to high-grade nickel concentrates, or to provide additional vanadium pentoxide throughput capacity, depending on market prices and demand;
- Procured the equipment to convert the roasting fuel used by the plant from diesel to natural gas (to be commissioned in May 2023);
- Approximately doubled the maximum recovery of molybdenum by the addition of additional ion-exchange resin tanks;
- Installed three new press filters;
- Commissioned a new dissociation oven to convert ammonium metavanadate (“AMV”) to vanadium pentoxide;
- Purchased a new product drying oven; and
- Equipped a new ferro-molybdenum department to provide greater smelting capacity and better environmental control.

Together, these additions have transformed the operating capability of the Group by not only increasing throughput capacity but also maximising the value recovered from each tonne treated.

Production

During the year, production of vanadium pentoxide and molybdenum (in ferro-molybdenum) amounted to 305.5 tonnes (2021: 259.6 tonnes) and 36.0 tonnes (2021: 38.7 tonnes), respectively.

Quarter	Production of Vanadium pentoxide (tonnes of vanadium pentoxide contained in AMV)	Growth vs last year	Production of Molybdenum (tonnes of molybdenum contained in ferro-molybdenum and in calcium molybdate)	Growth vs last year
Q1	81.1	+41%	11.3	-18%
Q2	91.7	+197%	10.4	+395%
Q3	69.9	-	11.0	-19%
Q4	62.8	-38%	3.3	-65%
2022 total	305.5	+17.7%	36.0	-7%

The plant also produced a nickel concentrate for sale to customers during the year.

Production during 2022 was severely disrupted by a combination of factors that affected deliveries of concentrates available for processing at the plant.

At the beginning of 2022 both concentrate supplies and transport routes continued to be adversely affected by residual Covid-19 issues as well as the piecemeal re-opening of the global economy following lockdown. Domestic riots in Kazakhstan during January caused further, albeit short-term, disruption, and then in February, the Russian invasion of Ukraine resulted in increased disruption across the Group’s supply and transport networks.

As a result, transportation prices increased dramatically and some of the usual freight routes into Kazakhstan were blocked, requiring longer and more expensive routing. Similarly, the cost and availability of reagents and, particularly, diesel, were also impacted by the geo-political disruption. Diesel prices rose significantly over the year and, at times, became unavailable.

In order to mitigate future concentrate supply issues in light of the ongoing regional geo-political disturbance and other factors, the Group has:

- i. increased the number of vanadium concentrate supply contracts and diversified source location in order to minimise the risk of failure of delivery of concentrates by any one supplier; and
- ii. implemented a plan to convert the fuel intake of the roasting ovens used by the plant from diesel to natural gas which will not only be cheaper, but also be more reliable and will make use of more widely available gas supplies in the region.

Product prices remained broadly stable during the year:

	Start of 2022	Average for the year	Current (21 April 2023)
Vanadium pentoxide (US\$/lb)	8.50	9.19	9.50
Ferro-molybdenum (US\$/kg of Mo)	44.00	43.95	53.00
Nickel (US\$/kg)	20.72	25.60	24.33

Development of VRFBs

Vanadium VRFBs (vanadium redox flow batteries) are a means of energy storage particularly suitable for the longer-duration storage of energy from intermittent renewable sources in order to make energy available at night and when there is no wind. VRFBs have certain advantages over lithium-ion technology, including being scalable, not degrading over time and not catching fire, which make them more suitable for bulk energy storage.

The world-wide roll-out of VRFBs appears to have started and although forecasts vary, the general expectation is for the demand for vanadium for electrolyte purposes to expand to become a significant part of overall vanadium demand.

The Group has been awarded a grant from the Kazakhstan Science Fund to produce vanadium oxides for the production of vanadium electrolyte for use in VRFBs. The grant will be used to buy additional production equipment and to modify existing equipment to produce vanadium tri-oxide, a test VRFB and some related equipment for laboratory use. After a period of testing and development, the plan is to continue to produce and market vanadium tri-oxide and, if there is demand in the local region, to supply electrolyte. The aim is to position the Group to be able to supply at a large scale into this potentially very large market when the main Balasausqandiq project is commissioned.

Production outlook

The planned expansion of the existing operation is now complete. The plant is, therefore, capable of making significant cash flows to fund the ongoing costs of completing the Stage 1 feasibility study and contribute to the funding of the future construction of the Balasausqandiq facilities.

In order to prevent the recurrence of the concentrate supply problems of 2022 and early 2023, the Group has signed additional concentrate supply contracts. Supplies under previous contracts have resumed and are expected to continue, so the board of directors (“the Directors” or “the Board”) are optimistic that the historic supply problems have now been resolved.

Vanadium prices are strong, and although difficult to forecast, the Group's assumption is for them to remain at current levels of around US\$9.50/lb of vanadium pentoxide and US\$24.3/kg of nickel. For the remainder of 2023. Molybdenum prices have come down from the exceptionally high levels of early 2023 but are expected to remain at current levels of around US\$53/kg.

With the plant now fully developed and with concentrates expected to be in good supply, the Group expects the existing plant to operate profitably, producing a meaningful positive cash flow, for the remainder of 2023 and beyond.

Financial Review

Earnings

The Group reported increased revenues of US\$6.27m for the year compared to US\$4.73m in 2021, reflecting a 33% increase in sales over the period.

US\$'000	2022	2021
Revenue from shipments recorded at the price at time of dispatch	6,773	4,709
Adjustments to revenue after final price determination and fair value changes	(502)	22
Total Revenue	6,271	4,731

Revenue is recognised at the time of transfer of control of the Group's products to the customer but, as is common in the industry, the final pricing determination is often based on assay and prices after arrival of the goods at the final port of destination. The adjustments to revenue reflect these final pricing determinations which occur after the relevant revenue is initially recognised.

Between mid-June and the end of November the market price of vanadium pentoxide fell from around US\$10.50/lb to c. US\$7.50/lb and, therefore, a number of the Group's sales contracts entered into before June were subject to a negative final pricing determination upon arrival at the final port of destination leading to an overall negative revenue adjustment of c. US\$0.5m for the year. The price of vanadium pentoxide has subsequently risen to c. US\$10/lb after the year end.

Cost of sales increased to US\$7.5m from US\$4.9m in 2021 primarily reflecting increases in the prices of the raw materials used in the production process of AMV and other products. In particular, as a result of the Russian invasion of Ukraine, a number of the reagents used by the plant and sourced from the CIS significantly increased in price during the year, as did the cost of diesel. The prices of reagents and diesel have both stabilised after the year end, and as noted in the Operational Review, the Group is taking steps to convert the fuel supply for the roasting ovens from diesel to natural gas which is a significantly cheaper form of fuel and more widely available in country. The largest part of the cost of sales is the purchase of raw materials, the price for which is determined as a percentage of the value of the content of vanadium at the prices prevailing at the time of purchase.

Administrative expenses of US\$2.5m (2021: US\$2.5m) were broadly in line with the prior year other than wages and salary costs which have increased by approximately US\$0.58m as a result of the recruitment of a number of senior management employees during the year including a group finance director, mine project director and Kazakhstan finance director. The Group has not suffered any non-refundable VAT write-downs during the year as was the case in 2021 (US\$0.5m).

The Group incurred other expenses during the year of US\$0.43m (2021: US\$0.011m) comprising currency conversion losses (representing transactional foreign exchange differences), an agreed write down of slow moving / obsolete stocks held at the existing plant and the write-off of unrepairable factory equipment.

The Group made an overall loss for the year of US\$4.29m (2021: loss of US\$2.83m).

Cashflow

Net cash outflows from operating activities, before changes in working capital, for the year totalled US\$3.46m (2021: US\$4.98m) following adjustments for depreciation, amortisation, inventory write-downs and net finance gains. Changes in trade and other receivables increased to US\$1m (2021: US\$0.4m) as a result of the recognition of a significant VAT refund due from the Kazakh tax authorities at the year end (received after the year end). Changes in trade payables increased to US\$1.56m (2021: decrease US\$ 0.85m) in light of substantial orders of concentrates for processing at the existing plant, yet to be paid for by the Group.

Net cash outflows from investing activities totalled US\$4.3m (2021: US\$2.5m) and included US\$1.47m (2021: US\$2.2m) of capital expenditure associated with the planned expansion of the processing operation's production facilities (see Operational Review) and US\$2.87m (2021: US\$0.33m) of expenditure on the Stage 1 feasibility study capitalised as an exploration and evaluation asset (see Note 13).

Net cash inflows from financing activities for the year were US\$9.19m (2021: US\$10.06m), representing the proceeds of the US\$10m cash equity fundraise conducted during the year (2021: US\$5.9m) less the costs of the fundraise of US\$0.43m (2021: US\$0.24m), repayment of a bondholder entitled to an early redemption of US\$0.3m (2021: proceeds received of US\$0.48m) and interest payable to the Company's residual bondholders of US\$0.08m (2021: US\$0.08m).

The Group held cash of US\$4.33m at 31 December 2022 (2021: US\$2.81m).

Balance sheet review

Total non-current assets increased to US\$10.93m from US\$7.25m principally due to the continued capitalisation of the feasibility study as an exploration and evaluation asset and the addition of new equipment at the production plant.

Current assets increased from US\$5.7m to US\$8m, reflecting a significant VAT refund due from the Kazakh tax authorities at the year end and an increase in cash from the finance raising activities completed during the year, as noted below.

Total non-current liabilities decreased by approximately US\$0.9m during the year from US\$0.94m to US\$0.03m as a result of the Company's outstanding bond liabilities being reclassified to current liabilities to reflect their maturity in March 2023.

Current liabilities increased from US\$1.34m to US\$3.5m as a result of the outstanding bond reclassification noted above and the purchase of significant quantities of concentrate for the existing operation prior to the year end.

Corporate

During September 2022, the Company completed an equity fundraise by way of a placing, in addition to direct subscriptions, of ordinary shares of the Company. As a result, the Company issued 72,025,351 new ordinary shares for cash at a price of 12 pence per share raising a total of £8.64m (US\$10.0m).

Key performance indicators

The Group is in a period of development and its current operations, the processing of bought-in secondary vanadium-containing materials for extraction of vanadium, are relatively small in comparison with the main objective of the Group to develop the Balasausqandiq deposit and processing facility. Moreover, the current operations are themselves undergoing a significant expansion which means that operations are not in a steady state capable of meaningful inter-period comparisons. The Directors are, therefore, of the opinion that key performance indicators may be misleading if not considered in the context of the development of the operation as a whole for which the information for shareholders is better given in a descriptive manner than in tabular form.

Furthermore, the existing processing business of the Group is complex and the business model has been developed to allow maximum flexibility in the type of raw materials treated so that market variations in raw material prices can be moderated by the ability to select raw materials which may be more profitable to treat notwithstanding they be of lower grade and result in a lower level of production. Nevertheless, the Directors consider that the main indicator of performance, although

subject to interpretation as described above, is the level of production (refer to the Operational Review for further information).

Feasibility Study Review

The main objective of the Group is to bring into production the Balasausqandiq deposit and to build a processing plant to treat one million tonnes of ore per year (Stage 1) mined from OB1 and later increase to a total of four million tonnes per year (Stage 2) through the additional mining of Ore Bodies 2, 3 and 4 (“OB2, 3 and 4”).

An initial feasibility study has been completed under Kazakhstan standards and is in the process of being upgraded and expanded to western bankable standards by the Group’s appointed feasibility study consultants, SRK Consulting (Kazakhstan) Limited.

Balasausqandiq deposit

The Balasausqandiq deposit is exceptional in a number of ways. Primarily, it is not a typical vanadiferous magnetite deposit but a sedimentary deposit and is expected to have far lower capital and operating costs.

Furthermore:

- The ore is amenable to a whole-ore pressure acid leach process which gives a far higher metallurgical recovery than conventional magnetite extraction;
- Pre-concentration of the ore and high temperature roasting are not required;
- There are potentially valuable by- or co- products within the ore, principally carbon, which can be easily recovered without significant additional processing;
- Major infrastructure items of power and road and rail connections already exist on site or nearby;
- The Balasausqandiq deposit is a very large deposit and is easily mined from an open pit. Stages 1 and 2 combined envisage production of 24,000 tonnes per year of vanadium pentoxide, over 10% of known current world supply; and
- The Competent Person’s Report of 2018 indicated exceptional financial characteristics, with an overall net present value (“NPV”) of US\$2 billion, an operating margin of nearly 80%, and low capital costs.

The development of the deposit is planned to be in two stages, Stage 1 and Stage 2. Stage 1 will involve the construction and operation of an initial process plant treating one million tonnes per year of ore, followed, as soon as commissioning has been successfully concluded, by a Stage 2 operation for a further three million tonnes per year. The staging is to allow for the reduction of engineering scale-up risk and to also allow time for the development of markets as production increases. The staged development also reduces the amount of capital that has to be raised for the initial development, with the second stage to be largely financed by the earnings of the first.

The feasibility study is also being carried out in two stages, with the results of the first stage scheduled to be announced in the fourth quarter of 2023 and those for the second stage in 2024.

Exploration

There are six known ore-bodies in the deposit which have been named OB1 - 6, and there is some evidence of a seventh. Of these, only OB1 had previously been explored sufficiently to declare a resource under the CRIRSCO approved standards.

The Group’s recent drilling campaign, now completed, has included 19,720 meters of drilling on OB1, 2, 3, and 4 with a view to being able to identify CRIRSCO compliant resources and, eventually, reserves, sufficient to provide feed for two stages of development, the first involving the processing of one million tonnes per year of ore, and the second an additional three million tonnes per year.

OB1

The exploration of OB1 during the year involved infill drilling and trenching to reduce the section spacing from around 500m to 250m, so as to be able to further define and upgrade the resource.

Following receipt and analysis of the assaying from the updated drilling programme, a revised resource estimate for OB1 is expected by the Company imminently.

OB2, 3 and 4

The drilling of OB2, 3 and 4 has been completed and receipt of the final assay results and corresponding mineral resource estimate is expected later in the year. Some 25% of the planned exploration area has proved to be difficult and expensive to access and as a result has not been drilled (albeit the Company does not expect the area of difficult topography to create difficulties for actual mining).

The new mineral resource estimate for these ore-bodies will exclude the area of difficult topography in the expectation that the remaining area will provide sufficient ore to feed the Stage 2 development.

Open pit geotechnical drilling

Open pit geotechnical drilling for OB1 has been completed and geotechnical sample collection and mechanical testing is currently in progress. The results of the drilling and subsequent mechanical testing programme will be used to confirm the open pit slope design.

Open pit hydrogeological drilling

Open pit hydrogeological drilling for OB1 has commenced and is expected to finish on schedule during July 2023. The results of the drilling will determine potential water inflows and pore pressures in the pit walls, providing inputs to the geotechnical and mine planning studies.

Water supply hydrogeological drilling

A geophysical survey of the water supply bore field area has been completed. The results of the survey will be used to define the fieldwork and drilling programme required to define the water extraction bore field required to support the project's water needs.

Site topography survey

A full topography survey of the deposit utilising both aerial drone footage and satellite imagery has been completed to identify the sites most suitable for the location of the process plant and planned tailing storage facility.

Processing

Metallurgy

Extraction of vanadium during acid leaching, following initial pilot and subsequent testing, continues to be above Group expectations with 94-97% vanadium extraction into solution.

Metallurgical testing including ore body variability tests, solid liquid separation tests and ion exchange testing continues at SGS Canada Inc ("SGS") supervised and managed by Tetra Tech Limited ("Tetra Tech").

Testing of the carbon element of the ore has been added to the scope of work at SGS targeting a minimum 40% carbon grade product with carbon flotation optimisation work continuing contemporaneously. Testing of the product for use in making rubber by substitution for carbon black has been successfully completed and a further test programme to produce tyre industry normative data has been commissioned.

Process design

The process plant design by Tetra Tech is focussed on employing the results of the SGS laboratory

test work to initially design the comminution, leaching circuit and full process design criteria for the Stage 1 plant.

Carbon

Test work on the extraction of a carbon concentrate and on its use as a substitute for carbon black has been included within the scope of the Stage 1 feasibility study. Flotation tests show that the necessary >40% concentrate can be made with good overall carbon recovery. Test work on the resulting rubber performance shows that partial substitution of this concentrate for carbon black in the production of rubber for tyres can be made without loss of performance. A further programme aimed at facilitating marketing is planned. Test work on an alternative use for the carbon-rich tailings for use in the smelting of ferro-silicon is ongoing.

Conclusion

The results of the feasibility study for Stage 1 so far support or exceed the results indicated in the Company's 2018 Competent Person's Report which indicated a project (combined Stage 1 and Stage 2) NPV of some US\$2 billion.

The Company expects the publication of the Stage 1 feasibility study in the fourth quarter this year to significantly raise awareness of the emergence of this transformational addition to the global vanadium market.

Discussions with various potential investors and debt funders have already been initiated but the publication of the study will be the trigger for the finalisation of these plans.

Consolidated Statement of Profit or Loss and Other Comprehensive Income for the year ended 31 December 2022

	Note	2022 \$000	2021 \$000
Revenue from customers (pricing at shipment)	4	6,773	4,709
<i>Other revenue (adjustments to price after delivery and fair value changes)</i>	4	(502)	22
Total revenue	4	6,271	4,731
Cost of sales	5	(7,516)	(4,893)
Gross loss		(1,245)	(162)
Other income	6	77	28
Administrative expenses	7	(2,545)	(2,471)
Distribution expenses		(265)	(94)
Other expenses	8	(426)	(11)
Loss from operating activities		(4,404)	(2,710)
Net finance income / (costs)	10	118	(117)
Loss before income tax		(4,286)	(2,827)
Income tax	11	-	-
Loss for the period		(4,286)	(2,827)
Other comprehensive loss			
<i>Items that may be reclassified subsequently to profit or loss</i>			
Exchange differences arising on translation of foreign operations		(541)	(158)
Total comprehensive loss for the period		(4,827)	(2,985)
Loss per share (basic and diluted) (US\$)	20	(0.011)	(0.008)

Consolidated Statement of Financial Position as at 31 December 2022	Note	31 December 2022 \$000	31 December 2021 \$000
ASSETS			
Non-current assets			
Property, plant and equipment	12	5,434	4,863
Exploration and evaluation assets	13	4,208	1,434
Intangible assets	14	19	21
Prepayments	18	1,273	930
Total non-current assets		10,934	7,248
Current assets			
Inventories	16	1,628	2,100
Trade and other receivables	17	1,151	116
Prepayments	18	911	670
Cash and cash equivalents	19	4,331	2,810
Total current assets		8,021	5,696
Total assets		18,955	12,944
EQUITY AND LIABILITIES			
Equity			
Share capital	20	50,827	41,252
Convertible loan notes	20	4,019	4,019
Additional paid-in capital		397	397
Share-based payment reserve	20	5	-
Foreign currency translation reserve		(4,161)	(3,620)
Accumulated losses		(35,674)	(31,388)
Total equity		15,413	10,660
Non-current liabilities			
Loans and borrowings	21	-	901
Provisions	22	33	42
Total non-current liabilities		33	943
Current liabilities			
Loans and borrowings	21	1,108	489
Trade and other payables	23	2,383	828
Interest payable		18	24
Total current liabilities		3,509	1,341
Total liabilities		3,542	2,284
Total equity and liabilities		18,955	12,944

These consolidated financial statements were approved by the Board of Directors on 27 April 2023 and were signed on its behalf by:

William Callewaert

Director

The notes form part of these consolidated financial statements.

Consolidated Statement of Changes in Equity for the year ended 31 December 2022

	Share capital \$000	Convertible loan notes \$000	Additional paid in capital \$000	Share-based payment reserve \$000	Foreign currency translation reserve \$000	Accumulated losses \$000	Total \$000
Balance at 1 January 2021	35,606	-	397	-	(3,462)	(28,561)	3,980
Loss for the year	-	-	-	-	-	(2,827)	(2,827)
Other comprehensive expenses							
Exchange differences arising on translation of foreign operations	-	-	-	-	(158)	-	(158)
Total comprehensive loss for the year	-	-	-	-	(158)	(2,827)	(2,985)
Transactions with owners, recorded directly in equity							
Shares issued, net of issue costs	5,646	-	-	-	-	-	5,646
Convertible loan notes	-	4,019	-	-	-	-	4,019
Balance at 31 December 2021	41,252	4,019	397	-	(3,620)	(31,388)	10,660
Balance at 1 January 2022	41,252	4,019	397	-	(3,620)	(31,388)	10,660
Loss for the year	-	-	-	-	-	(4,286)	(4,286)
Other comprehensive expenses							
Exchange differences arising on translation of foreign operations	-	-	-	-	(541)	-	(541)
Total comprehensive loss for the year	-	-	-	-	(541)	(4,286)	(4,827)
Transactions with owners, recorded directly in equity							
Shares issued, net of issue costs (Note 20)	9,575	-	-	-	-	-	9,575
Other transactions recognised directly in equity	-	-	-	5	-	-	5
Balance at 31 December 2022	50,827	4,019	397	5	(4,161)	(35,674)	15,413

Consolidated Statement of Cash Flows for the year ended 31 December 2022

		2022 \$000	2021 \$000
Cash flows from operating activities			
Loss for the year	Note	(4,286)	(2,827)
<i>Adjustments for:</i>			
Depreciation and amortisation	5, 7	505	455
Write-off of property, plant and equipment		54	(84)
Write-down of inventory to net realisable value	8	160	-
Write-off of VAT non-refundable	7	-	499
Share-based payment expense	20	5	-
Net finance (gain) / loss	10	(118)	117
Cash used in operating activities before changes in working capital		(3,680)	(1,840)
Change in inventories		312	(1,209)
Change in trade and other receivables		(1,035)	(397)
Change in prepayments		(584)	(628)
Change in trade and other payables		1,555	(846)
Change in receivables/payables at FVTPL		-	(59)
Net cash used in operating activities		(3,432)	(4,979)
Cash flows from investing activities			
Acquisition of property, plant and equipment	12	(1,466)	(2,211)
Acquisition of exploration and evaluation assets	13	(2,871)	(333)
Acquisition of intangible assets	14	(1)	(1)
Proceeds on fixed asset disposal	6	36	(1)
Net cash used in investing activities		(4,302)	(2,545)
Cash flows from financing activities			
Proceeds from issue of share capital	20	10,000	5,900
Transaction costs on share subscriptions		(425)	(254)
Proceeds from issuance of convertible loan notes		-	4,019
Repayment / proceeds from borrowings	21	(300)	476
Interest paid	21	(82)	(80)
Net cash from financing activities		9,193	10,061
Net increase in cash and cash equivalents		1,459	2,537
Cash and cash equivalents at the beginning of year	19	2,810	707
Effect of movements in exchange rates on cash and cash equivalents		62	(434)
Cash and cash equivalents at the end of the year		4,331	2,810

Notes to the consolidated financial statements for the year ended 31 December 2022

1 Basis of preparation

The consolidated financial statements for the year ended 31 December 2022 comprise the Company and the following subsidiaries:

<u>Company</u>	<u>Location</u>	<u>Company's share in share capital</u>	<u>Primary activities</u>
Energy Metals Limited	UK	100%	Dormant
Vanadium Products LLC	Kazakhstan	100%	Performs services for the Group
Firma Balausa LLC	Kazakhstan	100%	Production and sale of vanadium and associated by-products
Balausa Processing Company LLC	Kazakhstan	100%	Development of processing facilities

(a) Statement of compliance

These financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS").

(b) Basis of measurement

The consolidated financial statements are prepared on the historical cost basis except as otherwise noted below.

(c) Functional and presentation currency

The national currency of Kazakhstan is the Kazakhstan Tenge ("KZT") which is also the functional currency of the Group's operating subsidiaries. The functional currency of the Company is US Dollars ("US\$"). The presentation currency of the consolidated financial statements is US Dollars.

(d) Going concern

The consolidated financial statements are prepared in accordance with IFRS on a going concern basis.

The Directors have reviewed the Group's cash flow forecasts for a period of at least 12 months from the date of approval of the financial statements, together with sensitivities and mitigating actions. In addition, the Directors have given specific consideration to the continued risks and uncertainties associated with the geopolitical situation with respect to Russia and Ukraine.

The Group now has the facilities and capacity in place to operate profitably and although the amount of those profits available to fund the Stage 1 feasibility study and investment programme may vary with metal prices and other factors, the Directors are confident that the Company has sufficient resources to continue as a going concern for at least the next 12 months.

2 Use of estimates and judgements

Preparing the financial statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

Carrying value of processing operations

The Directors have tested the processing operations' property, plant and equipment ("PP&E") for impairment (Note 12) at 31 December 2022. In doing so, net present value cash flow forecasts were prepared using the value in use method which required key estimates including vanadium pentoxide, ferro-molybdenum and ferro-nickel prices, production including the impact of ongoing PP&E maintenance costs and an appropriate discount rate. Key estimates included:

- Production volumes of 67 tonnes per month of vanadium pentoxide (as ammonium metavanadate ("AMV")), 8 tonnes of molybdenum (as ferro-molybdenum) and 18 tonnes of nickel (as nickel concentrate / ferro-nickel).
- Average prices of vanadium pentoxide of US\$9.19/lb, ferro-molybdenum of US\$43.95/kg and nickel of US\$25.60/kg in 2022 and thereafter, reflecting management estimates having consideration of market commentary less a discount, and used by the Company as a long-term assumption for other planning purposes.
- Discount rate of 10% post tax in real terms.

Based on the key assumptions set out above, the recoverable amount of PP&E (US\$ 15.9m) exceeds its carrying amount (US\$ 5.4m) by US\$ 10.5m and therefore PP&E were not impaired.

Sensitivity analysis

Any impairment is dependent on judgement used in determining the most appropriate basis for the assumptions and estimates made by management, particularly in relation to the key assumptions described above. Sensitivity analysis to potential changes in key assumptions has, therefore, been provided below.

The impact on the impairment calculation of applying different assumptions to product sales prices, production volumes and post-tax discount rates, all other inputs remaining equal, would be as follows:

	Decrease in headroom
	US\$'000
	(7,529)
Impact if product sales prices reduced by 10%:	
	(6,992)
Impact if production volumes decreased by 10%:	

Impact if post-tax discount rate increased by 2 percentage points:	(2,077)
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Inventories (Note 16)

The Group holds material inventories which are assessed for impairment at each reporting date. The assessment of net realisable value requires consideration of future cost to process and sell and spot market prices at year end less applicable discounts. The estimates are based on market data and historical trends.

Exploration and evaluation assets (Note 13)

The Group holds material exploration and evaluation assets and judgement is applied in determining whether impairment indicators exist under the Group's accounting policy. In determining that no impairment indicator exists management have considered the Competent Person's Report on the asset, the strategic plans for exploration and future development and the status of the Subsoil Use Agreement. Judgement was required in determining that the application for deferral of obligations under the licence (Note 25) will be granted and management anticipate such approvals being provided given their understanding of the Kazakh market and plans for the asset.

3 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements and have been applied consistently by Group entities, except for the implementation of new standards and interpretations.

(a) Basis of consolidation

(i) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it 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. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The accounting policies of subsidiaries have been changed when necessary to align them with the policies adopted by the Group.

(ii) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currency

(i) Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated to the functional currency at the exchange rate at that date.

Non-monetary items in a foreign currency that are measured based on historical cost are translated using the exchange rate at the date of the transaction.

Foreign currency differences arising in translation are recognised in profit or loss.

(ii) Presentation currency

The assets and liabilities of foreign operations are translated to US\$ at the exchange rates prevailing at the reporting date. The income and expenses of foreign operations are translated to US\$ at the average exchange rate for the period, which approximates the exchange rates at the dates of the transactions. Where specific material transactions occur, such as impairments or reversals of impairments, the daily exchange rate is applied when the impact is material.

Foreign currency differences are recognised in other comprehensive income and are presented within the foreign currency translation reserve in equity.

Foreign currency differences arising on intercompany loans, where the loans are not planned to be repaid within the foreseeable future and form part of a net investment, are recorded within other comprehensive income and are presented within the foreign currency translation reserve in equity.

(c) Financial instruments

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.

(i) Financial assets

Financial assets are classified as either financial assets at amortised cost, at fair value through other comprehensive income (“FVTOCI”) or at FVTPL depending upon the business model for managing the financial assets and the nature of the contractual cash flow characteristics of the financial asset.

A loss allowance for expected credit losses is determined for all financial assets, other than those at FVTPL, at the end of each reporting period. The Group applies a simplified approach to measure the credit loss allowance for trade receivables using the lifetime expected credit loss provision. The lifetime expected credit loss is evaluated for each trade receivable taking into account payment history, payments made subsequent to year end and prior to reporting, past default experience and the impact of any other relevant and current observable data. The Group applies a general approach on all other receivables classified as financial assets. The general approach recognises lifetime expected credit losses when there has been a significant increase in credit risk since initial recognition.

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. The Group derecognises financial liabilities when the Group’s obligations are discharged, cancelled or have expired.

(ii) Customer contracts

Under some of its customer sale arrangements, the Group receives a provisional payment upon satisfaction of its performance obligations based on the spot price at that date, which occurs prior to the final price determination, with the Group then subsequently receiving or paying the difference between the final price and quantity and the provisional payment. As a result of the pricing structure, the instrument is classified at FVTPL and measured at fair value with changes in fair value recorded as other revenue.

(iii) Other receivables

Other receivables are accounted for at amortised cost. Other receivables do not carry any interest and are stated at their nominal value as reduced by appropriate expected credit loss allowances for estimated recoverable amounts as the interest that would be recognised from discounting future cash payments over the short payment period is not considered to be material.

(iv) Cash and cash equivalents

Cash and cash equivalents comprise cash balances in banks, call deposits and highly liquid investments with maturities of three months or less from the acquisition date that are subject to insignificant risk of changes in their fair value, and petty cash.

(v) Financial liabilities

The Group has the following non-derivative financial liabilities: borrowings and trade and other payables. Such financial liabilities are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition these financial liabilities are measured at amortised cost using the effective interest method.

(vi) Long-term borrowings

After initial recognition, interest-bearing borrowings are subsequently measured at amortised cost using the effective interest rate method. Gains and losses are recognised in profit or loss. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the effective interest rate. The effective interest rate amortisation is included as finance costs in the statement of profit or loss.

(vii) Share capital

Ordinary shares

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of ordinary shares are recognised as a deduction from equity, net of any tax effects.

(d) Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost less accumulated depreciation and impairment losses. Land is measured at cost.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the asset into a working condition for its intended use, the costs of dismantling and removing the items and restoring the site on which they are located.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

The gain or loss on disposal of an item of property, plant and equipment is determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and is recognised net within other income/other expenses in profit or loss.

(ii) Subsequent costs

The cost of replacing part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

(iii) Depreciation

Depreciation is based on the cost of an asset less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately.

Depreciation is recognised in profit or loss on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. Leased assets are depreciated over the shorter of the lease term and their useful lives unless it is reasonably certain that the Group will obtain ownership by the end of the lease term. Land is not depreciated.

The estimated useful lives for the current and prior periods are as follows:

- Buildings 10-50 years;
- Plant and equipment 4-20 years;
- Vehicles 4-7 years;
- Computers 3-6 years; and
- Other 3-10 years.

Depreciation methods, useful lives and residual values are reviewed at each financial year end and adjusted prospectively if appropriate.

Assets under construction are not depreciated and begin being depreciated once they are ready and available for use in the manner intended by management.

(e) Exploration and evaluation assets

Exploration and evaluation expenditure for each area of interest once the legal right to explore has been acquired, other than that acquired through a purchase transaction, is carried forward as an asset provided that one of the following conditions is met.

- Such costs are expected to be recouped through successful exploration and development of the area of interest or, alternatively, by its sale; or
- Exploration and evaluation activities in the area of interest have not yet reached a stage which permits a reasonable assessment of the existence or otherwise of economically recoverable reserves, and active and significant operations in relation to the area are continuing.

Exploration and evaluation costs are capitalised as incurred. Exploration and evaluation assets are classified as tangible or intangible based on their nature. Exploration expenditure which fails to meet at least one of the conditions outlined above is written off. Administrative and general expenses relating to exploration and evaluation activities are expensed as incurred.

The exploration and evaluation assets shall no longer be classified as such when the technical feasibility and commercial viability of extracting a mineral resource are demonstrable. This includes consideration of a variety of factors such as whether the requisite permits have been awarded, whether funding required for development is sufficiently certain of being secured, whether an appropriate mining method and mine development plan is established and the results of exploration data including internal and external assessments.

Exploration and evaluation assets will be reclassified either as tangible or intangible development assets and amortised on a unit-of-production method based on proved reserves.

Exploration and evaluation assets are assessed for impairment when facts and circumstances suggest that the carrying amount of exploration and evaluation assets may exceed their recoverable amount, which is the case when: the period of exploration license has expired and it is not expected to be renewed; substantial expenditure on further exploration is not planned; exploration has not led to the discovery of commercially viable reserves; or indications exist that exploration and evaluation assets will not be recovered in full from successful development or by sale.

Impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount.

(f) Intangible assets

(i) Intangible assets with finite useful lives

Intangible assets that are acquired by the Group, which have finite useful lives, are measured at cost less accumulated amortisation and accumulated impairment losses.

(ii) Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in profit or loss as incurred.

(iii) Amortisation

Amortisation is calculated over the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use since this most closely reflects the expected pattern of consumption of future economic benefits embodied in the asset.

The estimated useful lives for the current and comparative periods are as follows:

- Patents 10-20 years; and
- Mineral rights 20 years.

Amortisation methods, useful lives and residual values are reviewed at each financial year end and adjusted if appropriate.

(g) Leased assets

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments: fixed payments (including in-substance fixed payments), less any lease incentives receivable and variable payments based on index or rate amounts expected to be payable by the Group under residual value guarantees, payments of penalties for terminating the lease, if the lease term reflects the Group exercising that option. Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability. The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be readily determined, which is generally the case for leases in the Group, the lessee's incremental borrowing rate is used, being the rate that the individual lessee would have to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions.

(h) Inventories

Inventories are measured at the lower of cost and net realisable value. The cost of inventories is based on first-in first-out method, and includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses.

(i) Impairment

(i) Non-financial assets

The carrying amounts of the Group's non-financial assets, other than inventories and deferred tax assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. An impairment loss is recognised if the carrying amount of an asset or its related cash-generating unit ("CGU") exceeds its estimated recoverable amount.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell (otherwise referred to as fair value less cost to develop in the industry). Fair value less costs to sell is determined by discounting the post-tax cash flows expected to be generated by the cash-generating unit, net of associated selling costs, and takes into account assumptions market participants would use in estimating fair value. In assessing the value in use, the estimated future cash flows are adjusted for the risks specific to the asset/cash-generating unit and are discounted to their present value that reflects the current market indicators. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU. For the purpose of impairment testing, assets that cannot be tested individually are

grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs.

The Group's corporate assets do not generate separate cash inflows. If there is an indication that a corporate asset may be impaired, then the recoverable amount is determined for the cash generating unit to which the corporate asset belongs.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in profit or loss.

Impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(j) Employee benefits

(i) Defined contribution plans

The Group does not incur any expenses in relation to the provision of pensions or other post-employment benefits to its employees. In accordance with Kazakhstan state pension social insurance regulations, the Group withholds pension contributions from Kazakhstan based employee salaries and transfers them into State operated pension funds. Once the contributions have been paid, the Group has no further pension obligations. Upon retirement of employees, all pension payments are administered by the pension funds directly.

(ii) Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

(k) Provisions

(i) Recognition and measurement

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as a finance cost.

(ii) Site restoration

In accordance with the Group's environmental policy and applicable legal requirements, a provision for site restoration is recognised when the land is disturbed as a result of pit development and plant decommissioning with a corresponding increase in exploration and evaluation costs or property, plant and equipment. Subsequent changes in the provision due to estimates are recorded as a change in the relevant asset. The provision is discounted at a risk-free rate with the costs incorporating risks relevant to the site restoration and an unwinding charge is recognised within finance costs for the unwinding of the discount.

(l) Revenue

(i) Goods sold

Revenue from customers comprises the sale of vanadium and molybdenum products with other revenues from gravel and waste rock being non-significant. Revenue from vanadium products is recognised at a point in time when the customer has a legally binding obligation to settle under the terms of the contract and when the performance obligations have been satisfied, which is once control of the goods has transferred to the buyer at a designated delivery point at which point possession, title and risk transfers.

The Group commonly receives a provisional payment at the date control passes with reference to spot prices at that date. The final consideration is subject to quantity / quality adjustments and final pricing based on market prices determined after the product reaches its port of destination. The quantity / quality adjustments represent a form of variable consideration and revenue is constrained to record amounts for which it is highly probable no reversal will be required. However, given the short period to delivery post year end the final quantity / quality adjustments are known and revenue for the period is adjusted to reflect the final quantity / quality occurring subsequent to year end if material.

Changes in final consideration due to market prices is not determined to qualify as variable consideration within the scope of the IFRS 15 "Revenue from Customers". Changes in fair value as a result of market prices are recorded within revenue as other revenue.

(m) Finance costs

Finance costs comprise interest expense on borrowings, unwinding of the discount on provisions for historical costs and site restoration and foreign currency losses. Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognised in profit or loss using the effective interest method.

Foreign currency gains and losses are reported on a net basis as either finance income or finance cost depending on whether foreign currency movements result in a net gain or loss, this includes exchange gains and losses that arise on trade and other receivables and trade and other payables in foreign currency.

(n) Income tax

Income tax expense comprises current and deferred tax. Current tax and deferred tax are recognised in profit or loss except to the extent that they relate to items recognised directly in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years. Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss. Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax assets and liabilities, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised for unused tax losses, tax credits and deductible temporary differences, to the extent that it is probable that future taxable profits will be available against which they can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(o) Earnings per share

The Company presents basic and diluted earnings per share (“EPS”) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held. Diluted EPS is determined by adjusting the profit or loss attributable to ordinary shareholders and the weighted average number of ordinary shares outstanding, adjusted for own shares held, for the effects of all dilutive potential ordinary shares.

(p) Segment reporting

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses related to transactions with other components of the same Group); whose operating results are regularly reviewed by the chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance, and for which discrete financial information is available.

(q) Share-based payments

(i) Share-based payment transactions

The Company grants share options to certain Directors and Group employees (“Equity-Settled Transactions”) under the Company’s share option plan. The Directors determine the specific grant terms within the limits set by the Company’s share option plan.

(ii) Equity-settled transactions

The costs of Equity-Settled Transactions are measured by reference to the fair value at the grant date and are recognised, together with a corresponding increase in equity, over the period in which the performance and/or service conditions are fulfilled, ending on the date on which the relevant persons become fully entitled to the award (the “Vesting Date”). The cumulative expense recognised for Equity-Settled Transactions at each reporting date until the Vesting Date reflects the Company’s best estimate of the number of equity instruments that will ultimately vest. The profit or loss charge or credit for a period represents the movement in cumulative expense recognised as at the beginning and end of that period and the corresponding amount is represented in share-based payments reserve. No expense is recognised for awards that do not ultimately vest.

Where the terms of an equity-settled award are modified, the minimum expense recognised is the expense as if the terms had not been modified. An additional expense is recognised for any modification which increases the total fair value of the share-based payment arrangement or is otherwise beneficial to the Director or Group employee as measured at the date of modification.

Where Equity-Settled Transactions are awarded to Directors or Group employees, the fair value of the share options at the date of grant is charged to the profit and loss statement over the vesting period. Non-market performance vesting conditions are taken into account by adjusting the number of equity instruments expected to vest at each reporting date so that, ultimately, the cumulative amount

recognised over the vesting period is based on the number of the options that will eventually vest. Market performance vesting conditions are incorporated into the fair value of the equity instrument at the grant date.

Upon exercise of share options, the proceeds received are allocated to share capital together with any associated balance in the share-based payments reserve are transferred to retained earnings. The dilutive effect of outstanding options is reflected as additional dilution in the computation of diluted earnings per share.

The Company utilises the Black-Scholes option pricing model to estimate the fair value of share options granted to Directors and Group employees. The use of this model requires management to make various estimates and assumptions that impact the value assigned to the share options including the forecast future volatility of the share price, the risk-free interest rate, dividend yield, the expected life of the share options and the expected number of shares which will vest. See Note 20 for further details.

(r) New and amended standards adopted

No new standards and interpretations issued by the IASB have had a significant impact on the consolidated financial statements.

4 Revenue

	2022	2021
	\$000	\$000
Sales of vanadium products	5,163	4,078
Sales of calcium molybdate	-	392
Sales of ferro-molybdenum	1,509	161
Sales of gravel and waste rock	86	61
Service revenue	15	17
Total revenue from customers under IFRS 15	6,773	4,709
Other revenue - change in fair value of customer contracts	(502)	22
Total revenue	6,271	4,731

Vanadium and molybdenum products

Under certain sales contracts the single performance obligation is the delivery of AMV to the designated delivery point at which point possession, title and risk on the product transfers to the buyer. The buyer makes an initial provisional payment based on volumes and quantities assessed by the Company and market spot prices of vanadium pentoxide for AMV at the date of shipment. The final payment is received once the product has reached its final destination with adjustments for quality / quantity and pricing. The final pricing is based on the historical average market prices during a quotation period based on the date the product reaches the port of destination and an adjusting payment or receipt will be made to the revenue initially received. Where the final payment for a shipment made prior to the end of an accounting period has not been determined before the end of that period, the revenue is recognised based on the spot price that prevails at the end of the accounting period.

Other revenue related to the change in the fair value of amounts receivable and payable under the sales contracts between the date of initial recognition and the period end resulting from market prices are recorded as other revenue.

5 Cost of sales

	2022	2021
	\$000	\$000
Materials	5,863	3,709
Wages, salaries and related taxes	937	656
Depreciation	406	425
Electricity	111	99
Other	199	4
	7,516	4,893

6 Other income

	2022	2021
	\$000	\$000
Currency conversion gain	41	-
Other (Sales of equipment)	36	28
	77	28

7 Administrative expenses

	2022	2021
	\$000	\$000
Wages, salaries and related taxes	1,619	1,035
Professional services	263	305
Write-off of non-refundable VAT	-	499
Taxes other than income tax	15	17
Listing and reorganisation expenses	162	119
Audit	111	151
Materials	37	75
Rent	53	37
Depreciation and amortisation	99	30
Insurance	44	22
Bank fees	23	20
Travel expenses	16	18
Security	-	14
Research	-	11
Communication and information services	12	7
Other	91	111
	2,545	2,471

8 Other expenses

	2022	2021
	\$000	\$000
Currency conversion loss	204	-
Write-down of inventory to net realisable value	160	-
Write-down of obsolete assets	54	11
Share-based payment expense	5	-
Other	3	-
	426	11

9 Personnel costs

	2022	2021
	\$000	\$000
Wages, salaries and related taxes	2,569	1,711
	2,569	1,711

During 2022 personnel costs of US\$937,000 (2021: US\$630,000) have been charged to cost of sales, US\$1,619,000 (2021: US\$1,035,000) to administrative expenses and US\$43,000 (2021: US\$46,000) were charged to cost of inventories which were not yet sold as at the year end.

10 Finance costs

	2022	2021
	\$000	\$000
Net foreign exchange (gain) / costs	(195)	35
Interest expense on financial liabilities (bonds)	77	82
Net finance (income) / costs	(118)	117

11 Income tax

The Group's applicable tax rates in 2022 are an income tax rate of 20% for Kazakhstan registered subsidiaries (2021: 20%) and 0% (2021: 0%) for Guernsey registered companies. The Kazakh tax rate has been applied below as this is most reflective of the Group's trading operations and tax profile.

During the years ended 31 December 2022 and 2021 the Group incurred tax losses and, therefore, did not recognise any current income tax expense.

Unrecognised deferred tax assets are described in Note 15.

Reconciliation of effective tax rate:

	2022		2021	
	\$000	%	\$000	%
Loss before tax (Group)	(4,286)	100	(2,827)	100
Income tax at the applicable tax rate	(857)	20	(565)	20
Effect of unrecognised deferred tax assets / (utilisation of previously unrecognised losses)	923	(22)	581	(13)
Net non-deductible expenses/non-taxable income or loss	(66)	2	(16)	(7)
	-	-	-	-

12 Property, plant and equipment

	Land and buildings \$000	Plant and equipment \$000	Vehicles \$000	Computers \$000	Other \$000	Construction in progress \$000	Total \$000
Cost							
Balance at 1 January 2021	1,529	1,853	541	36	99	1,560	5,618
Additions	8	154	14	4	14	2,523	2,717
Transfers	569	740	7	-	-	(1,316)	-
Disposals	-	(51)	(39)	-	(8)	(80)	(178)
Foreign currency translation difference	(46)	(57)	(14)	(1)	(3)	(55)	(176)
Balance at 31 December 2021	2,060	2,639	509	39	102	2,632	7,981
Balance at 1 January 2022	2,060	2,639	509	39	102	2,632	7,981
Additions	37	188	-	10	89	1,142	1,466
Transfers	23	83	-	-	-	(106)	-
Disposals	(23)	(9)	(17)	(4)	(10)	(41)	(104)
Foreign currency translation difference	(138)	(178)	(34)	(2)	(7)	(179)	(538)
Balance at 31 December 2022	1,959	2,723	458	43	174	3,448	8,805
Depreciation							
Balance at 1 January 2021	629	1,779	340	22	48	-	2,818
Depreciation for the period	76	343	35	7	11	-	472
Disposals	-	(45)	(39)	-	(10)	-	(94)
Foreign currency translation difference	(17)	(49)	(9)	(1)	(2)	-	(78)
Balance at 31 December 2021	688	2,028	327	28	47	-	3,118
Balance at 1 January 2022	688	2,028	327	28	47	-	3,118
Depreciation for the period	66	374	34	5	25	-	504
Disposals	-	(9)	(17)	(3)	(11)	-	(40)
Foreign currency translation difference	(46)	(137)	(22)	(2)	(4)	-	(211)
Balance at 31 December 2022	708	2,256	322	28	57	-	3,371
Carrying amounts							
At 1 January 2021	900	74	201	14	51	1,560	2,800
At 31 December 2021	1,372	611	182	11	55	2,632	4,863
At 31 December 2022	1,251	467	136	15	117	3,448	5,434

During 2022 a depreciation expense of US\$406,000 (2021: US\$424,000) has been charged to cost of sales, excluding cost of finished goods that were not sold at year end, US\$98,000 (2021: US\$30,000) to administrative expenses, and US\$4,000 has been charged to cost of finished goods that were not sold at the year end (2021: US\$1,000). Construction in progress relates to upgrades to the processing plant associated with the expansion of the facility.

13 Exploration and evaluation assets

The Group's exploration and evaluation assets ("E&EA") relate to the Balasausqandiq deposit. During the year, the Group capitalised the cost of geological and geotechnical drilling work, technical design, sample assaying and project management costs, all relating to the Company's Stage 1 feasibility study. As at 31 December 2022 the carrying value of exploration and evaluation assets was US\$4.2m (2021: US\$1.43m).

	2022	2021
	\$000	\$000
Balance at 1 January	1,434	813
Additions (Stage 1 feasibility study)	2,871	626
Change in estimate (asset restoration obligation)	-	(14)
Foreign currency translation difference	(97)	9
Balance at 31 December	4,208	1,434

14 Intangible assets

	Mineral rights \$000	Patents \$000	Computer software \$000	Total \$000
Cost				
Balance at 1 January 2021	91	32	3	126
Additions	-	1	-	1
Foreign currency translation difference	(3)	-	-	(3)
Balance at 31 December 2021	88	33	3	124
Balance at 1 January 2022	88	33	3	124
Additions	-	1	-	1
Foreign currency translation difference	(5)	(2)	-	(7)
Balance at 31 December 2022	83	32	3	118
Amortisation				
Balance at 1 January 2021	91	11	3	105
Amortisation for the year	-	1	-	1
Foreign currency translation difference	(3)	-	-	(3)

Balance at 31 December 2021	88	12	3	103
Balance at 1 January 2022	88	12	3	103
Amortisation for the year	-	1	-	1
Foreign currency translation difference	(5)	-	-	(5)
Balance at 31 December 2022	83	13	3	99

Carrying amounts

At 1 January 2021	-	21	-	21
At 31 December 2021	-	21	-	21
At 31 December 2022	-	19	-	19

During 2022 and 2021 the amortisation of intangible assets was charged to administrative expenses.

15 Deferred tax assets and liabilities**Unrecognised deferred tax assets**

	2022	2021
	\$000	\$000
Temporary deductible differences	292	119
Tax losses carried forward	14,470	11,590
Unrecognised tax deferred tax assets	(14,762)	(11,709)
	-	-

Deferred tax assets have not been recognised in respect of these items given the taxable loss in the year and because the Kazakhstan processing operations benefit from a tax incentive agreement which reduces the tax payable to nil and it is, therefore, uncertain that future taxable profit will be available against which the Group can utilise the benefits therefrom. The tax incentive agreement is effective for ten years starting from 2018.

The increase in carried forward tax losses comprises the tax loss for the period and the effect of resubmissions of previous tax filings which contributed to an increase in tax losses.

Temporary deductible differences mostly relate to property, plant and equipment. Unutilised tax losses expire after 10 years from the year of origination.

Expiry dates of unrecognised deferred tax assets in respect of tax losses carried forward at 31 December 2022 are presented below:

<u>Expiry year</u>	<u>\$000</u>
2023	928
2024	474
2025	228
2026	801
2027	480
2028	514
2029	2,148
2030	3,385
2031	1,564
2032	3,948
	<u><u>14,470</u></u>

Unrecognised deferred tax assets above are calculated based on the Kazakh tax rate of 20%.

16 Inventories

	<u>2022</u>	<u>2021</u>
	<u>\$000</u>	<u>\$000</u>
Raw materials and consumables	1,379	1,805
Finished goods	216	287
Work in progress	33	7
Goods in transit	-	1
	<u><u>1,628</u></u>	<u><u>2,100</u></u>

During 2022 inventories expensed to profit and loss amounted to US\$5.9m (2021: US\$3.7m).

17 Trade and other receivables

Current	2022	2021
	\$000	\$000
Trade receivables from third parties	65	62
Due from employees	50	22
VAT receivable	1,062	58
Other receivables	10	9
	<u>1,187</u>	<u>151</u>
Expected credit loss provision for receivables	(36)	(35)
	<u>1,151</u>	<u>116</u>

The expected credit loss provision for receivables relates to credit impaired receivables which are in default and the Group considers the probability of collection to be remote given the age of the receivable and default status.

18 Prepayments

	2022	2021
	\$000	\$000
Non-current		
Prepayment for E&EA	697	531
Other prepayments	576	399
	<u>1,273</u>	<u>930</u>
Current		
Prepayments for goods and services	911	670
	<u>911</u>	<u>670</u>

The prepayments for E&EA are related mainly to the Stage 1 feasibility study.

19 Cash and cash equivalents

	2022	2021
	\$000	\$000
Cash at current bank accounts	1,010	2,795
Cash at bank deposits	3,321	14
Petty cash	-	1
Cash and cash equivalents	<u>4,331</u>	<u>2,810</u>

20 Equity

(a) Share capital

<i>Number of shares unless otherwise stated</i>	Ordinary shares	
	<u>31 December 2022</u>	<u>31 December 2021</u>
Par value	-	-
Outstanding at beginning of year	377,676,799	330,589,052
Shares issued	72,025,351	47,087,747
Outstanding at end of year	<u>449,702,150</u>	<u>377,676,799</u>

Ordinary shares

All shares rank equally. The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

During 2022, the Company undertook an equity fundraise and issued 72,025,351 ordinary shares of no-par value by way of a placing and direct subscriptions for cash at a price of 12 pence per share, raising a total of £8,643,042 (US\$10,000,000).

Convertible loan notes

Convertible loan notes are considered as equity as the conditions that are set out in the Convertible Loan Note agreement provide for conversion into equity in all circumstances except in certain conditions that the Directors do not consider probable. In particular, the conditions required to be fulfilled before conversion takes place include an obligation on the Company to receive certain consents from the regulatory authorities and avoidance of the possibility of triggering a requirement for the issue of a prospectus.

During the year, the Convertible Loan Note agreement between the Company and Vision Blue was amended as part of the equity fundraise note above. The amendments have not had an impact on the Company's current or future financial position and were administrative in nature.

Reserves

Share capital: Value of shares issued less costs of issuance.

Convertible loan notes: Further investment rights at issue price.

Additional paid in capital: Amounts due to shareholders which were waived.

Share-based payment: Share options issued during the year.

Foreign currency translation reserve: Foreign currency differences on retranslation of results from functional to presentational currency and foreign exchange movements on intercompany balances considered to represent net investments which are considered as permanent equity.

Accumulated losses: Cumulative net losses.

(b) Share Options

Summary

All share options are issued under the Company's share option plan that was implemented during the year. The share option plan is a scheme that entitles key management personnel to purchase shares in the Company at the market price of the shares at the date of grant.

The following table summarise the activities and status of the Company's share option plan during the year and at the year end.

	2022 share options	2022 Weighted average exercise price (US\$)
Outstanding at the beginning of the year	-	-
Granted during the year	500,000	0.0157
Exercised during the year	-	-
Expired / cancelled during the year	-	-
Outstanding at the year end	500,000	0.0157

Share options granted during the year and in force at the year end were as follows:

Grant date	Number of options	Exercise date	Exercise price per share (US\$)	Expiry date	Remaining contractual life (years)
29 June 2022	250,000	29 June 2025	0.0162	29 June 2027	4.5
22 September 2022	250,000	22 September 2025	0.0151	22 September 2027	4.8
	500,000				

Share-based payment reserve

The following table summarises the changes in the Company's share-based payment reserve during the year:

	Share-based payment reserve (US\$)
At 1 January 2022	-

Exercise of share options	-
Issue of options	5,000
At 31 December 2022	5,000

Share-based payment expense

During the year, the Company recognised US\$5,000 (2021: nil) of share-based payment expense. The fair value of the share-based compensation was estimated on the dates of grant using the Black-Scholes option pricing model with the following assumptions:

Grant date	29 June 2022	22 September 2022
Share price at grant date (US\$)	0.0162	0.0151
Exercise price (US\$)	0.0162	0.0151
Expected volatility*	68%	72.85%
Expected life (years)	4	4
Expected dividend yield (US\$)	-	-
Risk-free interest rate**	1.78%	2.25%
Fair value per option (US\$)	0.00695	0.00769

*expected volatility is derived from the Company's historical share price volatility

**the risk-free rate of return is based on UK government gilts for a term consistent with the option life

All share options granted during the year have non-market vesting conditions that were not considered in measuring fair value.

(c) Dividends

No dividends were declared for the year ended 31 December 2022 (2021: US\$ nil).

(d) Loss per share (basic and diluted)

The calculation of the basic and diluted loss per share has been based on the loss attributable to ordinary shareholders and weighted-average number of ordinary shares outstanding. There are no convertible bonds and convertible preferred stock, so basic and diluted losses are equal.

(i) Loss attributable to ordinary shareholders (basic and diluted)

	2022	2021
	\$000	\$000
Loss for the year, attributable to owners of the Company	<u>(4,286)</u>	<u>(2,827)</u>

	2022	2021
	\$000	\$000
Loss attributable to ordinary shareholders	(4,286)	(2,827)

(ii) Weighted-average number of ordinary shares (basic and diluted)

Shares	2022	2021
Issued ordinary shares at 1 January (after subdivision)	377,676,799	330,589,052
Effect of shares issued (weighted)	21,410,276	4,531,663
Weighted-average number of ordinary shares at 31 December	399,087,075	335,120,715
Loss per share of common stock attributable to the Company (basic and diluted) (US\$)	(0.011)	(0.008)

21 Loans and borrowings

In 2021 the Company issued unsecured corporate bonds with effective interest rates of 7.0%. Investors have subscribed for a total of 242 of the Company's bonds with a nominal value of US\$2,000 each but are issued at a premium to achieve the effective interest rates agreed. The bonds are unsecured, have a three-year term and bear the coupon rate of 5.8%, paid twice-yearly. The bonds have been listed on AIX with identifier FAR.0323 and ISIN number KZX000000336. The investors in certain bonds have the right to receive early repayment after a minimum period of 12 months.

	2022	2021
	\$000	\$000
Non-current liabilities		
Bonds payable	-	901
	-	901
Current liabilities		
Bonds payable (early repayment rights)	1,108	465
Interest payable	18	24
	1,126	489

Refer to Note 29 with respect to the repayment of the outstanding bonds after the year end.

Terms and conditions of outstanding bonds at 31 December 2022 were as follows:

		Effective	Nominal	Actual	Coupon	Coupon	Interest
USD	Currency	interest	amount	amount	rate	paid	
Bonds payable	USD	7.5%	506	503	5.8%	29	29
Bonds payable	USD	7.0%	586	576	5.8%	52	52
Bonds payable	USD	5.8%	20	21	5.8%	1	1

1,112	1,100	82	82
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In September 2022, the Company repaid bonds to a subscriber in the amount of US\$300,000 (2021: US\$ nil).

Non-cash transactions from financing activities are shown in the reconciliation of liabilities from financing transactions.

Loans and borrowings	2022 \$000	2021 \$000
At 1 January	1,427	936
Cash flows:		
-Interest paid	(82)	(80)
-(Repayment) / proceeds from loans and borrowings	(300)	476
Total	1,045	1,332
Non-cash flows		
- Interest accruing in period	82	95
- Bond discount/premium	-	-
At 31 December	1,127	1,427

22 Provisions

	2022 \$000	2021 \$000
Balance at 1 January	42	47
Unwinding of discount	-	-
Change in estimate	(7)	(4)
Foreign currency translation difference	(2)	(1)
Balance at 31 December	33	42
Non-current	33	42
	33	42

Site restoration

A provision was recognised in respect of the Group's obligation to rectify environmental issues at the Balasausqandiq deposit in the Kyzylorda region.

In accordance with Kazakhstan environmental legislation, any land contaminated by the Group in the Kyzylorda region must be restored before the end of 2043. The provision was estimated by considering the risks related to the amount and timing of restoration costs based on the known level of damage. Because of the long-term nature of the liability, the main uncertainty in estimating the provision is the costs that will be incurred. In particular, the Group has assumed that the site will be restored using technology and materials that are available currently. A fund to cover this liability will be collected via annual statutory contributions to the special liquidation fund at the rate of 1% of mining expenses as stipulated in the Subsoil Use Agreement. Based on the working program which forms part of the Subsoil Use Agreement the total amount is expected to reach KZT 675m or c. US\$1,838,000. The present value of restoration costs was determined by discounting the estimated restoration cost using a Kazakh risk-free rate for the respective period, and average inflation for the last 10 years of 8.8%. The estimated period for discounting was 21 years (2021: 22 years). Environmental legislation in Kazakhstan continues to evolve and it is difficult to determine

the exact standards required by the current legislation in restoring sites such as this. Generally, the standard of restoration is determined based on discussions with the Kazakh government at the time that restoration commences.

23 Trade and other payables

	2022	2021
	\$000	\$000
Trade payables	1,889	625
Debt to directors/key management (Note 28)	214	7
Debt to employees	99	68
Other taxes	171	117
Advances received	10	11
	2,383	828

24 Financial instruments and risk management

(a) Overview

The Group has exposure to the following risks from its use of financial instruments:

- credit risk;
- liquidity risk; and
- market risk.

This note presents information about the Group's exposure to each of the above risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital. Further quantitative disclosures are included throughout these consolidated financial statements.

Risk management framework

The Chief Executive has overall responsibility for the establishment and oversight of the Group's risk management framework.

The Group's risk management policies are established to identify and analyse the risks faced by the Group, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed to reflect changes in market conditions and the Group's activities. The Group aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

(b) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Group's receivables from customers.

(i) Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. The maximum exposure to credit risk at the reporting date was:

	Carrying amount	
	2022	2021
	\$000	\$000
Trade and other receivables, excluding amounts due from employees and VAT receivable	75	71
Cash and cash equivalents	4,331	2,809
	4,406	2,880

The maximum exposure to credit risk for trade and other receivables at the reporting date by geographic region was:

	Carrying amount	
	2022	2021
	\$000	\$000
Kazakhstan	75	71
	75	71

The maximum exposure to credit risk for trade and other receivables at the reporting date by type of customer was:

	Carrying amount	
	2022	2021
	\$000	\$000
<i>Trade receivables:</i>		
Wholesale customers	65	62
<i>Other receivables</i>		
Other	10	9
	75	71

The ageing of trade and other receivables at the reporting date was:

	Gross	Impairment	Net	Gross	Impairment	Net
	2022	2022	2022	2021	2021	2021
	\$000	\$000	\$000	\$000	\$000	\$000
Not past due	75	-	75	71	-	71
Past due more than 180 days	36	(36)	-	35	(35)	-
	111	(36)	75	106	(35)	71

The movement in the allowance for expected credit losses in respect of other receivables during the year was as follows:

	2022 \$000	2021 \$000
Balance at beginning of the year	35	36
Expected gain change / credit (loss)	1	(1)
Balance at end of the year	36	35

Amounts due from customers at the year end have been subsequently collected in 2023, except for credit impaired amounts. No additional expected credit loss provision has been applied.

(ii) Cash and cash equivalents

As at 31 December 2022 the Group held cash of US\$4.33m (2021: US\$2.81m), of which bank balances of US\$4.31m (2021: US\$2.80m) represent its maximum credit exposure on these assets, which excludes petty cash. 92% (2021: 99%) is held in banks with credit ratings of A+ to AA and 8% in banks with credit ratings of B to BB (2021: 1%). Credit ratings are provided by the rating agency FitchRatings.

(c) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

The following are the contractual maturities of financial liabilities. It is not expected that the cash flows included in the maturity analysis could occur significantly earlier, or at significantly different amounts.

2022

	Carrying amount \$000	Contractual cash flows \$000	On demand \$000	0-6 mths \$000	6 months - 1 year \$000	1-3 years \$000
Financial liabilities						
Trade and other payables	1,889	1,889	-	1,889	-	-
Loans and borrowings	1,126	1,126	-	1,126	-	-
	3,015	3,015	-	3,015	-	-

2021

	Carrying amount \$000	Contractual cash flows \$000	On demand \$000	0-6 mths \$000	6 months - 1 year \$000	1-3 years \$000
Financial liabilities						
Trade and other payables	601	601	9	592	-	-
Loans and borrowings	1,390	1,477	-	-	957	520
	1,991	2,078	9	592	957	520

(d) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the Group's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return.

In order to ascertain market risk the Group has analysed the impact of different levels of vanadium pentoxide prices on profitability as well as closely monitoring the market conditions for other leading international organisations operating in the vanadium industry. The sensitivity analysis shows that a price of US\$4/lb for vanadium pentoxide is the minimum price that must be achieved by the Group in order to maintain operations.

The current level of vanadium pentoxide prices is sufficient to keep the Group at a stable future profitable level.

(i) Currency risk

The Group is exposed to currency risk on sales, purchases and borrowings that are denominated in a currency other than the respective functional currency of Group entities.

In respect of monetary assets and liabilities denominated in foreign currencies, the Group ensures that its net exposure is kept to an acceptable level by buying or selling foreign currencies at spot rates when necessary to address short term imbalances.

Exposure to currency risk

The Group's exposure to foreign currency risk was as follows based on notional amounts:

2022	US\$-	GBP-	EUR-	RUB-	KZT-
	denominated	denominated	denominated	denominated	denominated
	2022	2022	2022	2022	2022
	\$000	\$000	\$000	\$000	\$000
Cash and cash equivalents	22	3 940	-	5	3,672
Trade and other payables	(654)	(111)	(108)	(55)	(1,455)
Loans and borrowings	(1,126)	-	-	-	-
Net exposure	(1,758)	3 829	(108)	(50)	2,217

2021	US\$-	GBP-	EUR-	RUB-	KZT-
	denominated	denominated	denominated	denominated	denominated
	2021	2021	2021	2021	2021
	\$000	\$000	\$000	\$000	\$000
Cash and cash equivalents	2,725	42	-	-	42
Trade and other payables	(206)	(24)	(31)	(33)	(534)
Loans and borrowings	(1,390)	-	-	-	-
Net exposure	1,129	18	(31)	(33)	(492)

The following significant exchange rates applied during the year:

in US\$	Average rate		Reporting date spot rate	
	2022	2021	2022	2021
KZT 1	0.0022	0.0023	0.0022	0.0023
GBP 1	1.2363	1.3756	1.2030	1.3855
RUB 1	0.0150	0.0136	0.0139	0.0138
EUR 1	1.0530	1.1831	1.0653	1.1907

(ii) Interest rate risk

Changes in interest rates do not significantly impact the Group's position as at 31 December 2022. Management does not have a formal policy of determining how much of the Group's exposure should be to fixed or variable rates. However, at the time of raising new loans or borrowings management uses its judgment to decide whether it believes that a fixed or variable rate would be more favourable to the Group over the expected period until maturity.

The bonds interest rates are fixed by agreement.

Changes in interest rates at the reporting date would not significantly affect profit or loss.

(iii) Other risks

IAS 1 requires the disclosure of the risks and measures to meet the risks related to external capital requirements.

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 through the optimisation of the debt and equity balance. The Group's overall strategy remains unchanged from 2021.

The capital structure of the Group consists of net debt (see Note 21) and the equity of the Group (see Note 20).

The Group is not subject to any externally imposed capital requirements.

The Group reviews the capital structure on a regular basis giving consideration to the cost of capital and the risks associated with each class of capital.

Debt is defined as long- and short-term borrowings as detailed in Note 21.

Equity includes all capital and reserves of the Group that are managed as capital.

(e) Fair values versus carrying amounts

Management believes that the fair value of the Group's financial assets and liabilities approximates their carrying amounts.

Categories of financial instruments

	2022	2021
	\$000	\$000
Financial assets (includes cash)		
Trade and other receivables at FVTPL	75	71
Cash at amortised cost	4,33	2,809
	1	
	4,406	2,880
Financial liabilities – measured at amortised cost		
Trade and other payables at amortised cost	1,889	601
Loans and borrowings at amortised cost	1,126	1,390
	3,015	1,991

The basis for determining fair values is disclosed below.

Trade receivables and payables at FVTPL are recorded at fair value through profit and loss as they fail the criteria for amortised cost owing to the variability as a result of final pricing adjustments.

Financial instruments measured at fair value are presented by level within which the fair value measurement is categorised. The levels of fair value measurement are determined as following:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The Group's contract receivables and liabilities at the year end are recorded at fair value through profit and loss and fair valued based on the estimated forward prices that will apply under the terms of the sales contracts upon the product reaching the port of destination. The trade receivable fair value reflects amounts receivable from the customer adjusted for forward prices expected to be realised.

In the absence of observable forward prices the forward price is estimated using a valuation methodology which is based on vanadium spot prices at 31 December 2022 adjusted for the discount for AMV, time value of money and carry costs. Given the short period to final pricing the time value of money and carry costs are not significant and the forward price materially approximates the spot price at year end with the adjustment to reflect the difference between vanadium pentoxide prices and AMV. Any fair value of trade receivables and payables at FVTPL are categorised at Level 3. During the year there were no transfers between levels of fair value hierarchy.

25 Commitments

Under the conditions of the Subsoil Use Agreement under which the Group has the right to develop and exploit the Balasausqandiq deposit, the Group is obliged to undertake a minimum level of mining and to make certain levels of expenditure on the training of Kazakh employees, research and development and the development of the Shieli region. There is also an obligation to set aside funds to provide for the eventual costs of mine closure and or site reclamation.

- Minimum quantity of ore to be mined:

Year	Tonnes
2018	15,000
2019	15,000
2020	15,000
2021	15,000
2022	15,000
2023	545,000
2024	763,000
2025 onwards	Increase to 1,000,000 per year starting from 2025

- Training costs should be equal to 1% of the Group's capital expenditures on subsoil activities. Costs in 2022: US\$7,000 (2021: US\$4,000)
- Research and development should be equal to 1% of the Group's income from subsoil activities. Costs in 2022: US\$46 272 (2021: US\$11,100)
- The addition to the liquidation fund should be equal to 1% of the Group's costs of mining ore. Costs in 2022: US\$12,000 (2021: US\$12,000)
- Expenditure on social development of the Shieli region should be equal to 1.5% of the Group's costs of mining ore. Costs in 2022: US\$330 (2021: US\$750).

All obligations of the Subsoil Use Agreement have been complied with except for certain exploration work programme requirements, specifically the volume of ore to be mined. As a result, the Group has applied for amendments to the Subsoil Use Agreement given the unique situation created by the Covid-19 pandemic during 2020 and 2021. The amendments that the Group have requested relate to the transfer of 30,000 tons of ore to be mined between 2020 and 2021 to 2023 and 2024. As a result, and if the amendments are granted, the obligation for mining in 2020 and 2021 will be equal to zero tons, 2022 to 2024 will be equal to 590,000 tons and starting from 2025 1,000,000 tons of ore, per year (mining of 15,000 tonnes for 2022 has been completed). The request is in the process of review with the relevant authorities of the Kazakh government.

26 Contingencies

(a) Insurance

The insurance industry in the Kazakhstan is in a developing state and many forms of insurance protection common in other parts of the world are not yet generally or economically available. The Group does not have full coverage for its plant facilities, business interruption or third party liability in respect of property or environmental damage arising from accidents on Group property or relating to Group operations. There is a risk that the loss or destruction of certain assets could have a material adverse effect on the Group's operations and financial position.

(b) Taxation

The taxation system in Kazakhstan is relatively new and is characterised by frequent changes in legislation, official pronouncements and court decisions which are often unclear, contradictory and subject to varying interpretations by different tax authorities. Taxes are subject to review and investigation by various levels of authorities which have the authority to impose severe fines, penalties and interest charges. A tax year generally remains open for review by the tax authorities for five subsequent calendar years but under certain circumstances a tax year may remain open longer.

These circumstances may create tax risks in Kazakhstan that are more significant than in other countries. Management believes that it has provided adequately for tax liabilities based on its interpretations of applicable tax legislation, official pronouncements and court decisions. However, the interpretations of the relevant authorities could differ and the effect on these consolidated financial statements, if the authorities were successful in enforcing their interpretations, could be significant.

There are no tax claims or disputes at present.

27 Segment reporting

The Group's operations are split into three segments based on the nature of operations: processing, subsoil operations (being operations related to exploration and mining) and corporate segment for the purposes of IFRS 8: *Operating Segments*. The Group's assets are primarily concentrated in the Republic of Kazakhstan and the Group's revenues are derived from operations in, and connected with, the Republic of Kazakhstan.

2022

	Processing \$000	Subsoil \$000	Corporate \$000	Total \$000
Revenue	6,271	-	-	6,271
Cost of sales	(7,516)	-	-	(7,516)
Other income	73	-	4	77
Administrative expenses	(763)	(24)	(1,758)	(2,545)
Other expenses	(426)	-	-	(426)
Distribution expenses	(265)	-	-	(265)
Finance costs	531	-	(413)	118
Loss before tax	(2,095)	(24)	(2,167)	(4,286)

2021

	Processing \$000	Subsoil \$000	Corporate \$000	Total \$000
Revenue	4,731	-	-	4,731
Cost of sales	(4,893)	-	-	(4,893)
Other income	28	-	-	28
Administrative expenses	(1,131)	(31)	(1,309)	(2,471)
Other expenses	-	-	(11)	(11)
Distribution expenses	(94)	-	-	(94)
Finance costs	97	-	(214)	(117)
Loss before tax	(1,262)	(31)	(1,534)	(2,827)

Included in revenue arising from processing are revenues of US\$6,100,000 (2021: US\$4,600,000) which arose from sales to three of the Group's largest customers. No other single customer contributes 10 per cent or more to the Group's revenue.

All of the Group's assets are attributable to the Group's processing operations.

Sales to the Group's largest customers in 2022 were as follows:

London Chemicals and Resources Limited (UK) US\$3.2m (50%) (2021: US\$2.3m (47%))

MTALX Ltd (UK) US\$1.6m (25%) (2021: US\$1.3m (27%))

TK MetImpex TOO (Russian Federation) US\$1.3m (20%) (2021: US\$0.1m (5%))

28 Related party transactions

Transactions with management and close family members

Management remuneration

Key management personnel received the following remuneration during the year, which is included in personnel costs (see Note 9):

	2022 \$000	2021 \$000
Wages, salaries and related taxes	986	400

Refer to Note 23 for details of payables to key management and the Directors' Report for shares issued to key management. The amount of wages and salaries outstanding at 31 December 2022 is equal to US\$214,000 (2021: US\$70,000).

Other

On 1 February 2022, the Company entered into a sub-let agreement between Turian Sports Horses Limited as head lessee and NH Limited as landlord for the rental of office space in Guernsey. Turian Sports Horses Limited is wholly owned by James Turian, one of the Company's directors and NH Limited is owned by James Turian and Sharon Turian, equally. Sums paid to NH Limited during the year under the terms of the sub-let agreement were US\$17,339 (2021: US\$ nil).

29 Subsequent events

On 24 March 2023, the Company repaid all bondholders following the maturity of all outstanding bonds previously issued by the Company. The total payment made to bond holders was US\$1,144,248 representing US\$1,112,000 of principal and US\$32,248 of accrued interest.