This announcement contains inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 which is part of UK law by virtue of the European Union (Withdrawal) Act 2018.

29 April 2022

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

Final results for the year ended 31 December 2021

Ferro-Alloy Resources Limited (LSE:FAR), the vanadium mining and processing company with operations based in Southern Kazakhstan, is pleased to announce its final results for the year ended 31 December 2021.

Overview

- Strategic long-term investment by Vision Blue Resources and co-investors of US$ 10.1m to date to fund completion of Balasausqandiq feasibility study and expansion of existing operations
- Balasausqandiq feasibility study further extended to assess potential for increased by-product credits, including from rare earths, that could account for more than one third of revenues. Study now expected to complete at the end of the first half of 2023
    - Potential recovery of uranium, molybdenum, aluminium, potassium, and rare-earth by-products is being studied within metallurgical test-programme
    - Studies already underway to assess the potential to produce ferro-silicon and high value carbon that could be used as carbon black to manufacture rubber for tyres
    - Drilling of ore-body 1 completed and expanded drilling programme for remaining ore-bodies commenced. Based on the results of infill drilling of ore-body 1, drilling programme increased from 6,000 metres of core-drilling to 10,000 metres and impacted by slower than planned drilling by subcontractors
- Expansion of existing operations progressing
    - Second roasting oven commissioned in 2021 with third roasting oven commissioned in March 2022
    - Nickel tailings now being stockpiled in readiness for production from new nickel recovery process later in 2022
    - Construction of new laboratory, warehouses and connection to adjacent reliable high voltage power line completed
- Solid production performance achieved
    - 9.4% increase in vanadium pentoxide production to 260 tonnes with production rates in the second half 70% ahead of the 2020 average
    - First sales of ferro-molybdenum achieved, with production of 6 tonnes of contained molybdenum in the fourth quarter
- Strengthened board and management team
    - Appointment of Sir Mick Davis as non-executive chairman and Peet Nienaber as non-executive director

    - Appointment of William Callewaert to the board as Chief Financial Officer in April 2022
    - Process initiated to recruit an experienced project director to bring the project to production
- Improved financial results
    - Revenue increased 96% to US$ 4.7m (2020:US$ 2.3m)
    - Loss before tax of US$ 2.83m (2020: loss before tax of US$ 3.94m)
    - The Group held cash of US$ 2.81m at 31 December 2021 (2020: US$ 0.707m)
- Improved outlook for 2022
    - Third roasting oven increased capacity by 50%
    - Group already operating profitably
    - Nickel recovery project will increase revenues from each tonne treated with no additional raw material costs
- Price of vanadium pentoxide currently $12/lb, up from $5.4/lb at the beginning of 2021. Ferro-molybdenum and nickel prices up by 100% and 92% respectively from 1 January 2021 to date

Sir Mick Davis, Non-executive Chairman, commented:

"Ferro-Alloy has made good progress on a number of fronts following Vision Blue's investment in early 2021 demonstrating the value we see in the Company's assets. The expanded feasibility study is already showing the potential for Balasausqandiq to become a globally significant vanadium operation with a highly attractive suite of by-products that could eventually contribute over one third of revenues. The combination of a very large deposit, access to excellent existing power and logistics infrastructure and the potential to achieve net-negative cash vanadium production costs are highly compelling. Furthermore, increasing intensity of vanadium use in the steel sector and growing applications in energy storage gives us confidence in the future demand for the Company's product."

Nick Bridgen, CEO, commented:

"The Company is in an exciting phase of development as we invest in our existing operations to maximise profitability from each tonne of material treated and undertake our expanded feasibility study. Following the completion of a number of operational initiatives, including the commissioning of the third roaster in April 2022 which has materially increased our production capacity, the existing plant is performing well and is positioned to finance the remainder of the feasibility study and thereafter contribute to the development of Phase 1 of the Balasausqandiq project. We have several further operational initiatives planned in the coming months all of which are focussed on maximising profitability and cashflows from our existing operations as we continue to focus on delivering the larger growth projects ahead of us.

"In June 2021 we welcomed Sir Mick Davis to our board as non-executive chairman and Peet Nienaber and as a non-executive director, and in April 2022 we welcomed William Callewaert as Chief Financial Officer. All three of these additions greatly strengthen the experience of the board and I look forward to the next chapter with confidence."

Annual Report

The Annual Report for the year ended 31 December 2021 will be available on the Company's website shortly at www.ferro-alloy.com

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

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Further information about Ferro-Alloy Resources Limited

The Company's operations are all located at the Balasausqandiq Deposit in Kyzylordinskaya Oblast in the South of Kazakhstan. Currently the Company has two main business activities:

a) the high grade Balasausqandiq Vanadium Project (the "Balausa Project"); and
b) an existing vanadium concentrate processing operation (the "Existing Operation")

Balasausqandiq is a very large deposit, with vanadium as the principal product together with numerous by-products. Owing to the nature of the ore, the capital and operating costs of development are very much lower than for other vanadium projects.

A reserve on the JORC 2012 basis has been estimated only for the first ore-body (of five) which amounts to 23 million tonnes, not including the small amounts of near-surface oxidised material which is in the Inferred resource category. In the system of reserve estimation used in Kazakhstan the reserves are estimated to be over 70m tonnes in ore-bodies 1 to 5 but this does not include the full depth of ore-bodies 2 to 5.

There is an existing concentrate processing operation at the site of the Balasausqandiq Deposit. The production facilities were originally created from a 15,000 tonnes per year pilot plant which was then adapted to treat concentrates and expanded. Further expansion is being undertaken, targeting annual operating cash generation of $10m.

The Existing Operation will provide not only useful cash flows but also an experienced management and infrastructure that will greatly assist and de-risk the main prize – the development of Balasausqandiq.

Report on Operations

Introduction

The 2021 financial year was one of considerable development and investment as we continued our strategy of expanding our existing operations while progressing the feasibility study into the development of the transformative Balasausqandiq vanadium project.

In March 2021, the Company entered into an investment agreement under which Vision Blue and their associates invested US$ 10.1m (part convertible loan and part equity) during the year to fund the completion of the feasibility study into the Balasausqandiq project and the expansion of the existing operations. Under the terms of the investment agreement, Vision Blue have an option to invest a further US$ 2.5m at the investment agreement price of 9 pence per share after completion of the Phase 1 feasibility study, plus a further US$ 10m at 25 pence per share and US $20m at 77 pence per share to fund the construction of Phase 1 of the Balasausqandiq project.

Following the strategic investment from Vision Blue, the Company increased the scope of the feasibility study beyond the previously planned Phase 1 to include Phase 2 as well as the assessment of options to generate revenues from additional by-products. Drilling was initially focused on Ore Body 1 ("OB1") and is moving to Ore Bodies 2, 3 and 4 during the remainder of 2022. Metallurgical test work to validate the process and confirm critical process parameters tested in the pilot plant such as leach extraction, extraction kinetics, effect of recycle streams, solid/liquid separation requirements, reagent consumptions and final vanadium pentoxide product quality is ongoing in the SGS laboratory in Canada.

Production continued to increase in 2021 despite challenging global conditions during the first half of the year. Production of ammonium metavanadate ("AMV") grew by 9.4% year on year although by the fourth quarter, after the worst effects of the Covid-19 pandemic and the world-wide transport issues of the first half of the year had subsided, production was running at some 70% greater than the average of 2020. In October 2021 the Company started production and commercial sales of a new product – ferro-molybdenum. The sale of nickel concentrates continued as planned until the end of the year but are now being stockpiled pending treatment in a planned nickel recovery process which will yield much higher returns. After production of nickel starts later in 2022, the full range of valuable materials will be recovered from the raw materials treated, leaving little or no residues or tailings.

The investment programme for the existing operations included the connection to the high voltage power line, construction of a new laboratory, a new warehouse, construction and commissioning of a new pre-roaster oven and the creation of the new ferro-molybdenum department. A third roaster oven was ordered and installed after the year end.

The prices of vanadium pentoxide, the Group's principal product, rose over the year from US$ 5.40/lb to US$ 8.75/lb and at 24 April 2022 is around US$ 12.00/lb. Molybdenum (in ferro-molybdenum) has risen from around US$ 23/kg to around US$ 44/kg over the year and is now at around US$ 46/kg. Nickel similarly rose over the year from US$ 17/kg to US$ 21/kg and is now at US$ 34/kg.

Production

During the year, production of vanadium pentoxide amounted to 260 tonnes, 9.4% above 2020. Growth occurred mainly in the last quarter, while the earlier quarters were affected by the continuing Covid-19 situation and global logistics problems causing limitations on raw materials available for production. The Company started converting the previous calcium molybdate product into the higher priced ferro-molybdenum in October 2021, with production totalling 6 tonnes of contained molybdenum in the fourth quarter.

Quarter (2021)	Production of Vanadium Pentoxide	Growth vs last year	Production of Molybdenum

	(tonnes of vanadium pentoxide contained in AMV)		(tonnes of molybdenum contained in ferro-molybdenum and in calcium molybdate)
Q1	57.4	+20%	13.7
Q2	30.8	-37%	2.1
Q3	70.2	-23%	13.5
Q4	101.2	+104%	9.4
2021 total	**259.6**	**+9.4%**	**38.7**

Production outlook

The Group's operations are now operating smoothly and profitably but a number of additional initiatives are underway to ensure that the existing operation reaches its full planned potential. The Company's production focus is not only on maximising the production of vanadium but also on maximising the recovery of all the valuable components from each tonne of raw material treated, and to process each product to the point where full international pricing can be obtained without discounts. We aim to become the most competitive company in our field, to maximise profitability from each tonne treated and thus reduce the sensitivity of the enterprise to the potential effects of rising raw material prices. To this end, in 2022 we have, or plan to:

- Increase the production of vanadium by the installation of the third roasting oven which was installed and commissioned at the end of March 2022.
- Set-up of the new ferro-molybdenum department with the focus on increasing production of ferro-molybdenum, including some additional production from molybdenum contained in water recovery ponds. This was completed in April 2022.
- Start production and sales of vanadium pentoxide to decrease the discount that is given by selling AMV. This project was delayed in 2021 because the use of some of the equipment was diverted to the production of ferro-molybdenum which was more profitable. The replacement equipment for use in conversion of AMV to vanadium pentoxide is now being constructed.
- Start processing of the nickel-rich tailings which were formerly sold but are now being stockpiled ready for the start-up of a nickel recovery process during 2022. The Company has developed a process superior to the previously planned electric arc furnace which will produce a high-grade concentrate from which the Company plans to make ferro-nickel using the alumothermic process. The equipment to be used is the same as existing equipment already in operation. Its operation is well-known to the Company and it can be constructed in Kazakhstan, enabling cancellation of the proposed electric arc furnace that was to have been built in Russia.

Feasibility study

Following the investments by Vision Blue, the decision was made to expand the scope of the feasibility study to include not only the first phase of development of Balasausqandiq, known as Phase 1, but also to include Phase 2. Phase 1 envisages the treatment of 1 million tonnes of ore per year to produce 5,600 tonnes of vanadium pentoxide, and Phase 2 envisages an expansion to 4 million tonnes per year with production rising to 22,400 tonnes of vanadium pentoxide. Including the latter involves the drilling of Ore-Bodies 2, 3 and 4 to prove sufficient reserves under the JORC system of classification that the Company uses. Furthermore, the scope of the study has been expanded to include an investigation of the suitability of the carbon-silica tailings for use as a filler in making rubber – particularly tyres, and more recently, the decision has been taken to include the recovery of rare earth elements in the study, with early indications that, if successful, they will add significantly to the project's value.

A concept study into the development of a ferro-silicon process plant will also be carried out. This is a logical development of the vanadium operation which makes use of the carbon-silica tailings to make ferro-silica, where the untreated tailings will replace all of the silica and around half of the carbon requirements. The project appears to be extremely profitable as not only are the raw materials available on site but it can also make use of power generated from gas at very low cost, potentially making the Company one of the lowest cost producers in the world.

At Balasausqandiq, there are five currently known ore-bodies. The confirmatory infill drilling of OB1, the reserves of which (based on the previous ore reserve estimate) are sufficient for Phase 1 of the project, has been completed. The core samples are currently being assayed with the results expected by around the end of May 2022. In April 2022, the Company started the core and reverse circulation drilling of Ore Bodies 2, 3 and 4 to provide the reserves necessary to support the feasibility study into Phase 2.

The Company has commissioned SRK Consulting (Kazakhstan) Limited ("SRK") to produce the overall feasibility study, with the metallurgy and process plant being covered by Tetra Tech Inc. Based on the results of infill drilling of OB1, SRK's recommended drilling programme is rather more extensive than previously planned, with the original core-drilling increased from 6,000 meters to 10,000 meters. The rate of drilling by subcontractors to date has also been slower than planned, resulting in a delay in the expected date of completion of Phase 1 of the study to around the middle 2023. The Company is currently taking steps to keep as close as possible to the original schedule including the addition of a third core drill-rig and further rigs are under discussion.

The leaching process brings into solution not only the vanadium but also various other components of the ore, including uranium, molybdenum, aluminium, potassium and rare earth elements. Recovery from the leach solution is carried out by a three-stage sorption process in which uranium and molybdenum are recovered in the first, vanadium in the second and rare earth elements can possibly be recovered in the third. The aluminium and potassium can be precipitated from the solutions as potassium alum. The recovery of these by-products will be confirmed within the metallurgical test-programme which is ongoing.

Potentially the most valuable by-product is carbon, which makes up around 14% of the ore and is contained in the tailings with the remaining material being mostly silica. The carbon is similar in physical and chemical form to carbon black which is a high-value form of carbon, usually made by the incomplete combustion of oil or gas. The Company has previously successfully tested two potential uses for this product; the first as a filler for making rubber and the second for smelting to make ferro-silicon. Two test-programmes are currently underway to further test each of these uses. The Company has worked with a Kazakhstan university to test the processes for concentration of the carbon in the tailings and the use of a 40% carbon concentrate to produce rubber which is now being tested in the Belorussian Technological University to prove its physical and mechanical properties. The use of similar carbon concentrates tested by the same laboratory in Kazakhstan has indicated that there may be a very large, high-value, potential market for this material for making tyres.

Strengthened management team

The Group has taken a number of steps to ensure it has the appropriate management resources in place to support its ongoing development through the expansion of existing operations, the delivery of the extended feasibility study and the expected commencement of project construction in the second half of 2023.

In April 2022, William Callewaert was appointed Chief Financial Officer to oversee the operation and development of the Group's finance function. William graduated in 2002 from the University of Durham with an honours degree in Law after which he trained as a Chartered Accountant in audit services with leading tax, accounting and business advisory firm, Blick Rothenberg. Having qualified in

2006, William's career progressed within advisory services at Grant Thornton and KPMG in both the UK and offshore. Most recently, William was a Business Advisory Director of the advisory department at BDO Guernsey. As a result of this appointment, the Group's financial and commercial team are at full compliment.

To support the continued development of the project in Kazakhstan, a process has also been initiated to recruit an experienced project director to oversee the final stages of the feasibility study, manage the construction of the mine and plant and bring the project into production.

Earnings and cash flow

The Group reported increased revenues of US$ 4.73m for the period compared to US$ 2.37m in 2020, reflecting a considerable increase in production and sales.

Revenue, and the corresponding trade receivable, are recognised at the time of transfer of control 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 port of destination. Therefore, revenues recognised at the time of shipment are subject to adjustment to prices prevailing up to four months later. Typically, the customer makes a provisional payment based on volumes, quantities and spot price at the date of shipment and makes a final payment once the product has reached its final destination. As a result, when prices are rising, the final receipt can exceed the initial revenue recorded and vice versa. Where prices decrease significantly, this can result in the Company being in a net payable position if a downward adjustment to the consideration exceeds the provisional payment received.

Amounts receivable from, or payable to, customers for sales which are still subject to final price determination are initially recorded at the estimated fair value at the time of shipment, with changes in fair value recorded as other revenue. Changes in this fair value during the year and, for those sales where the final determination has not been made, fair values assessed on the basis of prices prevailing at the year end, increased revenue by US$ 0.02m to US$ 4.73m (2020: increase by US$ 0.07m to US$ 2.37m). In periods of rising prices this adjustment would be expected to be positive and when falling, negative. In the long run such pluses and minuses can be expected to even out. The final price determinations made after the end of 2021 in respect of sales made before the end of the year were not significantly different from the fair value assessed at the end of the year.

US$'000	2021	2020
Revenue from shipments recorded at the price at time of dispatch	4,709	2,300
Adjustments to revenue after final price determination and fair value changes	22	73
Total Revenue	**4,731**	**2,373**

Cost of sales increased to US$ 4.9m from US$ 3.8m in 2021 primarily reflecting the increased volumes and increases in the price of the vanadium concentrate purchased at the high prices prevailing in 2020/21 and utilised in 2021. 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 prices prevailing at the time of purchase.

Administrative expenses of US$ 2.4m (2020: US$ 2.2m) principally comprised employee costs, ongoing listing costs, audit and professional services and unrecoverable VAT. The costs directly relating to the Company being listed on the London Stock Exchange amounted to US$ 0.119m (2020: US$ 0.103m).

Net finance costs were US$ 0.117m (2020: US$ 0.133m) the majority of which relate to interest payable on bonds issued by the Group.

The Group made a loss before tax of US$ 2.83m (2020: loss before tax of US$ 3.94m).

Net cash outflows from operating activities totalled US$ 4.98m (2020: US$ 1.33m) with the increase principally reflecting an increase in the volume of raw materials held for processing to ensure consistent production output. Changes in trade receivables increased to US$ 0.4m (2020: US$ 0.1m) as a result of payment for goods being requested prior to shipping to customers. Changes in trade payables decreased by US$ 0.85m (2020: increase US$ 0.5m) in addition to a change in inventory which generated a cash outflow of US$ 1.2m (2020: US$ 1.0m outflow).

Net cash outflows from investing activities totalled US$ 2.5m (2020: US$ 1.1m) and included US$ 2.2m (2020: US$ 0.73m) of capital expenditure associated with expanding the processing operation and US$ 0.33m (2020: US$ 0.33m) of expenditure on the feasibility study for the exploration and evaluation asset.

Net cash inflows from financing activities included subscriptions for shares amounting to US$ 5.9m (2020: US$ 1.6m), the issue of bonds amounting to US$ 0.48m (2020: US$ 0.9m) and the issue of a convertible loan note for US$ 4m (2020: US$ nil).

The Group held cash of US$ 2.81m at 31 December 2021 (2020: US$ 0.707m).

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 mine 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 company 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. This has been dealt with in the section “Production” above.

Balance sheet review

Total non-current assets increased to US$ 7.25m from US$ 5.1m principally due to the continued capitalisation of the feasibility study as Exploration and Evaluation Assets and the addition of new production plant items at the mine site. The decrease in prepayments for equipment is largely related to the new powerline being brought into a state of readiness.

Current assets increased from US$ 1.66m to US$ 5.7m, principally reflecting an increase in inventory held by the Company for processing and an increase in cash from the finance raising activities completed during the year, as noted above.

Corporate

During the year, the Company undertook a number of fund-raising activities in order to support its ongoing and future operations.

The primary financing activity of 2021 was the conclusion of the strategic investment in the Company by Vision Blue and others. Under the terms of the investment agreement, Vision Blue and its co-investors invested, in aggregate, US$ 5.65m (net) by way of share subscriptions (47,087,747 Ordinary Shares issued at 9p per share) in addition to the provision of a convertible loan note of US$ 4.1m (net). Vision Blue has the option to make further investments, under the terms of the Investment Agreement, at varying share prices, as noted above.

In addition, the Company issued 242 bonds with a two-year maturity, at a domination of US$ 2,000 each, for total net proceeds of US$ 476,000.

Description of principal risks, uncertainties and how they are managed

- Current processing operations:

Current processing operations make up a small part of the Group's expected future value but provide useful cash flows in the near term and allow the Group to gain valuable experience of the vanadium industry. The principal risks of this operation are the prices of its products (vanadium, molybdenum and nickel), availabilities of vanadium bearing concentrates and efficiency of recovery of products.

The Company is constantly reviewing the market opportunities for alternative supplies of vanadium bearing concentrates and has sufficient long term contracts in place. The Company aims to extract all the useful components of the raw materials so that no residues remain on site and so that the maximum value is obtained from each tonne treated. By this means, we aim to be one of the most efficient and lowest cost secondary vanadium treatment plants so that our competitive position reduces the danger of high prices for raw materials making the operation uneconomic.

- Geopolitical situation:

While the invasion of Ukraine by Russia is not directly impacting the Company's operations, the Directors are closely monitoring situation. The main risk is to transport routes, many of which involve transit through Russia. Whilst these are currently operating, sanctions have been made against Russian and Belorussian vehicles transiting through Europe. There is a risk that further sanctions might prevent transit through Russia into Latvia, to and from where some of the Company's imports and exports currently flow. The Company is investigating alternative transit routes for raw material imports and product exports through the West of Kazakhstan, either via the Caspian Sea or overland south of the Caspian. Routes to China are working normally.

- Financing risk:

The Company is in a strong financing position. The existing operation is operating well and, subject to the uncertainties over prices and costs, is forecast to make significant profits in 2022 and onwards. In March of 2021 the Company signed an investment agreement with Vision Blue. Under the terms of this agreement, investments totalling US$ 10.1m have already been made and Vision Blue has the right to subscribe a further US$ 2.5m at the original deal price of 9 pence per share at any time up to two months after the announcement of the Stage 1 feasibility study. Vision Blue has further options to subscribe up to US$ 30m at higher prices to partially finance the construction of the Balasausqandiq project. However, the Balasausqandiq project will require substantial funds to be raised in debt and possibly further equity which will be dependent upon market conditions at the time and the successful completion of the Feasibility Study.

- Climate change risk:

See the separate environmental and social report on page 17.

- Risks associated with the developing nature of the Kazakh economy:

According to the World Bank, Kazakhstan has transitioned from lower-middle-income to upper-middle-income status in less than two decades. Kazakhstan's regulatory environment has similarly developed and the Company believes that the period of rapid change and high risk is coming to an end. Nevertheless, the economic and social regulatory environment continues to develop and there remain some areas where regulatory risk is greater than in developed economies.

- Balasausqandiq project:

The Balasausqandiq project is a much larger contributor to the Group's value than current operations and is primarily dependent on long term vanadium prices.

The project is also dependent on raising finance to meet capital costs anticipated to amount to in excess of US$100m for the first phase. Raising this money will be dependent on the successful outcome of the western bankable feasibility study which is ongoing. The favourable financial and other characteristics of the project determined by studies so far completed give the Directors confidence that the outcome of the study will be successful. Initial discussions with the providers of finance, including with the Development Bank of Kazakhstan for which our project has passed through initial screening, have been encouraging.

Signed on behalf of the Board of Directors on

28 April 2022

Consolidated Statement of Profit or Loss and Other Comprehensive Income
for the year ended 31 December 2021

	Note	2021 $000	2020 $000
Revenue from customers (pricing at shipment)	4	4,709	2,300
Other revenue (adjustments to price after delivery and fair value changes)	4	22	73
Total revenue	4	4,731	2,373
Cost of sales	5	(4,893)	(3,779)
Gross loss		**(162)**	**(1,406)**
Other income	6	28	8
Administrative expenses	7	(2,471)	(2,233)
Distribution expenses		(94)	(178)
Other expenses	8	(11)	-
Loss from operating activities		**(2,710)**	**(3,809)**
Net finance costs	10	(117)	(133)
Loss before income tax		**(2,827)**	**(3,942)**
Income tax	11	-	(2)
Loss for the period		**(2,827)**	**(3,944)**
Other comprehensive loss			
Items that may be reclassified subsequently to profit or loss			
Exchange differences arising on translation of foreign operations		(158)	(528)
Total comprehensive loss for the period		**(2,985)**	**(4,472)**
Loss per share (basic and diluted)	20	(0.008)	(0.012)

The notes form part of these consolidated financial statements.

Consolidated Statement of Financial Position for the year ended 31 December 2021

	Note	31 December 2021 $000	31 December 2020 $000
ASSETS			
Non-current assets			
Property, plant and equipment	12	4,863	2,800
Exploration and evaluation assets	13	1,434	813
Intangible assets	14	21	21
Prepayments	18	930	1,467
Total non-current assets		**7,248**	**5,101**
Current assets			
Inventories	16	2,100	694
Trade and other receivables	17	116	205
Prepayments	18	670	52
Cash and cash equivalents	19	2,810	707
Total current assets		**5,696**	**1,658**
Total assets		**12,944**	**6,759**
EQUITY AND LIABILITIES			
Equity			
Share capital	20	41,252	35,606
Convertible loan notes	20	4,019	-
Additional paid-in capital		397	397
Foreign currency translation reserve		(3,620)	(3,462)
Accumulated losses		(31,388)	(28,561)
Total equity		**10,660**	**3,980**
Non-current liabilities			
Loans and borrowings	21	901	412
Provisions	22	42	47
Total non-current liabilities		**943**	**459**
Current liabilities			
Loans and borrowings	21	489	524
Trade and other payables	23	828	1,736
Interest payable		24	-
Payables at FVTPL	24	-	60
Total current liabilities		**1,341**	**2,320**
Total liabilities		**2,284**	**2,779**
Total equity and liabilities		**12,944**	**6,759**

Consolidated Statement of Changes in Equity for the year ended 31 December 2021

	Share capital $000	**Convertible loan notes $000**	**Additional paid in capital $000**	**Foreign currency translation reserve $000**	**Accumulated losses $000**	**Total $000**
Balance at 1 January 2020	33,965	-	397	(2,934)	(24,617)	6,811
Loss for the year	-	-	-	-	(3,944)	(3,944)
Other comprehensive expenses						
Exchange differences arising on translation of foreign operations	-	-	-	(528)	-	(528)
Total comprehensive loss for the year	**-**	**-**	**-**	**(528)**	**(3,944)**	**(4,472)**
Transactions with owners, recorded directly in equity						
Shares issued, net of issue costs	1,641	-	-	-	-	1,641
Balance at 31 December 2020	**35,606**	**-**	**397**	**(3,462)**	**(28,561)**	**3,980**
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 income (loss) for the year	**-**	**-**	**-**	**(158)**	**(2,827)**	**(2,985)**
Transactions with owners, recorded directly in equity						
Shares issued, net of issue costs (Note 20)	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**

Consolidated Statement of Cash Flows for the year ended 31 December 2021

		2021 $000	2020 $000
Cash flows from operating activities			
Loss for the year	**Note**	**(2,827)**	**(3,944)**
Adjustments for:			
Depreciation and amortisation	5, 7	455	431
Write-off of property, plant and equipment		(84)	-
Write-off of VAT non-refundable	7	499	301
Write-off of prepayments	7	-	7
Write-off of receivables	7	-	15
Expenses on credit loss provision	7	-	15
Share payments and issuance of call option	20	-	75
Income tax	11	-	2
Net finance costs	10	117	133
Cash from operating activities before changes in working capital		(1,840)	(2,965)
Change in inventories		(1,209)	1,044
Change in trade and other receivables		(397)	90
Change in prepayments		(628)	(25)
Change in trade and other payables		(846)	517
Change in payables at FVTPL		(59)	7
Net cash from operating activities		**(4,979)**	**(1,332)**
Cash flows from investing activities			
Acquisition of property, plant and equipment	12	(2,211)	(733)
Acquisition of exploration and evaluation assets	13	(333)	(326)
Acquisition of intangible assets	14	(1)	(1)
Net cash used in investing activities		**(2,545)**	**(1,060)**
Cash flows from financing activities			
Proceeds from issue of share capital	20	5,900	1,649
Transaction costs on share subscriptions		(254)	(82)
Proceeds from issuance of convertible loan notes		4,019	-
Proceeds from borrowings	21	476	924
Interest paid	21	(80)	(19)
Net cash from financing activities		**10,061**	**2,472**
Net increase in cash and cash equivalents		**2,537**	**80**
Cash and cash equivalents at the beginning of year	19	707	648
Effect of movements in exchange rates on cash and cash equivalents		(434)	(21)
Cash and cash equivalents at the end of year		**2,810**	**707**

Note to the consolidated financial statements for the year ended 31 December 2021

1 Basis of preparation

The consolidated financial statements for the year ended 31 December 2021 comprise the Company and the following subsidiaries:

Company	Location	Company's share in share capital	Primary activities
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$. The presentation currency of the consolidated financial statements is US$.

(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 Company signed an investment agreement with Vision Blue on 15 March 2021 as a result of which Vision Blue and their co-investors have so far subscribed for shares and convertible loan notes to the value of US$ 10.1m to fund the expansion of the existing operation and completion of the feasibility study in the Balasausqandiq project, both of which are in process.

Vision Blue may, at their option, invest a further US$ 2.5m at the original deal price of 9 pence per share at any time up to two months after the issue of the feasibility study for the development of Phase 1 of the Balasausqandiq project, expected during the first half of 2023. Since the share price is currently significantly higher than this figure, the Directors are confident that these funds are likely to be available.

The Group's production has now reached a profitable level and although the amount of those profits available to fund the 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 for impairment (Note 12) at 31 December 2021. In doing so, net present value cash flow forecasts were prepared to approximate value in use which required key estimates including vanadium pentoxide, ferro-molybdenum and ferro-nickel prices, production including the impact of corresponding ongoing costs and an appropriate discount rate. Key estimates included:

- Production volumes of 66 tonnes per month of vanadium pentoxide (as AMV), 10 tonnes of molybdenum (as ferro-molybdenum) and from September 2022, 17 tonnes of nickel (as ferro-nickel).
- Average prices of vanadium pentoxide of US$12/lb, ferro-molybdenum of US$45.2/kg and ferro-nickel of US$32.8/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$ 89.2m) exceeds its carrying amount (US$ 4.6m) by US$ 84.6m 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 $'000
Impact if product sales prices decreased by 20%	(24,113)
Impact if production volumes decreased by 20%:	(24,111)
Impact if post-tax discount rate increased by 2 percentage points:	(10,071)

Fair value of trade receivables and payables classified at fair value through profit and loss (Note 24)

The consideration receivable in respect of certain sales for which performance obligations have been satisfied at year end and for which the Group has received prepayment under the terms of the sale agreements, remain subject to pricing adjustments with reference to market prices in the month of arrival at the port of final destination for AMV and month of shipment from the port for calcium molybdate. Under the Group's accounting policies, the fair value of the consideration is determined and the remaining receivable is adjusted to reflect fair value, or, if the final estimated consideration is lower than the amounts received prior to the year end, a payable at FVTPL is recorded. In the absence of forward market prices for the commodity, management estimated the forward price based on: a) spot market prices for vanadium pentoxide and molybdic oxide at 31 December 2021 less applicable deductions for AMV or calcium molybdate; b) foreign exchange rates; c) risk free rates and d) carry costs when material.

As at 31 December 2021 the Group recognised a payable at FVTPL of US$ nil (2020: US$0.06m).

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 licence. Judgement was required in determining that the application for deferral of obligations under the licence (Note 26) will be granted and management anticipate such approvals being provided given the impact of Covid-19, 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 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.

Financial assets

Financial assets are classified as either financial assets at amortised cost, at fair value through other comprehensive income (“FVTOCI”) or at fair value through profit or loss (“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.

Customer contracts

Under 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.

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.

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.

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.

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.

(iii) 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 to a working condition for their 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;
- 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;
- 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;
- 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.

(iii) Share-based payments

The grant-date fair value of equity-settled share-based payment arrangements granted to employees is generally recognised as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognised as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognised is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

(k) Provisions

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.

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 cost 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 etc. 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 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.

(o) 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.

(p) Earnings per share

The Group 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.

(q) 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

	2021 $000	2020 $000
Sales of vanadium products	4,078	2,197
Sales of calcium molybdate	392	68
Sales of ferro-molybdenum	161	-
Sales of gravel and waste rock	61	8
Service revenue	17	27
Total revenue from customers under IFRS 15	**4,709**	**2,300**
Other revenue - change in fair value of customer contracts	22	73
Total revenue	**4,731**	**2,373**

Vanadium and molybdenum products

Under certain sales contracts the single performance obligation is the delivery of AMV or calcium molybdate 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 and molybdic oxide for calcium molybdate 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 for AMV and the month of shipment from the port for calcium molybdate 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. Refer to Note 17 and 24 for details of trade receivables and payables at FVTPL recorded in 2021 and 2020.

5 Cost of sales

	2021 $000	2020 $000
Materials	3,709	2,523
Wages, salaries and related taxes	656	435
Depreciation	425	405
Electricity	99	145
Professional services	-	117
Transportation cost	-	97
Taxes other than income	-	31
Other	4	26
	4,893	**3,779**

6 Other income

	2021 $000	2020 $000
Other (Sales of equipment)	28	8
	28	**8**

7 Administrative expenses

	2021 $000	2020 $000
Wages, salaries and related taxes	1,035	909
Professional services	305	312
Write-off of non-refundable VAT	499	301
Expenses on credit loss provision	-	15
Taxes other than income tax	17	114
Listing and reorganisation expenses	119	103
Audit	151	152
Materials	75	57
Rent	37	55
Depreciation and amortisation	30	26
Insurance	22	21
Bank fees	20	16
Travel expenses	18	19
Write-off of bad debts	-	15
Security	14	14
Research	11	14
Communication and information services	7	9
Write-off of prepayments	-	7
Other	111	74
	2,471	**2,233**

8 Other expenses

	2021 $000	2020 $000
Other	11	-
	11	**-**

9 Personnel costs

	2021 $000	2020 $000
Wages, salaries and related taxes	1,711	1,286
	1,711	**1,286**

During 2021 personnel costs of US$ 630,000 (2020: US$ 351,000) have been charged to cost of sales, US$ 1,035,000 (2020: US$ 909,000) to administrative expenses and US$ 46,000 (2020: US$ 26,000) were charged to cost of inventories which were not yet sold as at the year end.

10 Finance costs

	2021 $000	2020 $000
Net foreign exchange costs	35	98
Unwinding of discount on site restoration provision	-	4
Interest expense on financial liabilities (bonds)	82	31
Net finance costs	**117**	**133**

11 Income tax

The Group's applicable tax rates in 2021 are an income tax rate of 20% for Kazakhstan registered subsidiaries (2020: 20%) and 0% (2020: 0%) for Guernsey and BVI 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 2021 and 2020 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:

	2021		2020	
	$000	%	$000	%
Loss before tax (Group)	**(2,827)**	**100**	**(3,942)**	**100**
Income tax at the applicable tax rate	(565)	20	(788)	20
Effect of unrecognised deferred tax assets / (utilisation of previously unrecognised losses)	581	(13)	502	(13)
Net non-deductible expenses/non-taxable income or loss	(16)	(7)	284	(7)
	-	-	(2)	-

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 2020	1,687	2,014	587	39	104	1,445	5,876
Additions	-	28	10	1	5	255	299
Foreign currency translation difference	(158)	(189)	(56)	(4)	(10)	(140)	(557)
Balance at 31 December 2020	**1,529**	**1,853**	**541**	**36**	**99**	**1,560**	**5,618**
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**
Depreciation							
Balance at 1 January 2020	639	1,645	330	17	39	-	2,670
Depreciation for the period	51	294	42	7	12	-	406
Foreign currency translation difference	(61)	(160)	(32)	(2)	(3)	-	(258)
Balance at 31 December 2020	**629**	**1,779**	**340**	**22**	**48**	**-**	**2,818**
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**
Carrying amounts							
At 1 January 2020	**1,048**	**369**	**257**	**22**	**65**	**1,445**	**3,206**
At 31 December 2020	**900**	**74**	**201**	**14**	**51**	**1,560**	**2,800**
At 31 December 2021	**1,372**	**611**	**182**	**11**	**55**	**2,632**	**4,863**

During 2021 a depreciation expense of US$ 424,000 (2020: US$ 380,000) has been charged to cost of sales, excluding cost of finished goods that were not sold at year end, US$ 30,000 (2020: US$ 25,000) to administrative expenses, and US$ 1,000 has been charged to cost of finished goods that were not sold at the year end (2020: 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 relate to the Balasausqandiq deposit. During the year ended 31 December 2021 the Group capitalised the cost (US$ 333,000) of the services of Coffey Geotechnics Ltd with respect to the production of the feasibility study as exploration and evaluation assets (in 2020: US$ 770,000). As at 31 December 2021 the carrying value of exploration and evaluation assets was US$ 1,434,000 (2020: US$ 813,000).

	2021 $000	2020 $000
Balance at 1 January	813	59
Additions (feasibility study)	626	770
Change in estimate (asset restoration obligation)	(14)	(14)
Foreign currency translation difference	9	(2)
Balance at 31 December	**1,434**	**813**

14 Intangible assets

	Mineral rights $000	Patents $000	Computer software $000	Total $000
Cost				
Balance at 1 January 2020	100	34	3	137
Additions	-	1	-	1
Foreign currency translation difference	(9)	(3)	-	(12)
Balance at 31 December 2020	**91**	**32**	**3**	**126**
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**
Amortisation				
Balance at 1 January 2020	100	10	3	113
Amortisation for the year	-	1	-	1
Foreign currency translation difference	(9)	-	-	(9)
Balance at 31 December 2020	**91**	**11**	**3**	**105**
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**
Carrying amounts				
At 1 January 2020	-	**24**	**-**	**24**
At 31 December 2020	**-**	**21**	**-**	**21**
At 31 December 2021	**-**	**21**	**-**	**21**

During 2021 and 2020 amortisation of intangible assets was charged to administrative expenses.

15 Deferred tax assets and liabilities

Unrecognised deferred tax assets

	2021 $000	2020 $000
Temporary deductible differences	119	320
Tax losses carried forward	11,590	10,511
Unrecognised tax deferred tax assets	(11,709)	(10,831)
	-	-

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 2021 are presented below:

Expiry year	$000
2022	322
2023	1,020
2024	521
2025	251
2026	881
2027	528
2028	566
2029	2,362
2030	3,721
2031	1,675
	11,847

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

16 Inventories

	2021 $000	2020 $000
Raw materials and consumables	1,805	434
Finished goods	287	75
Work in progress	7	185
Goods in transit	1	-
	2,100	**694**

During 2021 inventories expensed to profit and loss amounted to US$ 3,709,000 (2020: US$ 2,580,000).

17 Trade and other receivables

Current	2021 $000	2020 $000
Trade receivables from third parties	62	18
Due from employees	22	10
VAT receivable	58	205
Other receivables	9	8
	151	241
Expected credit loss provision for receivables	(35)	(36)
	116	**205**

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

	2021 $000	2020 $000
Non-current		
Prepayments for equipment	930	1,467
	930	**1,467**
Current		
Prepayments for goods and services	670	52
	670	**52**

The prepayments for equipment is related mainly to the high voltage powerline connection. For more details see the earlier report on production.

19 Cash and cash equivalents

	2021 $000	2020 $000
Cash at current bank accounts	2,795	688
Cash at bank deposits	14	14
Petty cash	1	5
Cash and cash equivalents	**2,810**	**707**

20 Equity

(a) Share capital

Number of shares unless otherwise stated	**Ordinary shares**	
	31 December 2021	**31 December 2020**
Par value	-	-
Outstanding at beginning of year	330,589,052	312,978,848
Shares issued	47,087,747	17,610,204
Outstanding at end of year	**377,676,799**	**330,589,052**

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.

On 6 January 2020 the Company's shares were admitted to listing on the Astana International Stock Exchange.

From 23 January 2020 the Company's shares were delisted from the Kazakh Stock Exchange.

During 2021 the Company issued 47,087,747 ordinary shares of no par value by way of a direct subscription into the Company for cash at price 9 pence per share, raising a total of £4,200,000.

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 which have already been received, and avoidance of the possibility of triggering a requirement for the issue of a prospectus which will automatically be achieved upon the effluxion of time provided no further shares are issued.

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.

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) Dividends

No dividends were declared for the year ended 31 December 2021 (2020: US$ nil).

(c) 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)

	2021 $000	2020 $000
Loss for the year, attributable to owners of the Company	(2,827)	(3,944)
Loss attributable to ordinary shareholders	**(2,827)**	**(3,944)**

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

Shares	**2021**	**2020**
Issued ordinary shares at 1 January (after subdivision)	330,589,052	312,978,848
Effect of shares issued (weighted)	4,531,663	6,812,878
Weighted-average number of ordinary shares at 31 December	**335,120,715**	**319,791,726**
Loss per share of common stock attributable to the Company (basic and diluted)	(0.008)	(0.012)

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.

	2021 $000	2020 $000
Non-current liabilities		
Bonds payable	901	412
	901	**412**
Current liabilities		
Bonds payable (early repayment rights)	465	512
Interest payable	24	12
	489	**524**

Terms and conditions of outstanding bonds in 2021 were as follows:

USD	Currency	Effective interest rate	Nominal amount	Actual amount	Coupon rate	Coupon paid	Interest
Bonds payable	USD	7.5%	506	503	5.8%	38	31
Bonds payable	USD	7.0%	886	876	5.8%	41	50
Bonds payable	USD	5.8%	20	21	5.8%	1	1
			1,412	**1,400**		**80**	**82**

During 2021 the Group sold bonds to subscribers and received cash from subscribers in the total amount of US$ 476,000 (2020: US$ 924,000).

Details of tranches of the bonds

Tranche date	Bond denomination	Actual price per bond	Number of bonds	Nominal amount	Actual amount	Earliest repayment date	Maturity date
08.02.2021	2000	1999	58	116,000	115,940	17.03.2023	17.03.2023
17.03.2021	2000	1956	52	104,000	101,708	17.03.2023	17.03.2023
17.03.2021	2000	1956	30	60,000	58,678	17.03.2023	17.03.2023
17.03.2021	2000	1956	102	204,000	199,504	17.03.2023	17.03.2023
Total				**484,000**	**475,830**		

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

Loans and borrowings	**2021 $000**	**2020 $000**
At 1 January	936	-
Cash flows:		
-Interest paid	(80)	(19)
-Proceeds from loans and borrowings	476	924
Total	**1,332**	**905**
Non-cash flows		
- Interest accruing in period	95	33
- Bond discount/premium	-	(2)
At 31 December	**1,427**	**936**

22 Provisions

	2021 $000	**2020 $000**
Balance at 1 January	47	64
Unwinding of discount	-	4
Change in estimate	(4)	(14)
Foreign currency translation difference	(1)	(7)
Balance at 31 December	**42**	**47**
Non-current	42	47
	42	**47**

Site restoration

A provision was recognised in respect of the Group’s obligation to rectify environmental issues in the Balasausqandiq mine, 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 contract. Based on the working program which forms the part of the Subsoil contract the total amount is expected to reach KZT 675m or 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 inflation of 7.5% (2020: 7.5%). The estimated period for discounting was 22 years (2020: 23 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 Government officials at the time that restoration commences.

23 Trade and other payables

	2021 $000	2020 $000
Trade payables	625	1,035
Debt to directors/key management (Note 29)	7	522
Debt to employees	68	57
Other taxes	117	122
Advances received	11	-
	828	**1,736**

24 Payables at FVTPL

	2021 $000	2020 $000
Payables at FVTPL	-	60
	-	**60**

25 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;
- 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	
	2021 $000	**2020 $000**
Trade and other receivables, excluding amounts due from employees and VAT receivable	71	-
Cash and cash equivalents	2,809	702
	2,880	**702**

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

	Carrying amount	
	2021 $000	**2020 $000**
Kazakhstan	71	-
	71	**-**

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

	Carrying amount	
	2021 $000	**2020 $000**
Trade receivables:		
Wholesale customers	62	-
Other receivables		
Other	9	-
	71	**-**

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

	Gross 2021 $000	**Impairment 2021 $000**	**Net 2021 $000**	**Gross 2020 $000**	**Impairment 2020 $000**	**Net 2020 $000**
Not past due	71	-	71	-	-	-
Past due more than 180 days	35	(35)	-	36	(36)	-
	106	**(35)**	**71**	**36**	**(36)**	**-**

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

	2021 $000	2020 $000
Balance at beginning of the year	36	21
Expected credit (loss) / gain change	(1)	15
Balance at end of the year	**35**	**36**

Amounts due from customers at year end have been subsequently collected in 2021, except for credit impaired amounts. No additional expected credit loss provision has been applied.

(ii) Cash and cash equivalents

As at 31 December 2021 the Group held cash of US$ 2,810,000 (2020: US$ 707,000), of which bank balances of US$ 2,809,000 (2020: US$ 702,000) represent its maximum credit exposure on these assets, which excludes petty cash. 99% (2020: 64%) is held in banks with credit ratings of A+ and 1% in banks with credit ratings of B to BBB- (2020: 36%). 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.

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 and payables at FVTPL	601	601	9	592	-	-
Loans and borrowings	1,390	1,477	-	-	957	520
	1,991	**2,078**	**9**	**592**	**957**	**520**

2020

	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 and payables at FVTPL	1,674	1,674	9	1,665	-	-
Loans and borrowings	936	1,015	-	23	540	452
	2,610	**2,689**	**9**	**1,688**	**540**	**452**

(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 $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:

2021	US$-denominated	GBP-denominated	EUR-denominated	RUB-denominated	KZT-denominated
	2021 $000	2021 $000	2021 $000	2021 $000	2021 $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)**

2020	US$-denominated	GBP-denominated	EUR-denominated	RUB-denominated	KZT-denominated
	2020 $000	2020 $000	2020 $000	2020 $000	2020 $000
Cash and cash equivalents	248	198	-	-	260
Trade and other payables	(700)	(497)	(31)	(34)	(412)
Loans and borrowings	(936)	-	-	-	-
Net exposure	**(1,388)**	**(299)**	**(31)**	**(34)**	**(152)**

The following significant exchange rates applied during the year:

in US$	Average rate		Reporting date spot rate	
	2021	2020	2021	2020
KZT 1	0.0023	0.0024	0.0023	0.0024
GBP 1	1.3756	1.2827	1.3855	1.3576
RUB 1	0.0136	0.0139	0.0138	0.0134
EUR 1	1.1831	1.1414	1.1907	1.2268

(ii) Interest rate risk

Changes in interest rates do not significantly impact the Group's position as at 31 December 2021. 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 2020.

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

	2021 $000	**2020 $000**
Financial assets (includes cash)		
Trade and other receivables at FVTPL	71	-
Cash at amortised cost	2,809	702
	2,880	702
Financial liabilities – measured at amortised cost		
Trade and other payables at amortised cost	601	1,614
Trade payables at fair value through profit and loss	-	60
Loans and borrowings at amortised cost	1,390	936
	1,991	2,610

The basis for determining fair values is disclosed below.

Trade payables and receivables 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. Any 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 the year end adjusted for the discount for AMV / calcium molybdate versus vanadium pentoxide / molybdic oxide, 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 / molybdic oxide prices and AMV / calcium molybdate. 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.

26 Commitments

Under the conditions of the subsoil use contract 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 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 2021: US$ 4,000 (2020: US$ 2,000)
- Research and development should be equal to 1% of the Group's income from subsoil activities. Costs in 2021: US$ 11,100 (2020: US$ 13,700)
- The addition to the liquidation fund should be equal to 1% of the Group's costs of mining ore. Costs in 2021: US$ 12,000 (2020: 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 2021: US$ 750 (2020: US$ 400).

All obligations of the Subsoil Use Contract 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 Contract 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 2022 and 2023. 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. The request is in the process of review with the relevant authorities of the Kazakh government.

27 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.

28 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.

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 & other expenses	(94)	-	-	(94)
Finance costs	97	-	(214)	(117)
Loss before tax	**(1,262)**	**(31)**	**(1,534)**	**(2,827)**

2020

	Processing $000	Subsoil $000	Corporate $000	Total $000
Revenue	2,373	-	-	2,373
Cost of sales	(3,779)	-	-	(3,779)
Other income	8	-	-	8
Administrative expenses	(990)	(25)	(1,218)	(2,233)
Distribution & other expenses	(178)	-	-	(178)
Finance costs	(68)	-	(65)	(133)
Loss before tax	**(2,634)**	**(25)**	**(1,283)**	**(3,942)**

Included in revenue arising from processing are revenues of US$ 4,600,000 (2020: US$ 2,300,000) 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 2021 were as follows:

London Chemicals (UK)	US$ 2,300,000 (47%) (2020: US$ 2,000,000 (87%))
Sideralloys SA (Switzerland)	US$ 1,000,000 (25%) (2020: US$ 300,000 (12%))
MITAX Ltd (UK)	US$ 1,300,000 (27%) (2020: US$ nil (0%))

29 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):

	2021 $000	2020 $000
Wages, salaries and related taxes	400	527

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 2021 is equal to US$ 70,000 (2020: US$ 500,000).

30 Subsequent events

There are no subsequent events to report following the year end.