FINNISH MINERALS GROUP

ANNUAL REPORT 2019

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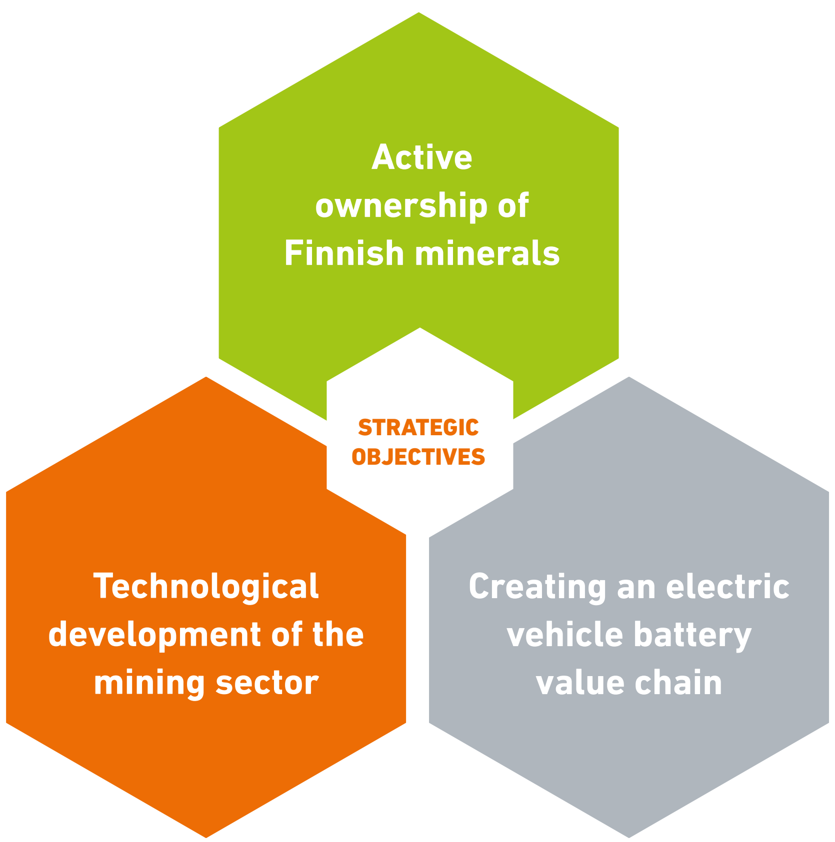
MISSION

Responsibly maximising the value of Finnish minerals

VISION

We will bring active and competent capital to a technologically advanced mining industry. We will create an integrated electric vehicle battery value chain in Finland.



KEY FIGURES 2019

The Group companies comprise Finnish Minerals Group as well as Terrafame Oy and Finnish Battery Chemicals Oy.

GROUP COMPANIES

Net sales EUR	EBITDA EUR	EBIT EUR	Total assets EUR	Personnel 31 Dec 2019
310.4 million	29.6 million	-9.1 million	861.6 million	769

FINNISH MINERALS GROUP

Net sales EUR	EBITDA EUR	EBIT EUR	Total assets EUR	Personnel* 31 Dec 2019
0.6 million	-2.5 million	-2.5 million	530.2 million	15

*) Including staff leasing.

CEO'S REVIEW

VALUE ADDITION OF MINERALS SHOULD BE ENHANCED

Our objective is to responsibly maximise the value of Finnish minerals by activating and developing state ownership and increasing domestic value addition.

THE YEAR 2019 was the first full year of operation for Finnish Minerals Group under its current mandate. At the end of year, the value of our shareholdings totalled EUR 438,4 million. We employed 15 people. This includes our office in Shanghai, where our battery value chain work related to the Asian market is coordinated.

The largest holding is in Terrafame Oy, of which we own 71.8 per cent. Terrafame's net sales in 2019 were EUR 310.4 million and EBITDA EUR 32.0 million. In addition to production operations, the company's focus in the past year was on the construction of a new nickel and cobalt sulphate plant. Scheduled for deployment in 2021, the plant will be among the world's largest production units for electric vehicle battery chemicals.

We increased our investment in battery minerals by participating in the funding round of Keliber Oy. As a result, Finnish Minerals Group is now Keliber's largest shareholder, with a 24.3 per cent shareholding. Keliber continued to promote its lithium project throughout the year, moving towards the construction and production phase.

Sotkamo Silver AB's silver mine in Tipasoja, Sotkamo was opened in March, and in September the company announced that production volumes had reached the long-term target level.

However, investment activities are never without uncertainties. This was shown by the bankruptcy of Ferrovan Oy in the spring. The concrete financial loss incurred by Finnish Minerals Group due to the write-downs was EUR 3.1 million.

Cooperation with our technology partners continued throughout the year. We are engaged in many ongoing projects through our participation in various industrial and R&D communities in Finland and Europe. We also continued our active involvement in the European Battery Alliance, which aims to establish battery production in Europe.

We are working closely on building a value chain for the manufacture of lithium-ion batteries in Finland and continued negotiations regarding investments into production of battery cells and related intermediate products. In late 2019, we started preparing for the EIA procedure concerning the intermediate products, i.e. the precursor and cathode active materials.

Useful feedback from stakeholders

Finnish Minerals Group aims to be a forerunner that is mindful of the economic, industrial and sustainable aspects of its investments. The importance of responsibility is highlighted in all that the company does starting from the work of Board of Directors.

In the autumn, we carried out a stakeholder survey in order to map the expectations for the company's responsibility. The responses emphasised how the stakeholders expect the company to act as a long-term owner in the mining and battery industry and participate in building a battery value chain in Europe. The stakeholders also expected our portfolio companies to minimise the impact that their operations have on the air, water bodies, soil and biodiversity. We survey the expectations of our stakeholder so as to use them to guide the responsibility of our operations.

Battery value chain brings significant benefits

Building a battery value chain in Finland and the rise of electric cars are effective ways of reducing CO_2 emissions from transport. At the same time, the battery value chain could bring significant economic benefits: according to a survey we commissioned, investments in the various phases of the manufacturing of lithium-ion batteries could increase Finland's GDP, create new jobs and generate more tax revenues. The World Economic Forum also estimates that a battery value chain based on the circular economy is a key way of globally reducing the greenhouse gas emissions from the energy and transport sectors, as well as to create jobs.

Together with its portfolio companies and partners, Finnish Minerals Group plays a key role in building a battery value chain in Finland. Succeeding in this work requires a long-term approach, which needs to be supported by a highly predictable operating environment and sufficient resources. In 2020, in line with our strategy, our focus will be primarily on preparing for the investments in the battery value chain and increasing the shareholder value of the existing portfolio companies.

MATTI HIETANEN
CEO
Finnish Minerals Group

KEY EVENTS IN 2019

January

» Projects concerning the management of sulphates in mineral processes and the recovery of critical raw materials as by-products financed by EIT RawMaterials are launched.

February

» The final feasibility study on Keliber Oy's lithium project is completed.

» Finnish Minerals Group becomes the largest shareholder of Keliber Oy with a 24.3% shareholding.

March

» Teija Kankaanpää and Ilpo Korhonen are appointed as new members of Board of Directors.

» Production starts at Sotkamo Silver AB's silver mine in Sotkamo.

April

» The European Commission publishes a report on the Implementation of the Strategic Action Plan on Batteries.

» Finnish Minerals Group reports survey results, which show that Finns have strong faith in the battery industry potential.

» The liquidator files a bankruptcy application for Ferrovan Oy, in which Finnish Minerals Group has claims arising from convertible debt instruments.

May

» Finnish Minerals Group publishes a report on the social impact of the battery value chain's precursor, cathode active material and battery cell plants.

June

» The company publishes a report stating that the building of a battery value chain and increase in electric cars will help to significantly reduce the carbon dioxide emissions from transport.

July

» The global market price of Terrafame Ltd's main product, nickel, starts to increase after being at a relatively low level during the early part of the year.

August

» Our stakeholder survey gets started with an electronic survey and complementary interviews.

JANNE KÄNKÄNEN, CHAIRMAN OF THE BOARD, FINNISH MINERALS GROUP

FIVE QUESTIONS FOR THE CHAIRMAN OF THE BOARD

The operating environment is complex and rapidly changing.

Janne Känkänen

1 What were the priorities in the work of the Finnish Minerals Group's Board of Directors in 2019?

Finnish Minerals Group and its Board have prioritised monitoring the current portfolio companies and developing their shareholder value in the long term. We have also focused a great deal of effort on bringing to Finland new kind of industrial production related to the lithium-ion battery production value chain.

2 What were the year's biggest challenges?

The operating environment of Finnish Minerals Group and its portfolio companies – Terrafame, Keliber and Sotkamo Silver – is complex and rapidly changing. There is also fierce competition for battery value chain plants in Europe and globally. This calls for the ability to react and adapt quickly, while continuing to follow our strategic objectives. Based on this, I would like to say a special thank you to the company's personnel for their dedication and perseverance.

3 The Board has seven members. What are their core competencies?

The Board of Directors has proven expertise and experience in several areas, including mining, industry, venture capital investing and corporate social responsibility. Furthermore, it has been important for a State-owned special-purpose company to have expertise on the Board related to the State ownership. The number of Board members has gradually been increased in conjunction with the expansion of company operations and all original members continue to serve on the Board. usjäsenet ovat edelleen mukana.

4 At the end of 2019, Finnish Minerals Group's stake in Terrafame was 71.8 per cent. Do you think the State will be able to divest the investment successfully later on?

The State-owner set three objectives for Terrafame when the company was established in 2015. All these objectives have been met: the company's environmental situation has been stabilised to a good level, a substantial amount a private financing has been acquired, and the company has showed that it has the prerequisites for commercial viability. The battery chemicals plant under construction will make Terrafame a globally significant operator in its sector. Considering the company's value is expected to rise, I believe the State's decision to invest in it has been reasonable.

5 As the Chairman of the Board of Finnish Minerals Group, what are your expectations for 2020? And what about the long-term outlook?

The role of Finnish Minerals Group is highly relevant because its mission is linked to Finland's goal of achieving carbon neutrality by 2035 and the EU by 2050. In 2020, we will continue to work on investment projects related to the battery value chain which, if realised, will offer practical solutions for the reduction of emissions from transport alongside new industrial opportunities. We also intend to focus our efforts on developing corporate responsibility and will require our portfolio companies to do the same.

September

- During the International Climate Week, the company participates in the EU Battery Alliance high-level meeting hosted by Vice President of the European Union Maroš Šefčovič.
- The World Economic Forum publishes A Vision for a Sustainable Battery Value Chain in 2030.

October

- Terrafame Ltd posts its best quarterly operating result in the history of the company, EUR 19.6 million in Q3.
- The results of the stakeholder survey are ready to be published and used as background information for the responsibility programme.
- The Nobel Prize in Chemistry is awarded to M. Stanley Whittingham, Akira Yoshino and John Goodenough, who are pioneers in the development of lithium-ion batteries.

November

- Preparations for the EIA procedure for the precursor and cathode active material plants begins.
- Mika Seitovirta is elected Chair of the Board of the portfolio company Keliber Oy.

December

- The Board of Finnish Minerals Group approves the company's responsibility programme for 2020–2024.
- The European Commission approves the IPCEI (Important Projects of Common European Interest) application related to the battery value chain, which included a project proposal concerning Terrafame.

INVESTMENTS FOCUSED ON DEVELOPING THE PORTFOLIO COMPANIES

In 2019, the focus was on developing the portfolio companies – Terrafame, Keliber and Sotkamo Silver – and the battery value chain.

THE Government Programme published in June includes several entries on mining. Both Prime Minister Antti Rinne's and Sanna Marin's Governments set the goal of enhancing the environmental protection and operational conditions of mines and improving local acceptance and empowerment.

Ongoing legislative initiatives may have significant impact on mining investments. According to the Government Programme, the prospects for introducing a new mine tax will be studied and mines will be transferred to category I electricity tax, which is less favourable to the mining industry.

Increasing the degree of processing

In line with the investment policy, we are a long-term industrial and strategic shareholder and we typically aim to have 10–30 percent ownership in our target companies. Our investment decisions are made responsibly on a commercial basis, and our aim is to receive positive return from our investments.

We are engaged in active cooperation aimed at developing our portfolio companies and their shareholder value. We also play a role in the boards of directors of all three of our portfolio companies.

With the electrification of transport, interest in the mining and battery industries has grown, and we are expecting the demand for sustainably produced battery minerals to increase significantly for years to come. We have maintained an open dialogue with the leading operators of the various stages of the battery value chain, discussing the opportunities to invest in Finland. Our aim is to enhance the degree of minerals processing in Finland.

Ongoing projects are prioritised

In 2019, we did not invest in any new, domestic mining projects. Instead, we allocated all our available resources to our existing portfolio companies.

The largest asset in our investment portfolio in 2019 was Terrafame. We continued to support the company's operational activities, especially in technical, legal and administrative matters. For example, our expertise was utilised in the planning and building of the battery chemicals plant.

In February, we participated in the directed share issue of Keliber Oy, bought EUR 6 million worth of shares in the company, and became the largest shareholder with a 24.3% shareholding. We actively investigated the company's financing opportunities, and this work will continue in 2020.

The opening of Sotkamo Silver's mine was a positive signal for the mining industry. We would like to see other projects progress as well, because opening new mines creates more jobs and tax revenues beyond the growth centres of southern Finland.

In the spring, Finnish Minerals Group established Finnish Battery Chemicals Oy, a subsidiary in which it has 100% shareholding. In 2019, the costs of investigating the prerequisites for developing the battery industry in Finland were allocated to the new company.

Communicating actively

We took part in a number of seminars and events, in Finland and globally, to promote awareness of Finnish Minerals Group among investors and mining companies, telling them who we are and what we do. For example, we were involved in the Fennoscandian Exploration and Mining (FEM) conference held in Levi for the first time ever. The event gathered more than 1,200 participants from 32 countries and over 400 organisations, which brought us a lot of visibility.

We also kept the lines of communication open to various operators in the sector and met with representatives from various mining projects at different stages of development.

With the electrification of transport, interest in the mining and battery industry has increased. Photo by Keliber.

Terrafame's battery chemical production

Production capacity from 2021.

170,000 tonnes of nickel sulphate is enough to power between **650,000 and 1.3 million** full electric cars a year.

7,000 tonnes of cobalt sulphate is enough to power between **210,000 and 400,000** full electric cars a year.

Keliber's lithium chemicals production

Production is estimated to start in the early 2020's.

12,000 tonnes of lithium hydroxide is enough to power between **260,000 and 440,000** full electric cars a year.

INVESTMENTS IN PORTFOLIO COMPANIES

At the end of 2016, Finnish Minerals Group had investments in three companies.

Terrafame, Keliber and Sotkamo Silver are at different development stages. Photo from Sotkamo Silver.

OWNERSHIP 71,8 %

TERRAFAME KEPT GEARING UP FOR BATTERY CHEMICALS PRODUCTION

THE production volume of Sotkamo-based multi-metal company Terrafame's main product, nickel, was record-high in 2019. The company produced 27,468 tonnes of nickel and 55,222 tonnes of zinc. The company's net sales decreased compared to the previous year, with operating result for the year totalling EUR -5.6 million.

The increase of the nickel global market price, which started in the summer, accelerated the company to its record quarterly net sales in Q3 of 2019. The nickel price peaked at the beginning of September, when the price per tonne was above USD 18,000. By the end of the year, the price was back to the level in July.

In spring, damage was detected in the plastic liner of the waterproof structure and the drainage mat above it in the primary leaching area, but not in the bentonite mat underneath the liner. To remedy the situation, the company immediately launched the installation of a new, waterproof structure above the old structure. The condition of the structure in the primary leaching area was monitored as the ore reclaiming progressed, and new structures were installed as needed, which restricted production.

The strategic direction of Terrafame was already finalised in the autumn of 2018, when the company decided to invest in the production of battery chemicals. The construction of the new plant and related production facilities proceeded smoothly, and the installation of process equipment started at the end of the year. Production will commence in 2021, at which time the plant will be one of the world's largest units producing nickel and cobalt sulphate for electric car batteries. The company is also emerging as a key player in the European battery value chain.

KELIBER'S LITHIUM PROJECT IS MOVING FORWARD

OWNERSHIP 24,3 %

THE updated, final feasibility study based on the lithium hydroxide production of Keliber Oy, a mining and chemicals company located in Central Ostrobothnia, was published at the beginning of 2019. Over the course of the year, Keliber continued to move the project forward in many areas, such as technical planning, permitting and financing. The company believes that the price of lithium products will increase again and that demand for lithium hydroxide will grow with the increasing demand for electric cars.

The proceedings establishing a mining area in Syväjärvi took place in early summer. The environmental permit for Syväjärvi, granted at the beginning of 2019, is not yet final due to an appeals process.

The environmental permit application for Rapasaari is pending. In September, Keliber published an updated mineral resource estimate, according to which the company's Measured and Indicated Mineral Resources in the Rapasaari deposit are 40 per cent larger than previously estimated.

In February, Keliber organised a directed share issue whereby Finnish Minerals Group became the largest shareholder with a 24.3% ownership.

Keliber´s construction project could start in the next few years, provided that the project's preparations have reached a sufficient level with respect to permits, technical planning, and secured financing for the project.

SOTKAMO SILVER COMMENCED PRODUCTION IN MARCH

OWNERSHIP 2,0 %

SOTKAMO Silver has mineral rights for deposits that contain silver, gold and tungsten in Finland and Sweden, and for deposits that contain zinc and gold in Norway. The company's main project is the Sotkamo-based Silver Mine, where production was commenced. The opening ceremony was held on 27 March 2019.

In the spring, the company boosted its cash reserves through a directed share issue and convertible bond, in the aggregate amount of SEK 30 million. This also diluted the shareholding of Finnish Minerals Group to 2.0 per cent, but we are still the company's fourth largest owner. Sotkamo Silver was listed in both Sweden and Finland. In 2019, there was no material change in its share price.

The companies' personnel structure was finalised during 2019. In December, Paul Johansson started as the parent company's CEO and Mikko Sopanen as its CFO. Erkki Kuronen, who was appointed the CEO of Sotkamo Silver in Finland in May, is also the deputy to the parent company's CEO.

In the summer, the Kainuu Centre for Economic Development, Transport and the Environment (ELY Centre) gave a notice to the company for its delayed reporting of the environmental deviation resulting from a broken pipe caused by a construction defect. After the incident, the company revised it instructions and practices and made changes to its pumping and drying arrangements to ensure the quality of operations.

2019 was the mine's start-up year. Production was launched in March and deliveries to customers started in April. The planned levels were achieved for operating rate and yield. Reaching the production capacity meant that the company's EBITDA was positive in Q3 of 2019.

TECHNOLOGY DEVELOPMENT FOCUSED ON HIGHER UTILISATION OF RAW MATERIALS

During the year, three new projects were launched and the preparation of IPCEI portfolios became a priority.

IN 2019, the research and development activities of Finnish Minerals Group shifted closer to the industrial support and the implementation of technologies. This change was especially seen in the content and objectives of new project preparations. We also changed the name of the business area from Research and Development to Technology.

When it comes to research and development activities, the Technology team aims to influence the research programmes of universities and research institutes and the prioritisation of research topics both at national and EU-levels. The portfolio companies are responsible for operational activities and production.

Financing for new projects

As the legacy of the Ariel project, which focused on water treatment technologies and ended in the previous year, our company has strong expertise in environmental technologies, production efficiency and tapping into the potential of raw materials. This is also reflected in our project portfolio, which contains projects related to water treatment and management as well as to productising raw materials.

During 2019, we launched three new projects, of which two are partly financed by EIT RawMaterials. The Morecovery project will create conditions to exploit the by-product potential of Keliber. The Credit project focuses on demonstrating new technologies for the recycling of sodium sulphate generated in industrial processes. Environmental aspects and raw material efficiency are highlighted in both projects.

The third new project is part of BatCircle, a national research consortium funded by Business Finland. The project supports our company's strategic investment plans and the development of the battery value chain from the technological perspective.

In addition, we are collaborating with Terrafame on productising battery chemicals and scoping the opportunities for the recovery of manganese.

A common European interest

As part of European cooperation, we take part in IPCEI consortiums (Important Projects of Common European Interest), set up to facilitate projects related to building a strategic battery value chain in Europe. Several companies in Finland also participate in the work.

In 2019, Finnish Minerals Group prepared two project portfolios for IPCEI projects: the first one relates to the process of Terrafame's battery chemicals plant, which is currently under construction, and the second one to the traceability of raw materials and the demonstration of responsible production technologies. The first project was formally notified to the Commission for approval and subsequently approved in November, and the pre-notification phase for the second project was completed. The preparations for both of these projects will continue in 2020.

Support for business areas

During the year, the Technology Team also conducted a technical evaluation of Sotkamo Silver's process and initiated the technical validation of Keliber's production process.

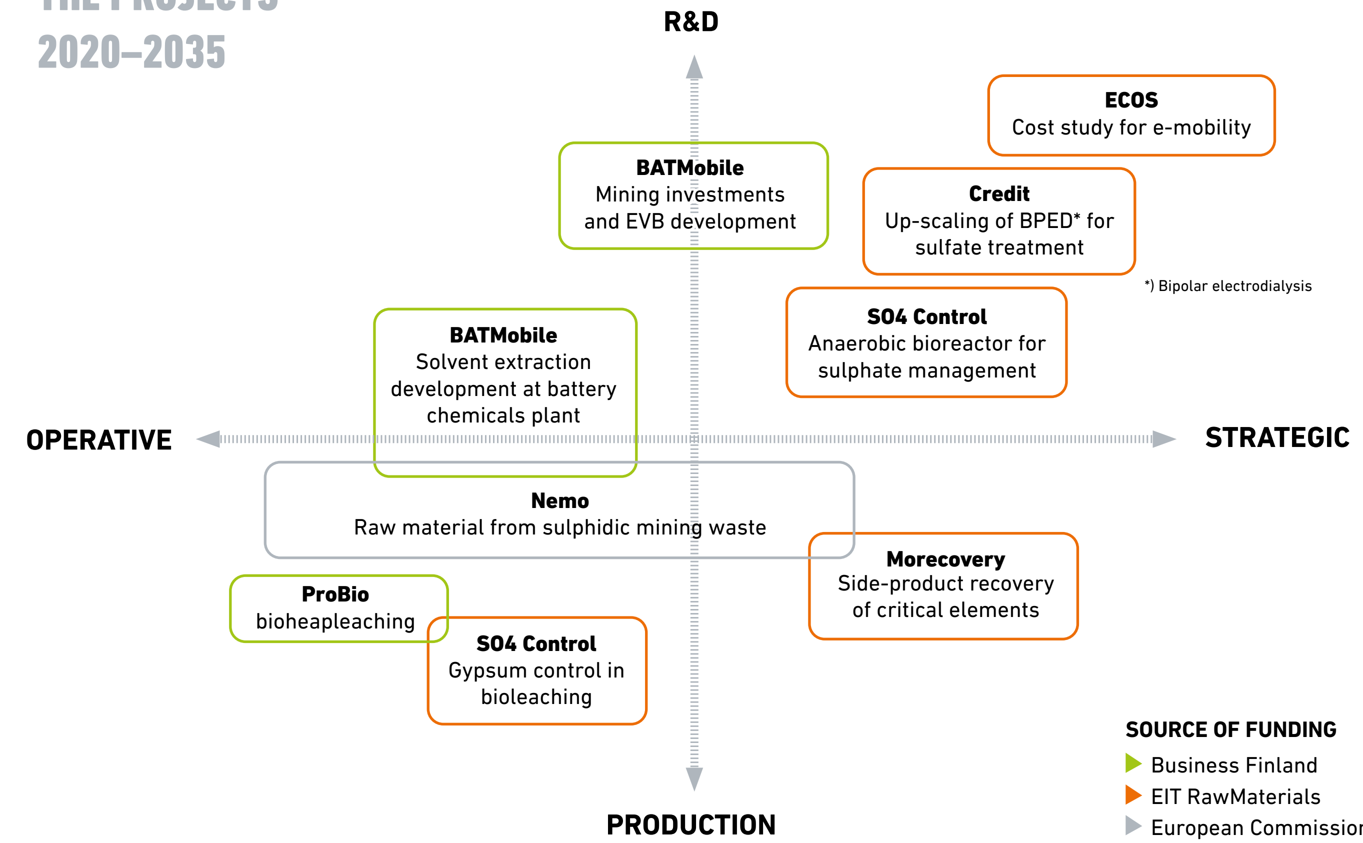
Furthermore, we participated in Terrafame's battery chemicals plant project and the Technical Committee's activities.

Internally, we prepared a strategy for the recycling and traceability of raw materials and provided support to the company's other business areas. In late 2019, we increased cooperation with the team responsible for the development of the battery business.

The Technology Team was strengthened during the year by hiring a part-time development engineer.

We shifted closer to the industrial support.

FOCUS OF THE PROJECTS 2020–2035



Importance of sodium sulphate recycling is rising

THE CREDIT PROJECT *(Chemical Recycling through Electrodialysis Treatment)* aims to scale up electrodialysis technology based on bipolar membranes. The technology would enable the recycling of sodium sulphate in hydrometallurgical processes by converting it to sodium hydroxide and sulphuric acid.

The amount of sodium sulphate generated in mines and mineral processes is predicted to grow considerably in the future, as chemicals are produced for lithium-ion batteries used in energy storage and electric vehicles. The regulations for the release of sodium sulphate to the environment will also likely be tightened.

The aim of bipolar electrodialysis (BPED) technology scale-up is more efficient recycling of process chemicals and less waste and discharge from processes in general. Upscaling also provides new innovation and business opportunities for industry in Europe, as electrodialysis technology opens up wider possibilities compared to existing state-of-the-art technologies utilising evaporation and crystallisation.

PREPARATIONS FOR THE BATTERY VALUE CHAIN INVESTMENTS COMMENCED

The growth expectations for lithium-ion battery demand in Europe increased further during the year. Both battery manufacturing and production of related materials are necessary to meet the demand.

INCREASING amounts of new fully electric and plug-in hybrid cars are being launched onto the European market. In 2019, 35 new models were introduced to the market, and the corresponding number is expected to be more than 80 in 2020. European car manufacturers also continued to make significant investments in adapting their production lines for electric car production.

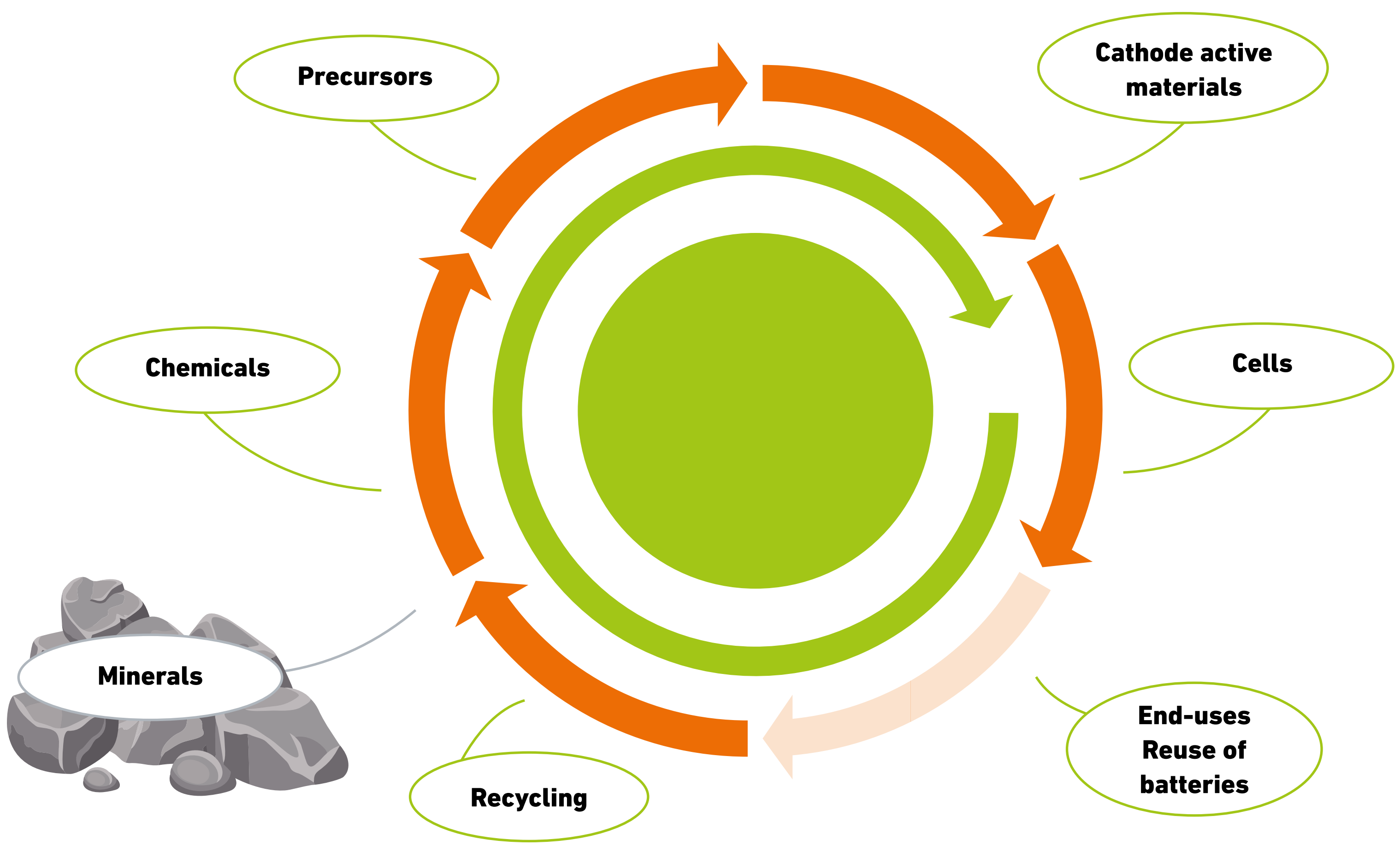
A leading car manufacturer, Volkswagen, acquired a 20% holding in Swedish battery start-up Northvolt, along with announcing its plans to invest strongly in its own battery cell production in Saltzgitter, Germany. In late 2019, Tesla announced that its Gigafactory in Europe will be constructed near Berlin.

Global battery manufacturers are racing to announce the increase of battery production capacities in Europe in order to meet the needs of cars and other applications. The cumulative capacity of the projects announced by the end of 2019 will exceed an annual production of 300 gigawatt hours (GWh) by 2028 (Source: Benchmark Minerals, 2019). A significant amount of cathode material is needed to support battery cell production, however, investment activity in cathode material production is still limited in Europe.

Negotiations at different stages of the value chain

In line with its strategy, Finnish Minerals Group is looking for technology partners for industrial investments in precursors and cathode active materials, battery cell production, and recycling solutions. Discussions with the leading operators of the value chain took place during 2019. Competition for battery industry investments between European countries continues to be fierce, with Eastern European countries such as Poland, Hungary and eastern Germany in particular having succeeded in attracting investments.

Despite the intense competition, our co-investment strategy has been positively received, and especially our negotiations regarding the intermediates proceeded well. Several other active discussions were also initiated during the year, relating to e.g. new battery cell manufacturing and recycling technologies. Collectively, the investments are of national importance, amounting to approximately EUR 1.5 billion.



The battery value chain extends from minerals all the way to the reuse of batteries and materials recycling.

European countries are competing for battery industry investments.

Valuable information from a site study

In the spring of 2019, we commissioned a pre-study concerning the placement of the potential precursor and cathode active material plants, in which 12 locations were examined to identify those best suited for production operations. Towards the end of the year, we were preparing for the launch of the environmental impact assessment (EIA) procedure. Our intention is to proceed with the project as soons as the investment decision has been made.

The leading operators of the global battery value chain are mainly from Asia. To strengthen our presence in the Asian market, we complemented our team at the end of the year with a Senior Project Advisor, who is based in Shanghai.

Battery glossary

Anode – a component of a battery; one of the two electrodes.

Electrolyte – a component of a battery; a chemical medium between the anode and cathode.

Energy density – a measurement unit indicating energy available from a battery per its weight or volume.

Gigafactory – a battery cell plant with a large production capacity, e.g. at least 1 GWh.

Cathode active material (CAM) – a powdery end-product used in cathode manufacturing at cell plants.

Cathode – a component of a battery; one of the two electrodes.

Cell – a single battery cell, the components of which are the anode, cathode, separator and electrolyte.

Module – a battery unit consisting of multiple cells.

NMC 811 – a cathode material with 8 parts nickel, 1 part manganese and 1 part cobalt.

Pack – the final shape of a battery system, composed of modules.

Precursor (pCAM) – a component of the cathode material.

Separator – a component of a battery; a membrane placed between the anode and cathode.

BATTERY VALUE CHAIN POWERS SUSTAINABLE DEVELOPMENT

Batteries and the development of the battery value chain offer significant opportunities globally to combat climate change, create new jobs and raise the living standards of the poorest people.

THE sustainable battery value chain based on the circular economy will be a key way of reducing greenhouse gas (GHG) emissions from transport and energy production. With improved battery technology, the car industry can shift from producing internal combustion engine (ICE) cars to electric car production, which will help reduce emissions from transport. Batteries also support the energy transition towards renewable sources, away from an energy system based on fossil fuels.

Value chain generates high-tech jobs

Development of the battery industry has taken off rapidly in Asia, especially in China. The European Commission views building a battery value chain in Europe as an important part of strengthening the industrial competitiveness. For example, the value chain creates new high-tech jobs and additional economic value to continents, countries, communities or companies that are willing to seize the opportunity.

In the meantime, hundreds of millions of people in the world still lack access to electricity – mostly in Sub-Saharan Africa. According to the World Economic Forum, using battery technology to bring energy to people without access to electricity today can increase productivity, improve livelihoods and improve health on a large scale.

Sustainable development requires comprehensive co-operation

Comprehensive co-operation is needed to harness the battery value chain's full potential to power sustainable development. At European level, efforts towards this goal have been made by the European Battery Alliance and the European Commission. The Finnish Minerals Group and Business Finland are among those participating in building a business ecosystem for the battery industry in Finland; the latter through its Batteries from Finland project.

Making the major transition described in the vision and plans requires support from investors and financiers, investments, studies and development steps from the industry as well as active participation from policy-makers. The common goals should include reducing GHG emissions, establishing a circular economy industry parallel to primary raw materials production, and ensuring product safety throughout the value chain.

Sustainably built circular battery value chain promotes the UN SDGs.

Read more:

Global Battery Alliance and World Economic Forum: A Vision for a Sustainabl Battery Value Chain in 2030.

Unlocking the Full Potential to Power Sustainable Development and Climate Change Mitigation.

1 Poverty is often linked to lack of infrastructure. Battery technology will enable electricity to be brought to populations located away from the electricity grid and lacking access.

2 Access to electricity increases income levels and living standards in the communities. This will help avert hunger.

7 Batteries can be utilised together with renewable energy. This way the carbon footprint of energy production and storage is lower compared to fossil fuels.

8 A sustainably built battery value chain creates high-skilled and high-tech jobs with high standards for work safety and occupational health.

9 Close co-operation across many sectors is needed to build the battery value chain. Technological innovations enable a better link between the products and the circular economy.

11 Safe and healthy conditions in cities can be improved by shifting from fossil fuel-powered cars to electric cars, enabling the reduction of GHG emissions and fine particles.

12 People's consumption habits can be influenced by offering products that are more sustainable, such as electric cars with lithium-ion batteries.

13 The carbon dioxide emitted from transport can be reduced by switching from fossil fuel-powered cars to electric cars. As an action to mitigate climate change, the impact of the switch is in proportion to the share of renewable, zero-emission energy used in the production of batteries and the electricity used to power them.

17 Extensive cooperation is needed at local and global levels to make the battery value chain technically possible. The value chain also brings the transport and power sectors together like never before, which will help in the reduction of carbon dioxide emissions.

THE RESPONSIBILITY PROGRAMME PROVIDES A PATH FOR DEVELOPMENT

A responsibility policy and programme were drawn up in 2019. The Sustainability Committee, set up in the summer by the company's Board, actively supported the work.

EARLY 2019 saw the preparation of a responsibility policy at Finnish Minerals Group. While preparing the policy, we also identified themes to maximise our positive impact on the future development of the Finnish society while supporting European welfare.

The preparation of the policy, which is intended to serve as general guidance, expanded to drawing up a responsibility programme for guiding us on the path towards the target state. The programme also provides support in the prioritisation and follow-up of our responsibility work, as well as for communications and reporting.

Valuable information from the stakeholder survey

Putting together the responsibility programme started with reflecting on the current state and setting a target state based on where we want to be in five years. The current state was discussed from the viewpoint of what goes on inside the company, as well as in relation to the portfolio companies and our business environment.

At the beginning of the autumn, a survey was conducted to map our stakeholders' expectations for responsibility. According to the results, Finnish Minerals Group is expected to be a long-term owner in the mining and battery industry and participate in building a battery value chain in Europe. The priorities raised with respect to Finnish Minerals Group and our portfolio companies were the minimisation of environmental impact and ensuring the profitability of business.

Also, as part of the survey, the stakeholders were asked to share any ideas on how Finnish Minerals Group could best serve as a trailblazer for responsibility in the mining and battery industry. We received nearly a hundred proposals concerning Finnish Minerals Group as an owner, the responsibility of our portfolio companies, as well as our partnerships and co-operation.

Aiming for responsible growth

Our target state for 2024 is to become a forerunner in creating sustainable growth for the Finnish battery value chain and mining industry. As stated in our responsibility themes, our focus is on social impact, developing a responsible value chain, as well as responsibility for the environment and climate.

The most responsible thing to do is to create a sustainable strategy.

Comment from the 2019 stakeholder survey

Building a sustainable battery value chain starts with minerals. Photo by Keliber.

RESPONSIBILITY PROGRAMME 2020–2024

The goals and indicators of the Responsibility Programme from 2020 to 2024 are based on three themes.

1. Social impact

New high-tech jobs to Finland.
INDICATOR: More than 1 000 new jobs directly and thousands indirectly from decisions to invest in the battery value chain.

Economic value added from raising the degree of processing raw materials.
INDICATOR: EUR 1.5 billion increase in GDP from decisions to investment in the battery value chain.

Channelling expertise to the development of responsibility in the mining and battery industry.
INDICATOR: Upward development curve or continuous good feedback from the corporate image research results on expertise.

2. A Sustainable value chain

Responsible actions throughout the value chain and in partnerships.
INDICATOR: Sustainable development goals have been set by Finnish Minerals Group, the portfolio companies and main partners, and the companies agree with generally accepted statements.

Structured stakeholder work and dialogue to strengthen acceptability.
INDICATOR: Upward development curve or continuous good feedback in the corporate image research results on stakeholder work.

3. Responsibility for the environment and climate

Initiatives to minimise environmental impact and promote the circular economy.
INDICATOR: The Boards of portfolio companies annually approve strategic development plans concerning environmental impact and the circular economy.

Support for the Paris Agreement and achieving a carbon neutral Finland by 2035.
INDICATOR: The Boards of portfolio companies annually approve strategic development plans for the reduction of carbon dioxide emissions.

AIMING FOR SUSTAINABLE GROWTH

Electrification of traffic and the increased need for energy storage offer new opportunities for Finland as well.

Social impact

NEW INDUSTRY WITH HIGH ADDED VALUE

THE Finnish mining and battery cluster is currently composed of mines, metals processing companies, mining technology suppliers and services providers, as well as universities and research institutes. However, raising the degree of raw materials processing in the battery value chain offers opportunities for achieving even more economic benefits and know-how.

In spring 2019, Finnish Minerals Group commissioned a report on the new, potential economic impact of the Finnish battery value chain. The focus was on the core of the value chain, i.e. the precursors, cathode active materials and battery cells needed in the manufacture of battery packs, which we in Finland do not yet have on an industrial scale.

The concrete indicators of social impact selected for the company's responsibility programme were the labour needs created by the new plants and the gross domestic product (GDP). In addition to the information gained from the report, the added value of Terrafame's battery chemicals plant under construction was also incorporated to an indicator. The commissioning of the plant will take place in the beginning of 2021, when Terrafame will start producing nickel and cobalt sulphates.

The operations of the new plants aimed to be constructed and commissioned were estimated to create more than 1 000 new jobs directly and thousands indirectly in the coming years. The GDP was estimated to increase by EUR 1.5 billion. In addition to the impact during operation, economic impact is created during construction.

In the coming years, the goal is to start up plants that produce battery chemicals, precursors, cathode active material and battery cells. Photo from Terrafame.

In 2019, we started EIA preparations for two new plants.

Sustainable value chain

TAKING A CLOSER LOOK AT THE RISKS AND OPPORTUNITIES

ONE of our main themes is the continuous improvement of responsibility throughout the value chain and in partnerships. As an owner, we strive to ensure that our portfolio companies analyse their risks and opportunities and develop operations responsibly and systematically.

In 2019, there were three companies in different stages in our investment portfolio. Terrafame Oy has stabilised its operations and it has a certified management system that covers quality, the environment, and occupational health and safety.

The Finnish subsidiary of Sotkamo Silver AB started mining operations in Sotkamo in spring 2019. Over the year, the company has developed its operations and management system to make them comply with the requirements. Keliber Oy's project, which is in the preparation stage, consists of mines planned in the Central Ostrobothnia region and a production plant planned in Kokkola. During 2019, Finnish Minerals Group completed technical evaluations on the production processes of both companies.

As a new company, we also want to develop the way we operate. In 2020, we will take a closer look at responsibility by means of self-assessments and continue our work in the spirit of continuous improvement. We are aware that responsibility not only applies to environmental issues; it also covers e.g. organisational governance, business finances, the supply chain, labour practices and community involvement.

Responsibility for the environment and climate

MINIMISING THE IMPACT ON NATURE REQUIRES STRATEGIC PLANNING

FINNISH MINERALS GROUP is well placed to propose initiatives for the minimisation of the environmental impact of the mining and battery industry and the promotion the circular economy. Through our work, we are also able to support the Paris Agreement and achieving the target of a carbon neutral Finland by 2035.

Our company does not have own industrial operations, but there are three mining sector companies in our investment portfolio, of which Terrafame has already started a move ahead in the value chain to become a producer of battery chemicals. In the next few years, our goal is to invest in the battery value chain's other plant projects as well.

Through our portfolio companies, we want to contribute to the adoption of systematic and long-term approaches for managing environmental affairs by Finnish mining and battery industry companies. We believe that setting a good example also encourages other companies to set the bar higher.

The objective is for our portfolio companies to draw up strategic plans to improve the recovery of raw materials, promote the circular economy, enhance chemical efficiency, and reduce waste and emissions. We can also support the efforts to combat climate change by requiring a systematic approach to improving energy efficiency and reducing the use of fossil fuels.

A MULTI-LEVEL APPROACH TO STAKEHOLDER ENGAGEMENT

Engaging stakeholders was boosted by EU objectives, the parliamentary elections and the building of a sustainability programme.

THE VALUE chain of lithium-ion batteries offers new opportunities for industry development in Finland. During the winter and spring of 2019, before the parliamentary elections, we met with the parties, trade unions and employer associations to tell them about the market outlook for electric cars and batteries and to expand on Finland's competitive tools in relation to other European countries. The discussions that ensued were highly motivational for us.

In the winter, we commissioned Taloustutkimus Oy, a market research company, to investigate Finnish people's views on the battery value chain. 80 per cent of the respondents fully or to some extent agreed that industry related to the manufacture of electric vehicle batteries can offer good new business opportunities for Finland and Finnish companies.

Later in the spring, the feelings of the public in Finland were affirmed by a study in which Ramboll Finland Oy examined the employment effects, total income, value added and accrued tax revenue of a potential investment of EUR 1.5 billion. For example, when operational, the annual employment impact of the precursor, cathode active material and battery cell plants would be around 9,100 person-years. Correspondingly, around EUR 500 million in tax revenues could be generated annually.

Examination of potential locations

In the spring, we also started examining which locations in Finland would be best suited for the precursor and cathode active material plants. We toured various localities and met with the local authorities and ELY Centres. The meetings involved going through the potential environmental impact, as well as the requirements for the placement of plants.

The competition in Europe is fierce in battery value chain-related industries, and the next few years will determine the locations of new plants. Countries and municipalities can stand out positively in the competition by being quick and careful with their preparations.

Co-operating at the European level

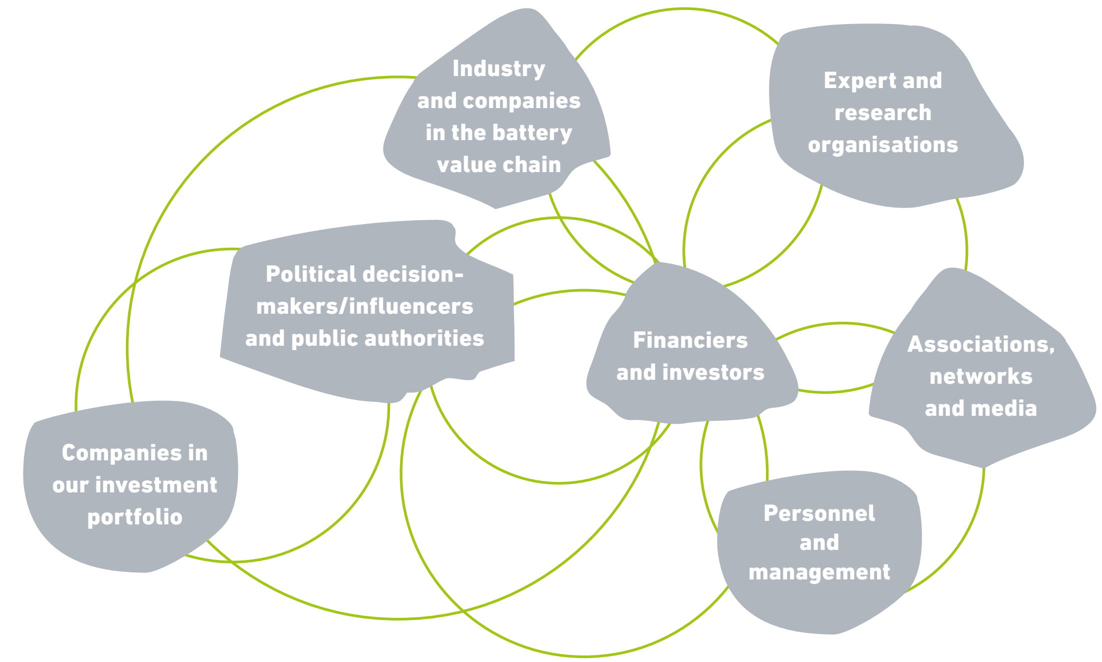
The European Commission has already drawn attention to the fact that not enough batteries and materials used in batteries are produced on our continent. However, there is a significant amount of car industry in the EU that is seeking to modernise and reduce CO2 emissions from transport by shifting from internal combustion engine (ICE) cars to electric car production.

Our close co-operation in the European Battery Alliance continued in 2019, with the aim of creating a competitive, sustainable value chain for battery production in Europe. The cluster includes representatives from industry, EU Member States, the European Investment Bank and the European Commission. In late 2019, the European Commission made a decision on state aid for Important Projects of Common European Interest (IPCEI), linking Finnish Minerals Group, Terrafame and Keliber more closely than before to the development of a European battery value chain.

During the year, we also partnered with EIT RawMaterials (the European Institute of Innovation and Technology), which is the world's largest innovation community focusing on the use of raw materials and the circular economy.

Useful information from the stakeholder survey

In late summer, we conducted our own stakeholder survey to identify the views and expectations of various groups related to our work both in Finland and abroad. We received a representative amount of feedback, which was used especially in the building of our sustainability programme.



We have stakeholders in both Finland and abroad.

Key events in 2019

Q1

Jan 28–29
Future Mine and Mineral
Stockholm, Sweden

Feb 5–6
EU Industry Days
Brussels, Belgium

Feb 24–March 7
BMO Global Metals & Mining Conference
Hollywood, FL, USA

Q2

May 7
Jymy goes Helsinki private event
Helsinki, Finland

May 27–29
Mines and Technology
Helsinki, Finland

June 5–7
Kaivosseminaari19
Vuokatti, Finland

June 12
Kick-off Seminar for the Southwest Finland Battery Ecosystem
Salo, Finland

Q3

Aug 29–30
SHIFT Business Festival
Turku, Finland

Sept 4–5
Future of Mining EMEA
London, UK

Sept 26
European Battery Alliance – 4th High Level Meeting
Brussels, Belgium

Sept 26–27
Battery Materials Europe
Amsterdam, The Netherlands

Q4

Oct 7–9 4th
Expert Forum on Sustainable Materials for Future Mobility
Turin, Italy

Oct 27–Nov 1
London Metal Exchange (LME Week)
London, UK

Oct 29–31
Fennoscandian Exploration and Mining Conference
Levi, Finland

Nov 9–14
Kokkola Material Week
Kokkola, Finland

Dec 5
Supporting a Competitive and Sustainable Battery Value-chain in the EU
Brussels, Belgium

PERSONNEL DEVELOPMENT MARKED BY EXPANSION

The expansion of operations, HR development and organisational improvements continued in 2019. The abilities needed to maintain working capacity were also promoted.

2019, Finnish Minerals Group recruited a development engineer and business controller, as well as a sustainability and communications manager. The development of corporate responsibility included, for example, drawing up a code of ethics for the company. In late 2019, we used a staff leasing company to hire a new employee, based in Shanghai, to coordinate in the Asian market the work related to the development of a Finnish battery value chain.

At the end of the year, the total number of employees was 15, with one person working on a fixed-term contract and one being a leased employee. The company directly employed an average of 12.7 people during the year.

The average age of employees was 41 years, and the age distribution was fairly balanced.

We encourage professional development

In our company, we want to encourage and support educational opportunities, the development of professional competence, the maintenance of working capacity as well as stress management. In total, our personnel spent 42 days in training over the course of the year. In addition, one of our employees spent October–November on a secondment in another company.

In the spring, URSUS coaching was organized for the entire staff. It aims to improve stress management skills and resilience, i.e. mental performance in situations that require making decisions and taking action under pressure.

Aiming for a healthy and safe workplace

Our personnel has access to an extensive and versatile range of occupational health care services. A workplace survey was carried out with our occupational health nurse, and an action plan was drawn up for the calendar year. The plan and the related wishes and needs will be updated as needed. In late 2019, an election was carried out to appoint a safety delegate and two deputies, who are tasked with promoting safety and health at work.

A performance-based bonus system was applied to all of the company's personnel in 2019. As part of the system, we implemented a survey on internal co-operation and compliance with our values, giving everyone an opportunity to assess their colleagues. Each employee also got to go through the survey results with their supervisor in connection with their development discussion.

Already a tradition, stakeholders were invited to watch Finnish baseball at Sotkamon Jymy's opening game at the Telia 5G Arena. Other events organised during the year included two less-formal employee events. In addition to a meal allowance, the company also offered sports and culture vouchers to its employees.

Development Manager Kaisa Kiipula talks about her work

I BECAME acquainted with Finnish Minerals Group's predecessor, Terrafame Group, at the beginning of 2016 through a thesis project commissioned by the company. I started working for the company in autumn 2016, right after graduating from Aalto University. Starting in my first full-time job was naturally very exciting for me, a young engineer who had just completed a degree, especially when the work was in a field that was not fully familiar to me, albeit close to what I had studied.

I feel lucky that I happened to contact CTO Jani Kiuru, of all people, when I was looking for an opportunity to write my thesis, because my experience with Finnish Minerals Group has been exceptionally diverse and educational. Our small and compact team has been very encouraging from day one.

My role has included changing and varied tasks. In the past three years, I have seen the company's name change and its operations expand, and several new members have joined our original team of five people. My role has also changed from a research scientist to a development manager. Among other tasks, my job includes the preparation of a wide range of project applications, the coordination of ongoing projects and various project management tasks.

In the past 3 to 4 years, the mining industry – and the battery industry in particular – has been playing an ever-increasing role. With this in mind, the importance of co-operation both between Finnish companies and at European level has become more pronounced. The same trend can also be seen in what I do. There is increasing emphasis on various joint ventures and participation in relevant networks.

PERSONNEL KEY FIGURES 2019

14

At the end of 2019, 14 people worked directly for Finnish Minerals Group. From the beginning of December, the company also employed one person through a staff leasing company.

12,7 on average

During the year, the company directly employed an average of 12.7 people.

41

The average age of employees was 41 years.

93%

93% of the employees worked on a permanent contract and 7% on a fixed-term contract.

8 6

42 training days

The employees spent a total of 42 days in training during the year.

TAX CONTRIBUTION OF GROUP COMPANIES

The Finnish Minerals Group companies report on the management of tax matters and publish an itemisation of taxes paid to Finland. The report is based on the guidance on tax reporting issued by the Government Ownership Steering Department. The Group companies only operate in Finland and do not pay taxes in other countries.

THE Finnish Minerals Group companies view tax contribution and systematically preparing for tax consequences as part of the operational and administrative accountability requirements. The Group companies and their personnel are committed to complying with the regulations and laws, including tax legislation. The Group companies are also committed to implementing corporate social responsibility in accordance with the state ownership policy and the responsibility programme of Finnish Minerals Group.

The Finnish Minerals Group companies pay and report taxes in a timely manner and aim to resolve any significant tax issues in advance in cooperation with the tax authorities. The goal is to minimise tax-related uncertainties and to respond promptly to any regulatory changes. In addition, the Group companies ensure the professional competence of personnel who deal with tax issues and, if necessary, use the best possible external expertise to supplement their personnel's know-how.

Organisation and management of tax matters

The division of responsibilities in tax matters complies with Finnish company legislation. The most important tax-related matters are dealt with by the Boards of Directors of Finnish Minerals Group companies.

The CEO of Finnish Minerals Group and the CEO of Terrafame are responsible for the organisation of tax matters in their respective companies. In 2019, the Finnish Minerals Group companies engaged external experts in the management of tax matters and focused on active cooperation with the Tax Administration of Finland.

The operations and administration are guided by principles and policies that emphasise responsibility. The Group companies do not plan their operations with the aim of gaining tax benefits, and they have no operations or assets abroad. The aim is to investigate the tax consequences of crucial business decisions in advance and operate in an economically justified manner, provided that the practices are acceptable from the perspective of taxation.

Reporting principles

Tax reporting is based on financial statements and accounting documents drawn up in accordance with the Finnish Accounting Act. The reported taxes are based on account-specific and voucher-specific accounting. Taxes are reported in thousands of euros.

Excluded from the tax contribution report are mandatory insurance premiums that are included in salary costs. Due to their nature, these insurance premiums are dealt with as direct salary costs. The Group companies also do not report small amounts of value-added tax included in foreign travel and training costs in the tax contribution report.

Itemisation of taxes paid by Finnish Minerals Group and Terrafame

So far in their years of operation, Terrafame and Finnish Minerals Group have accumulated losses that are deductible for tax purposes. For this reason, the companies do not yet have any taxable income. However, a considerable amount of other tax expenses have accumulated due to the energy and fuel taxes related to the companies' operations. Furthermore, the companies have paid the usual taxes related to the acquisition and ownership of assets.

On 31 December 2019, the Group companies had unrecognised deferred tax assets of approximately EUR 32.2 million, which consisted of the estimated taxable income for the financial year 2019 (tax liability of EUR 2.0 million), the taxable income for the financial year 2018 (tax liability of EUR 3.3 million), the taxable income for the financial year 2017 (tax liability of EUR 0.5 million), the confirmed loss for the financial year 2016 (tax receivable of EUR -20.9 million), and the confirmed loss for the financial year 2015 (tax receivable of EUR -17.1 million).

2019 EUR 1,000	Suomen Malmijalostus Oy	Terrafame Oy	Finnish Battery Chemicals Oy	Group total
Taxes paid				
Direct taxes paid	**15**	**829**	**0**	**844**
Income taxes	0	0	0	0
Asset transfer taxes	0	0	0	0
Property tax	0	454	0	454
Employer's social security contributions	9	257	0	266
Parafiscal charges	6	118	0	124
Indirect taxes paid	**0**	**5,597**	**0**	**5,597**
Electricity taxes, net	0	576	0	576
Electricity taxes	0	2,819	0	2,819
Electricity taxes, return	0	-2,243	0	-2,243
Insurance premium tax	0	465	0	465
Fuel taxes, net	0	4,553	0	4,553
Fuel taxes	0	5,298	0	5,298
Fuel taxes, return	0	-745	0	-745
Waste tax	0	3	0	3
Taxes collected and accounted for	**413**	**18,175**	**-35**	**18,553**
Tax withheld in advance	404	7,798	0	8,202
Value-added tax, net	9	10,377	-35	10,351
Value-added tax, sales	127	85,072	0	85,199
Value-added tax, purchases	-118	-74,695	-35	-74,848
Total	**428**	**24,601**	**-35**	**24,994**
Ratio of tax payments to net sales	69,14%	7,93%	0,00%	8,04%

2018 EUR 1,000	Suomen Malmijalostus Oy	Terrafame Oy	Group total
Taxes paid			
Direct taxes paid	**323**	**921**	**1,244**
Income taxes, net loss made during period	0	0	0
Asset transfer taxes	316	43	359
Property taxes	0	454	454
Employer's social security contributions	5	277	282
Parafiscal charges	2	146	148
Indirect taxes paid	**0**	**4,919**	**4,919**
Electricity taxes, net	0	314	314
Electricity taxes	0	2,606	2,606
Electricity taxes, return	0	-2,292	-2,292
Insurance premium tax	0	316	316
Fuel taxes, net	0	4,282	4,282
Fuel taxes	0	4,978	4,978
Fuel taxes, return	0	-696	-696
Waste tax	0	7	7
Taxes collected and accounted for	**26**	**14,340**	**14,366**
Tax withheld in advance	-211	7,649	7,438
Value-added tax, net	147	6,691	6,838
Value-added tax, sales	-358	78,299	77,941
Value-added tax, purchases	237	-71,607	-71,370
Total	**349**	**20,180**	**20,529**
Ratio of tax payments to net sales	157,21%	6,19%	6,30%

GOVERNANCE DEVELOPMENT CONTINUED BUILDING ON ESTABLISHED OPERATIONS

The company's corporate governance was developed by expanding the Board of Directors and setting up two committees to support the Board in its work.

CORPORATE governance and decision-making in Finnish Minerals Group are guided by the Articles of Association, the Limited Liability Companies Act and other legislation in force, the Government Resolution on State Ownership Policy, and the policies and guidelines decided by the company's Board of Directors.

The highest decision-making body in the company is the Annual General Meeting. The Annual General Meeting 2019 was held on 28 March, in addition to which one Extraordinary General Meeting was held.

The Extraordinary General Meeting decided on a share issue to the state-owner, with a total subscription price of 22.5 million euros, by virtue of the investment commitment issued to the company by the state-owner in 2017.

Seven Board members

Finnish Minerals Group's Board of Directors is responsible for managing the company and for the appropriate organisation of its operations. The number of Board members shall be at least three and not more than seven. The term of office for Board members is one year, and it expires at the close of the next Annual General Meeting following the election of the Board.

For the year 2019, the Chair of the Board was Janne Känkänen and Board members were Antti Kummu (vice chairman), Juha Majanen, Minna Pajumaa and Eeva Ruokonen. At the Annual General Meeting, Teija Kankaanpää and Ilpo Korhonen were elected to join the Board as new members.

The Board of Directors has adopted written rules of procedure, in which the main tasks and operating principles of the Board and its committees have been recorded. The Board of Directors had 13 meetings in 2019.

In June, the company's Board of Directors established two Board committees: the Sustainability Committee and the Personnel and Remuneration Committee. The Board committees assist the Board in decision-making by preparing the matters subject to consideration by the Board as allocated to the committees. The committees do not have the power to make decisions independently.

The members of the Personnel and Remuneration Committee in 2019 were Board members Janne Känkänen (Chair), Ilpo Korhonen, Antti Kummu and Minna Pajumaa, and the committee had one meeting. The members of the Sustainability Committee in 2019 were Board members Eeva Ruokonen (Chair), Teija Kankaanpää and Juha Majanen, and the committee had two meetings. The Sustainability Committee was set up for a fixed term of office that lasts until the Annual General Meeting of 2020.

In 2019, Finnish Minerals Group established a subsidiary to prepare for the battery value chain business activities.

2019 BOARD OF DIRECTORS KEY FIGURES

7	53	3 4
Number of Board members at year-end	Average age	

Executive Team assists the CEO

The Chief Executive Officer (CEO) is responsible for the company's operational management in accordance with the Limited Liability Companies Act and other legal provisions, as well as the guidelines and regulations issued by the Board of Directors. The CEO is appointed and dismissed by the Board of Directors, which also decides the terms of service for this post. Matti Hietanen has been the CEO of the company since 1 September 2015.

The company has an executive team, which assists the CEO with managing and developing the company's overall operations. It also prepares matters for consideration by the Board of Directors. The Executive Team comprised CEO Matti Hietanen, Chief Technology Officer Jani Kiuru, SVP of Battery Operations Vesa Koivisto, Investment Director Timo Kärkkäinen, and General Counsel Maria Neovius. The Executive Team met regularly.

Other management remains unchanged

The Board of Directors and CEO are responsible for the arrangement of internal control, risk management and internal auditing. The Board of Directors has confirmed the principles of risk management and the policy for organising related party governance and dealing with related party transactions that everyone at the company shall adhere to.

The company's auditor was KPMG Oy Ab, on behalf of which APA Antti Kääriäinen acted as the principal auditor.

Establishment of Finnish Battery Chemicals Oy

Finnish Battery Chemicals Oy, a wholly-owned subsidiary established by Finnish Minerals Group, was entered into the Trade Register in May 2019. Its task is to act as the formal implementer of the preparatory actions relating to the battery business.

In 2019, Finnish Battery Chemicals Oy acted as the commissioning party in a location study relating to the battery value chain project, a feasibility study, and the preparations for the EIA procedure. The company's sole Board member was Matti Hietanen, CEO of Finnish Minerals Group, with Vesa Koivisto, SVP of Battery Operations, as the deputy member. Finnish Battery Chemicals Oy did not have its own personnel.

The operations of Finnish Battery Chemicals Oy are governed by the guidelines and policies confirmed by Finnish Minerals Group in full, as if the operations of Finnish Battery Chemicals Oy were part of the operations of Finnish Minerals Group.

REMUNERATION WAS BASED ON SALARIES AND PERFORMANCE BONUSES

A personnel and remuneration committee was established to support the development of remuneration.

THE remuneration of executives and personnel at Finnish Minerals Group is governed by the Government Resolution on State Ownership Steering Policy. The company's Board decides on remuneration and monitors the achievement of targets. The state ownership requires that remuneration is reasonable and fair.

The basics of the performance-based bonus system for executives and personnel in 2019 covered the company's business objectives, the implementation of the mission as a special-purpose company, responsibility and personal targets.

In June 2019, the Board established a personnel and remuneration committee which, among other duties, is tasked with the preparations for the decision-making concerning the remuneration of the CEO and personnel and monitoring the functioning of the remuneration system.

Remuneration is used by the Board as a corporate governance tool.

The bonus system supports the achievement of objectives

The salaries of the CEO, other executives and personnel in 2019 were based on a fixed monthly salary. A performance-based bonus system was in use as well.

In total, the company paid EUR 1.150,894 in salaries and fees in 2019 (2018: EUR 681,834). Compared to the previous year, the number of person-years also increased significantly with the expansion of operations.

The salary and fees paid to the CEO in 2019 totalled EUR 182,136 (2018: EUR 182,136). In addition, the performance bonus for 2018 was EUR 27,320. The maximum performance bonus for the CEO is 30 percent of their annual salary.

The total salaries and fees paid to members of the Executive Team other than the CEO amounted to EUR 458,686 (Sept–Dec/2018: EUR 136,959), of which the performance bonuses paid in September–December 2018 accounted for EUR 22,366. The maximum performance bonus for Executive Team members is 30 percent of their annual salary.

The amount of performance bonus paid to the company's other personnel totalled EUR 23,260 (2018: EUR 20,000). In this group, the maximum performance bonus was between 20% and 30% of the recipient's annual salary, depending on the job requirement level.

Board fees paid monthly and per meeting

The Board of Directors fees were paid in cash as monthly fees and meeting fees. No other remuneration system or pension scheme was in place for the company's Board members. The Board fees paid in 2019 totalled EUR 111,550 (2018: EUR 71,300). Of this, the Chair of the Board's fees accounted for EUR 24,500 (2018: EUR 31,500).

In 2019, the Board was strengthened with the addition of two new members. The fees were decided at the general meeting.

No separate compensation from subsidiaries

The personnel of Finnish Minerals Group were not compensated for being on the Boards of the company's subsidiaries. This means that the Board member and debuty member did not receive separate compensation for being on the Board of the fully owned Finnish Battery Chemicals. The subsidiary did not have personnel during 2019.

Correspondingly, separate compensation was not paid to the CEO of Finnish Minerals Group, Matti Hietanen, for acting as the Vice Chair of the Board of subsidiary Terrafame Oy.

The State of Finland as an owner requires that remuneration is reasonable and fair.

BOARD OF DIRECTORS

JANNE KÄNKÄNEN
Chairman of the Board
M.Soc.Sc
b. 1967

TEIJA KANKAANPÄÄ
M.Sc. (Tech.)
b. 1964

ILPO KORHONEN
B.Sc. (Eng.), eMBA
b. 1964

ANTTI KUMMU
Vice Chairman of the Board
M.Sc. (Econ.), CFA
b. 1976

JUHA MAJANEN
LL.M
b. 1967

MINNA PAJUMAA
M.Sc. (Econ.), CEFA
b. 1963

EEVA RUOKONEN
Lic.Sc. (Tech.), MBE (diploma)
b. 1960


Janne Känkänen


Teija Kankaanpää


Ilpo Korhonen


Antti Kummu


Juha Majanen


Minna Pajumaa


Eeva Ruokonen

PERSONNEL

MATTI HIETANEN*
CEO
LL.M (trained on the bench), M.Sc. (Econ.), b. 1977

SINI ESKONNIEMI
R&D Manager, M.Sc. (Tech.), b. 1984

ROBERT GUSTAFSSON
Investment Associate, B.Soc.Sc., b. 1989

KATRI KAUPPILA
Sustainability and Communications Manager
M.Soc.Sc., b. 1965

KAISA KIIPULA
Development Manager
M.Sc. (Tech.), b. 1990

JANI KIURU*
Chief Technology Officer
Doc.Sc. (Tech.), b. 1975

VESA KOIVISTO*
SVP, Battery Operations,
M.Sc. (Tech.), MBA, b. 1966

TIMO KÄRKKÄINEN*
Investment Director, M.Sc. (Econ.), b. 1963

MARIA NEOVIUS*
General Counsel, LL.M, b. 1972

RONJA RUISMÄKI
Development Engineer, M.Sc. (Tech.), b. 1993

VILHELMIINA RUOHONEN
Executive Assistant, M.Hosp.Man., b. 1980

PIRITTA SALONEN
Senior Technology Manager
M.Sc. (Tech.), b. 1974

MERJA TAKALA
Business Controller
M.Sc. (Economics), b. 1979

EMIL VIITALA
Legal Counsel, LL.M, b. 1986

MINYUE ZHU
Senior Project Advisor, MA, b. 1989

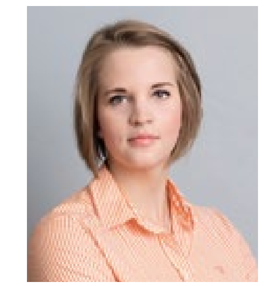
* Member of Management Team


Matti Hietanen


Sini Eskonniemi

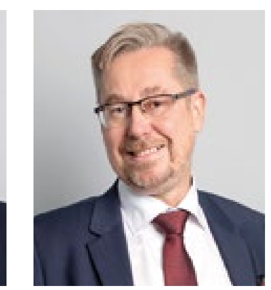

Robert Gustafsson


Katri Kauppila


Kaisa Kiipula


Jani Kiuru


Vesa Koivisto


Timo Kärkkäinen


Maria Neovius


Ronja Ruismäki


Vilhelmiina Ruohonen


Piritta Salonen


Merja Takala


Emil Viitala


Minyue Zhu

ANNUAL ACCOUNTS
1.1.2019–31.12.2019

GROUP, IFRS

PARENT COMPANY, FAS

REPORT FOR THE FINANCIAL PERIOD 1 JANUARY – 31 DECEMBER 2019

Significant events during the financial period

Suomen Malmijalostus Oy (auxiliary business name Finnish Minerals Group) is a state-owned special-purpose company, tasked with developing the Finnish battery and mining industry. The current mandate and name were given to the company in June 2018, so the year 2019 was the company's first full year of operation under its current mandate.

The portfolio companies of Finnish Minerals Group on 31 December 2019 were the subsidiary Terrafame Oy (shareholding of 71.8%), Keliber Oy (shareholding of 24.3%), and Sotkamo Silver AB (shareholding of 2.0%). The company also had a subsidiary, Finnish Battery Chemicals Oy (shareholding 100%), which operates as a project company.

Finnish Minerals Group, Terrafame and Finnish Battery Chemicals are the companies forming Finnish Minerals Group companies ("Group companies").

Operations of Finnish Minerals Group

Finnish Minerals Group's mission is to responsibly maximise the value of Finnish minerals. The company has three business areas, which are: 1) investing and ownership in the mining sector, including the duties as Terrafame's parent company; 2) R&D and technologies for the exploitation of minerals; and 3) building a battery value chain in Finland.

Operations as a parent company and owner

The subsidiary Terrafame Oy is the main asset of Finnish Minerals Group, which is why the company is presented more extensively in the parent company's report for the financial year than the other portfolio companies. Terrafame produces nickel, zinc, cobalt, and copper at its mine and metals production plant located in Sotkamo, Finland where the company is also currently building a battery chemicals plant, set to become operational at the beginning of 2021.

During 2019, Finnish Minerals Group was actively involved in the development of Terrafame's operations. For example, the representatives of Finnish Minerals Group participated in the work of Terrafame's Technical Committee and the Steering Committee for the battery chemicals plant project. Also during the financial year, the company provided Terrafame with services related to the preparation of financial arrangements, legal matters, stakeholder relations, as well as research and development activities.

The company's starting point is that active ownership policy also includes participating in the work of the Boards of its portfolio companies. Under the shareholders' agreement, five people are appointed to Terrafame's Board based on Finnish Minerals Group's proposal.

In February 2019, Finnish Minerals Group participated in Keliber's directed share issue and subscribed EUR 6 million worth of shares in the company, thus becoming the largest shareholder of Keliber with a shareholding of 24.3 percent. Finnish Minerals Group has a representative in Keliber's Board of Directors' Nomination Committee, and after Finnish Minerals Group became Keliber's largest shareholder its representative acted as the Committee's Chair. During the second half of the year, Finnish Minerals Group actively assessed together with Keliber and its other owners the best ways to move Keliber's project towards the construction phase and to make sure that the project would receive the required financing.

Sotkamo Silver's silver mine was opened in Sotkamo in March 2019. As the company's fourth largest shareholder, Finnish Minerals Group was represented in the Sotkamo Silver's Board of Directors' Nomination Committee during the year. Since Sotkamo Silver is a listed company and Finnish Minerals Group only has a small shareholding in the company, there was less operational cooperation between Sotkamo Silver and Finnish Minerals Group than with the other portfolio companies.

In early 2019, the portfolio company Ferrovan Oy first applied for liquidation and subsequently declared bankruptcy. Finnish Minerals Group did not hold shares in Ferrovan, but it has claims arising from convertible loans and associated options outstanding with the company. The purpose of Ferrovan was to set up a plant in Raahe, Finland for the production of vanadium using the LD slag emerging during steel production. This would have been a high-tech circular economy project. A write-down of slightly under EUR 11 million was already made by Finnish Minerals Group for the claims and options outstanding with Ferrovan in the financial statements for 2018. The majority of this amount is based on the Finnish Industry Investment Oy's earlier investments in Ferrovan, which were transferred to Finnish Minerals Group in the autumn of 2018. The concrete financial loss incurred by Finnish Minerals Group was EUR 3.1 million.

Technologies and R&D for the exploitation of minerals

In 2019, Finnish Minerals Group decided to participate in two extensive European IPCEI consortia (Important Projects of Common European interest). The new participations provided a considerable amount of expertise with respect to the new IPCEI process and European cooperation.

One of the consortia is led by France, and its project package received a favourable notification decision from the Commission at the end of the year. Finnish Minerals Group's contribution to the package is related to the development of battery-grade chemicals production by Terrafame.

The other project covered by IPCEI moved forward a little later, led by Germany. In this consortium, the role of Finnish Minerals Group is mainly related to the traceability of raw materials and a responsibly certified production chain. The package was submitted to the pre-notification phase during 2019.

The technology projects were carried out in cooperation with Terrafame and Keliber. In addition, Finnish Minerals Group participated in cooperation projects that serve the Finnish battery chemicals value chain more widely. Three new projects funded by EIT RawMaterials were launched during the year, as well as the BatCircle innovation project funded by Business Finland, in which Finnish Minerals Group participates with its own business venture. Some of the projects, which had been started earlier, continued in 2019.

Cooperation with Terrafame took place in four technology projects. The four-year Nemo project, launched in 2018 and carried out under the H2020 programme, focuses on improving the efficiency of bioleaching and metals recovery and on the recovery of new products. The SO4Control project, funded by EIT RawMaterials, demonstrates the use of a bioreactor in the recycling of sodium sulphate and examines the controlling of calcium precipitation. With funding granted by Business Finland, cooperation also took place under the ProBIO support action for projects focusing on collecting information on Terrafame's bioleaching process, as well as on smaller projects that support the company's water treatment operations. Terrafame's parts of the BatCircle project focus on research supporting the battery chemicals plant. In addition, Finnish Minerals Group launched surveys on the possibility to start recovering manganese from Terrafame's process.

Cooperation with Keliber took place in the Morecovery project funded by EIT RawMaterials, in which Keliber has an interest in clarifying the by-product potential of the process. The company also participated in the H2020 call for proposals related to the digitalisation of mines together with Keliber. A negative decision was received on the proposal in December.

Two projects not related to the portfolio companies and funded by EIT RawMaterials were launched in 2019. The Credit project demonstrates and develops technologies for the recycling of sodium sulphate waste generated in mineral processes. This project supports the strategy of Finnish Minerals Group and creates conditions for responsible business. The ECOS project gathered additional information on the impact of electronic mobility. The ECOS project ended at the end of 2019.

During the year, research and development activities focused particularly on the creation of a responsibly certified battery production chain and the conditions for traceability of raw materials. These efforts as a whole were part of another IPCEI project. The preparations for European cooperation under the H2020 project were also initiated. Already in 2019, Finnish Minerals Group made preparations for a national entity under the same theme for the BatTrace project funded by Business Finland.

The activities of the R&D Team in 2019 were very much technology-driven. The projects focused more on the industrial implementation of technologies rather than on actual research. To clarify the role, the function was renamed the Technology Team, and more emphasis was placed in supporting the company's other teams. During the year, the team's resources were strengthened by recruiting one part-time research engineer.

Building a battery value chain in Finland

In 2019, Finnish Minerals Group continued its work to build a Finnish lithium-ion battery value chain and attract investments for the value chain in Finland. During the year, the negotiations on potential investments progressed to a more detailed phase with several operators and potential partners. The goal was to find partners with whom Finnish Minerals Group could jointly implement industrial investments to be built in Finland.

The technical preparations related to the investments continued with a pre-feasibility study related to the precursor and cathode active material plants. Also during the year, a comprehensive survey and estimate were carried out regarding the possible locations of the precursor and cathode active material plants, which are key parts of the battery value chain. Based on the survey, Kokkola, Vaasa, Kotka and Hamina were selected as possible locations for the precursor plant, while Vaasa and Kokkola were selected as possible locations for the cathode active material plant.

Preparing for the programme phase of the environmental impact assessment (EIA) procedure started in late 2019. As part of this work, information was gathered to describe the production process of the plants and to determine the options for implementing the project. At the same time, the current state of the environment in the municipalities where the plants could be built was further clarified.

In the spring of 2019, Finnish Minerals Group commissioned an external expert report on the social impact of investing in the battery value chain. Set as the baseline data for the report were annual production capacities of 50 000 tonnes for precursor and cathode active materials each and 10 gigawatt-hours for battery cells. The total investment was estimated to be approximately EUR 1.5 billion. According to the report, investments in the production of precursor and cathode active materials and battery cells would increase the GDP by approximately EUR 1.3 billion when the plants are in operation. The direct and indirect employment impact would amount to approximately 9,100 person-years. When in operation, the plants would generate approximately EUR 500 million in tax revenues annually.

In the spring, an external expert organisation was also commissioned to carry out a study on the impact of the rise of electric cars on the carbon dioxide emissions from transport. The results showed that in a best case scenario, the domestic production capacity of 10 gigawatt-hours for battery cells could reduce the carbon dioxide emissions from transport by more than 2 million tonnes per year.

During the year, Finnish Minerals Group participated in the preparations building a battery value chain also at the EU level. The company was an active participant in the EU Battery Alliance and in both European IPCEI projects on batteries.

Operations of Terrafame

Production and deliveries

Terrafame's annual production of nickel increased to 27,468 (2018: 27,377) tonnes, and zinc production decreased to 55,222 (2018: 61,608) tonnes. The mutual production volumes of zinc and nickel have been influenced by ore mineralogy and their dissolution ratio in bioleaching.

In March 2019, damage was detected in the liner structure of primary leaching area block, and repair measures were taken immediately. The stacking of ore was at a standstill in the primary leaching area between 18 March and 20 April, 2020. After that, the repairs progressed as planned at the same pace with heap reclaiming and stacking of new ore. Production was also limited by the scheduled and unscheduled stoppages at the metals production plant.

In 2019, all nickel-cobalt deliveries and 82 percent of zinc deliveries to end customers were made through Trafigura's sales network in accordance with the sales agreements concluded with Trafigura Ventures V B.V. In customer deliveries, the nickel content of the company's main product – nickel-cobalt sulphide – was 26,975 (2018: 28,199) tonnes. The zinc content of zinc sulphide customer deliveries was 55,152 (2018: 62,139) tonnes. Nickel sales accounted for more than 70% of net sales.

Occupational safety

Terrafame's employees suffered 11 (2018: 8) lost-time injuries in 2019. The rolling 12-month lost-time injury frequency rate (LTIFR), or number of accidents resulting in absence per one million person-hours, was 9.6 (2018: 7.4). The LTIFR for production and maintenance partners was 17.5. Terrafame found the LTIFR of companies operating in the battery chemicals plant's construction site–33–to be very high. Special attention was paid to accidents in cooperation with the contractors.

The combined lost-time injury frequency of Terrafame and all of its partners was 14.2 (2018: 8.7).

Market developments

Approximately 2.2 million electric cars were sold worldwide in 2019. More than half of this was sold in China. In Europe, sales grew by 35 percent compared to 2018. The global demand for electric car batteries grew by 17% compared to 2018, to approximately 118 GWh. With the average size of batteries having increased, so has the amount of nickel in the batteries.

Strong nickel price fluctuations continued in 2019. The uncertainty of the global economy kept the price development of nickel down during the first half of the year despite the demand exceeding the supply. The price of nickel rose sharply in the third quarter, when the markets speculated on Indonesia advancing nickel ore ban, and the price peaked at more than USD 18,000 per tonne. In the second half of the year, supply exceeded demand. The average price of nickel in 2019, which was USD 13,926 (2018: 13,122) per tonne, ended up being 6.1 percent higher than in 2018. In euros, the average price of nickel was 12 439 (2018: 11,111) per tonne.

The price of zinc kept declining in 2019, although the stock levels were also low, with the markets speculating on the possibility of oversupply. In March, the price of zinc exceeded USD 3,000 per tonne at a time of low inventory levels. During the end of the year, the price of zinc started to decline on account of a market imbalance arising from the growing uncertainty of the global economy. The average price was USD 2,547 (2018: 2,922) per tonne, which was 12.8 percent lower than in the corresponding period in 2018. In euros, the average price of zinc was 2,275 (2018: 2,474) per tonne.

The total combined nickel stocks of the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) stood at 188,097 (2018: 221,659) tonnes at the end of 2019, corresponding to demand of approximately 4 (2018: 5) weeks. The stock levels grew during the fourth quarter of 2019 for the first time since the first quarter of 2016. Zinc stock levels declined sharply from the end of 2018 and the combined zinc stock levels of LME and SHFE at the end of 2019 were 79,285 (2018: 151,850) tonnes. This corresponds to demand of less than a week.

The US dollar continued to strengthen against the euro towards the end of 2019. The average EUR/USD exchange rate for the year 2019 was 1.12 (2018: 1.18).

Cash flow and financial position

Terrafame's cash flow from operating activities totalled EUR 10.6 (2018: 5.1) million, of which change in net working capital comprised EUR -15.7 (2018: -20.6) million. Cash flow from investment activities was EUR -105.8 (2018: -81.1) million. Cash flow from investing activities was increased by the significant progress made in the construction of the battery chemicals plant during 2019. At the end of the year, the company's cash and cash equivalents totalled EUR 61.9 (96.7) million.

The total assets of Terrafame on 31 December 2019 amounted to EUR 749.5 (2018: 681.6) million. Year-end inventories totalled EUR 218.2 (2018: 199.2) million. The company classifies its inventories into three groups: raw materials and consumables, work in progress, and finished products. The value of raw material and spare parts inventories at the end of the financial period was EUR 25.0 (2018: 26.6) million. The value of work in progress was EUR 186.2 (2018: 170.7) million, and the finished products inventory EUR 6.9 (2018: 1.9) million.

Trade receivables at the end of the financial period totalled approximately EUR 15.1 (2018: 17.0) million. Other receivables totalled approximately EUR 0.1 (2018: 1.0) million. Prepaid expenses and accrued income totalled approximately EUR 13.8 (2018: 20.3) million, the most significant of which were derivative assets amounting to approximately EUR 6.4 (2018: 10.9) million due to hedging operations.

Shareholders' equity on 31 December 2018 was EUR 349.8 (2018: 365.6) million. The total amount of debt was EUR 242.4 (2018: 157.6) million, which comprises a rehabilitation provision for mine closure and environmental cleanup costs amounting to EUR 157.4 (2018: 158.4) million. At the end of the financial period, the equity ratio of Terrafame was 46.7 (2018: 53.6) percent, and net gearing was 10.2 (2018: -0.9) percent.

During the financial year 2019, Terrafame's cash flow was hedged against dollar and metal price fluctuations in accordance with the company's hedging policy.

Environment

In 2019, 4.5 million cubic meters of purified water was released from Terrafame's industrial site (2018: 2.5). The substance concentrations of purified water released from the site remained below permit levels during the year, and 41 percent of the sulphate quota was used. A good performance level was achieved because most of the year saw the process being run in a closed loop.

The second half of 2019 was very rainy, which is why a neutralisation process was initiated in December to purify and reduce the process solution. This was estimated to increase the sulphate load of water released from the area during 2020.

In 2019 in the primary leaching area, damage was detected in the plastic membrane of the liner structure and the protective structure above it, but not in the bentonite mat underneath the membrane. As a corrective measure, the condition of the old structure in the primary leaching area was monitored as the ore extraction progressed and new structures were installed as needed. The repairs will continue in 2020.

With the objective of improving energy efficiency and reducing the emissions from energy production, Terrafame concluded a contract in 2019 on the implementation of a new 10 megawatt renewable energy-based power plant for the upcoming battery chemicals plant. In addition, a partner company is developing the energy production infrastructure of the plant area and its energy efficiency as a whole.

Terrafame also launched a study in 2019 to calculate the carbon footprint of nickel sulphate. The study is carried out by an international expert company, and its results will be verified by an independent external expert.

Permit processes

In 2019, the permitting process on Terrafame's application for the renewal of the master permit was pending at the Northern Finland Regional State Administrative Agency (RSAA). The application was submitted in August 2017. During the year, the process progressed to the public hearing stage and the permit decision is expected in 2020.

The environmental permit application for the battery chemicals plant was submitted to the RSAA in April 2019, and the chemicals permit application for the plant to the Finnish Safety and Chemicals Agency (Tukes) was submitted in January 2020. Decisions on both applications are expected to be made in autumn 2020.

In December 2019, the Vaasa Administrative Court (VAC) issued two decisions concerning Terrafame's permitting processes. The first decision concerned the waste rock area KL2. In practice, the decision means linking a separate permit for the waste rock area to the master permit. With the other decision, following an appeal, the VAC annulled the RSAA's previous decision in which the final disposal of water treatment precipitate in geotubes was permitted. Terrafame has already launched the relevant EIA procedure and planning. After these have been completed, an application for a permit for the final disposal of the old water treatment precipitate generated during the previous operator will be submitted again to the RSAA.

Financial review and key figures

Finnish Minerals Group companies (consolidated)

The Group companies' net sales in the financial year 2019 totalled EUR 310.4 (2018: 325.8) million, EBITDA totalled EUR 29.6 (2018: 32.1) million, and operating profit was EUR -9.1 (2018: 2.3) million. The profit/loss before tax was EUR -31.6 (2018: -21.7) million. The loss for the financial year was EUR -31.6 (2018: -22.1) million. The consolidated total assets of Finnish Minerals Group companies amounted to EUR 861.6 (2018: 788.4) million.

The Group companies' return on equity was -6.8 percent (2018: -5.3 percent) and equity ratio 53.5 percent (2018: 59.7%). The shareholders' equity otaled EUR 460.9 (2018: 470.7) million, of which the share of non-controlling interests was EUR 100.9 (2018: 116.3) million. Liabilities otaled EUR 243.3 (2018: 159.3) million and provisions EUR 157.4 (2018: 158.4) million. The debt amounted to EUR 172.8 (2018: 93.9) million, of which EUR 31.9 (2018: 0.4) million were current and EUR 140.9 (2018: 93.5) million were non-current liabilities.

Terrafame Oy (subsidiary)

The net sales of the subsidiary Terrafame for the financial year 2019 were EUR 310.4 (2018: 325.8) million, EBITDA EUR 32.0 (2018: 32.8) million and operating profit/loss EUR -5.6 (2018: 3.0) million. The total assets of Terrafame were EUR 749.5 (2018: 681.6) million.

Shareholders' equity on 31 December 2019 was EUR 349.8 (2018: 365.6) million. The total amount of debt was EUR 242.4 (2018: 157.6) million. Terrafame's equity ratio at the end of the financial period was 46.7 (2018: 53.6) percent, and net gearing was 31.7 (2018: -0.9) percent.

Terrafame's total capital expenditure for 2019 was EUR 130.6 (2018: 81.5) million. Of this amount, EUR 88.5 million was allocated to improving productivity and increasing capacity (2018: 53.4) million, while sustaining capital expenditure amounted to EUR 42.1 (2018: 28.1) million. The key investment targets for improving productivity and increasing capacity were related to the construction of the battery chemicals plant, set to become operational in 2021. The most significant capital expenditures in sustaining production concerned the purchases of spare parts for mining equipment and the ore crushing line, the modification of the hydrogen sulphide plant, and the repair measures in the primary leaching area.

KEY FIGURES

Consolidated	2019	2018
Net sales	EUR 310.4 million	EUR 325.8 million
EBITDA	EUR 29.6 million	EUR 33.5 million
Operating profit/loss	EUR -9.1 million	EUR 2.3 million
Operating profit, %	-2.9%	0.7%
Equity ratio	53.5%	59.7%
Total assets	EUR 861.6 million	EUR 788.4 million
Wages and salaries	EUR 35.6 million	EUR 31.9 million
Average number of personnel	735 persons	677 persons
Parent company	**2019**	**2018**
Net sales	EUR 0.6 million	EUR 0.2 million
EBITDA	EUR -2.5 million	EUR -1.9 million
Operating profit/loss	EUR -2.5 million	EUR -1.9 million
Operating profit, %	-404.2%	-860.5%
Equity ratio	99.9%	99.9%
Total assets	EUR 530.2 million	EUR 517.5 million
Wages and salaries	EUR 1.5 million	EUR 0.7 million
Average number of personnel	13 persons	8 persons

Key figure calculation formulas

Equity ratio %	$\frac{\text{100 x Equity}}{\text{Total assets – advances received}}$
EBITDA	Operating profit + depreciation + amortization + impairment

Personnel

At the end of the financial year, Finnish Minerals Group employed 14 persons (2018: 11). During the year, two new permanent employees and one person for a fixed-term employment relationship were hired. In addition, one person was recruited through a staff leasing company to focus on the Asian markets and work from Shanghai.

At the end of 2019, Terrafame employed 754 (2018: 667) people. In addition, the company hired more than 70 people for summer jobs. The total number of personnel increased by 13% compared to 2018. The increase was especially influenced by the apprenticeship training. In addition to its own employees, nearly 1,500 people through about 70 partner companies worked regularly in the industrial site.

During the year, Terrafame initiated a two apprenticeship training programs leading to a professional degree in the processing industry. The call for applications for the third group was announced in December. The goal is to train 50 new process engineering professionals annually within the next two years. The internal and external recruitment of experienced process and maintenance professionals for the production organisation for the new battery chemicals plant, which is scheduled for start-up and commissioning in 2021, was also initiated in late 2019. A three-year term for a principal lecturer position in process industry, which was donated by Terrafame, began at Kajaani University of Applied Sciences (KAMK) in the spring. The aim is to create a new process technology specialisation programme at KAMK that will be launched in 2020.

Responsibility

Responsibility is at the heart of the work Finnish Minerals Group does. The company plays an active role as a mining company owner and a technological developer of the mining industry while also promoting the building of a battery value chain in Finland and Europe. The efforts of Finnish Minerals Group support the reduction of carbon dioxide emissions generated by the transport and energy sectors and minimising the environmental impact of mining.

In 2019, Finnish Minerals Group prepared a responsibility programme for the period 2020–2024, in which the company's sustainable development goals were summarised. The three themes established in the responsibility programme are: 1) social impact, 2) sustainable value chain, and 3) responsibility for the environment and climate. The background work included surveying stakeholder expectations and using the results of the survey as basis for the programme. In addition to the responsibility programme, a code of ethics was prepared to serve as guidance for the personnel in both internal operations and during external cooperation.

The key focus areas of responsibility for the subsidiary Terrafame were occupational safety and environmental responsibility. Efforts were put into improving occupational safety through, for example, thematic safety training courses and the 'Don't get hurt!' safety campaign, as well as by engaging in enhanced cooperation with contractors in order to prevent accidents and injuries.

Terrafame's process safety risk assessments were updated in 2019. The greatest risks are attributable to the hydrogen sulphide and hydrogen plants and the use of chemicals. During the year, damages requiring repair measures were observed in one of the hydrogen sulphide plants when the condition of the plant and equipment was inspected. In March, damage was detected in the liner structure of block 2 of the primary leaching area. To repair the damage, the plastic membrane is being replaced with a new membrane as needed as the heap reclaiming progresses.

Corporate governance at Finnish Minerals Group

Shares and shareholders

The State of Finland owns Finnish Minerals Group's entire share capital that on 31 December 2019 consisted of 535,908 shares. Each share entitles its holder to one vote.

In late 2019, the Extraordinary General Meeting of Finnish Minerals Group made a share issue decision under which the State exercised its right to subscribe 22,500 of the company's shares for the price of EUR 22.5 million. The rights issue was based on the State's investment commitment of 2017 as part of the company's capitalisation.

Corporate governance

The main rules governing a state-owned special-purpose company are laid down in the Limited Liability Companies Act of Finland (624/2006) and the State Shareholdings and Ownership Steering Act (1368/2007). The company is also governed by the current Government Resolution on State Ownership Policy and the Articles of Association as well as the principles and guidelines defined by the company's Board of Directors. The General Meeting of Shareholders, the Board of Directors and the CEO are responsible for Finnish Minerals Group's administration and operations.

The Chair of the Board of Directors of Finnish Minerals Group in 2019 was Janne Känkänen, and the other members of the Board were Juha Majanen, Minna Pajumaa, Antti Kummu, Eeva Ruokonen and, as of 28 March 2019, Teija Kankaanpää and Ilpo Korhonen. The Board of Directors had a personnel and remuneration committee as well as a temporary responsibility committee. All Board members are independent of the company. Three out of seven Board members are not independent of the company's sole shareholder, the State of Finland. The company's Board of Directors complies with the rules of procedure it has approved.

The Authorised Public Accountants KPMG Oy Ab acted as the auditor of Finnish Minerals Group and its subsidiaries in 2019, with Authorised Public Accountant Antti Kääriäinen acting as the principal auditor.

Related party transactions

The Board of Directors of Finnish Minerals Group has confirmed the policy on related party transactions for the Group companies. The key related parties include the State of Finland, which is the Group's only shareholder, and the associated company Keliber Oy, Galena Private Equity Resources Investment 2 L.P. and Galena Private Equity Resources Investment 3 L.P. funds, as well as Trafigura Ventures V B.V. The related parties also include members of Boards, CEOs and management team members of Group companies, persons responsible for Terrafame's commercial agreements, immediate family members of persons referred to here, and entities in which they or their immediate family members exercise control or considerable influence. Finnish Minerals Group's related parties also include companies in which the Government of Finland exercises control or considerable influence. The company has applied an exemption pursuant to which it only reports significant transactions with Government-related companies.

During the financial year 2019, Terrafame had a EUR 32.5 (2018: 58.5) million counter-guarantee granted by the State for arranging collateral in accordance with environmental permits. Terrafame has acquired legal and other administrative services from Finnish Minerals Group, whereas Finnish Minerals Group has acquired financial management services from Terrafame.

The sales of nickel cobalt sulphide and zinc sulphide to Trafigura Ventures V B.V. company amounted to EUR 322.9 (2018: 305.6) million for the financial period.

The Group companies' related party transactions are described in the notes. Financing arrangements with related parties are disclosed in the report's section concerning financing arrangements.

All business transactions between the Group companies and their related parties conformed to accepted market practices.

Remuneration of the Board of Directors and executives

The monthly fees paid in 2019 were EUR 1,500 to the Chair of the Board of Directors of Finnish Minerals Group and EUR 700 to each Board member. In addition to the monthly fees, a meeting fee of EUR 500 was paid for each Board and committee meeting attended. The subsidiary Terrafame's steering committee's activities have been merged with the meetings of Terrafame's Board of Directors so that the Chair of the Board of Finnish Minerals Group has the right to participate in Terrafame's Board meetings in accordance with the shareholders' agreement. No separate fee was paid to the Chair of the Board in 2019 for participation in the steering committee.

The Board of Directors of Finnish Minerals Group had 13 meetings in 2019 (2018: 19). In addition, the personnel and remuneration committee met once and the responsibility committee twice.

The total amount of monthly fees paid to Board members was EUR 65,550 (2018: 42,300) and the total amount of meeting fees paid to Board members EUR 46,000 (2018: 30,500). In addition, EUR 2,500 of the previous year's unpaid fees were paid in 2019.

Board members do not own shares in the company and the company has no option scheme.

The subsidiary Terrafame and the investment portfolio companies – Keliber and Sotkamo Silver – report on the remuneration paid to their Board members and executives in their own reports.

The remuneration of the Chief Executive Officer of Finnish Minerals Group consisted of a fixed salary, phone and meal allowances, and a performance bonus of up to 30 percent of the CEO's annual salary. The CEO is not covered by a contribution-based or other additional pension insurance. The CEO's period of notice is one month without a separate severance pay, and retirement age is 65. CEO Matti Hietanen does not own shares in the company, and the company has no option scheme.

The total amount of remuneration, excluding the performance bonus, paid to the CEO, Matti Hietanen, in 2019 was EUR 182,136 (2018: 182,136). The CEO received a performance bonus of EUR 27,320. The total amount of remuneration paid to the other members of the Management Team was EUR 458,686 (9–12/2018: 136,959). Of this amount, the performance bonuses paid for September–December 2018 accounted for EUR 22,366.

Remuneration of the Board of Directors and other executives

(EUR)	Monthly fees	Attendance fees	Total remuneration	Board meetings	Committee meetings
Janne Känkänen	18,000	6,500	24,500	12/13	1/1
Antti Kummu	9,750	7,000	16,750	13/13	1/1
Juha Majanen	8,400	7,500	15,900	13/13	2/2
Minna Pajumaa	8,400	7,000	15,400	13/13	1/1
Eeva Ruokonen	8,400	7,500	15,900	13/13	2/2
Teija Kankaanpää	6,300	5,500	11,800	9/13	2/2
Ilpo Korhonen	6,300	5,000	11,300	9/13	1/1
Total remuneration 2019	**65,550**	**46,000**	**111,550**		

Estimate of major risks and uncertainty factors affecting operations

The Board of Directors and Chief Executive Officer of the Group companies are responsible for organising internal control, risk management and internal auditing within the companies.

In 2019, Finnish Minerals Group updated its risk management policy. The update also included an evaluation of the most significant risks associated with the company's operations. Efforts are made to identify risks, their impact on company business and operations is assessed, and risk management measures are planned as required. The company's Board of Directors regularly monitors and assesses risks related to the activities, as well as its risk management measures.

From the perspective of shareholder value, the key risks of Finnish Minerals Group relate to the business activities of the subsidiary, Terrafame. The business is affected by various risks typical to the mining industry, such as fluctuations in exchange rates and the price of nickel and zinc, the counterparty risk associated with customers and other business partners, as well as risks related to the prices of major raw materials and energy.

Terrafame's risk management and the risks associated with the related activities are discussed in Terrafame's financial report.

Significant events after the end of the financial period

The financial period of Finnish Minerals Group ended on 31 December 2019. After the end of the financial period, at the beginning of January, the share issue implemented in late 2019 increased the company stock of Finnish Minerals Group to 558,408 shares.

In January, the company announced the preparations on behalf of its project company, Finnish Battery Chemicals, for the EIA programme for two new battery value chain plants that would be producing precursor and cathode active materials. At the beginning of March, the project company launched the EIA procedure for the production of battery materials by submitting the EIA programme to the coordinating authority.

In February, Finnish Minerals Group invested EUR 30 million in the upcoming battery chemicals plant of its subsidiary, Terrafame, accordance with the financing agreement signed by the owners in 2018. Also in February, Ferrovan announced that the bankruptcy estate had reached an agreement to sell the rights and samples related to the Mustavaara mine area to the Canadian mineral exploration and development company, Strategic Resources Inc. With claims arising from convertible loans and associated options, Finnish Minerals Group is one of the bankruptcy estate's creditors.

In February, the Government granted a uranium recovery permit to Terrafame. In December 2019, Terrafame initiated a neutralisation process to purify and reduce the process solution from the process leach cycle. The neutralisation process will increase the sulphate content of the purified water, which is why the concentration limit set for sulphur in the discharge water is likely to be exceeded in February–April 2020.

Estimate of future developments

Finnish Minerals Group continues to operate as the Group's parent company, whose core activities are to invest in the mining and battery industry, build a lithium-ion battery value chain in Finland, and carry out technological development work.

The process equipment installation work for Terrafame's battery chemicals plant is progressing and commercial production will commence in early 2021. The company will also continue to take measures to improve occupational safety, production and cost efficiency. In February, the price of nickel on the London Metal Stock Exchange (LME) was at the USD 13 000 per tonne level, and strong price volatility was to be expected.

Board of Directors' proposal for the disposal of the result

The result of Finnish Minerals Group for the financial year 2019 shows a loss of EUR 10 115 126,26. On 31 December 2019, the distributable equity of Finnish Minerals Group totalled EUR 526 919 885,11.

The Board of Directors will propose to the AGM that Finnish Minerals Group's loss for the financial year be recorded in the retained earnings account and that no dividend be paid.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Note	2019	2018
Net sales	1.1	310,436	325,830
Cost of goods sold	1.3	-292,786	-301,881
Gross profit		17,650	23,949
Other operating income	1.4	2,005	2,534
Sales and marketing expenses	1.5	-1,391	-1,360
Administrative expenses	1.6	-19,534	-17,082
Other operating expenses	1.7	-7,793	-5,737
Operating profit/loss		-9,063	2,304
Finance income and cost	1.8		
Other finance income		1,244	1,865
Change in fair value, other investments		-8,155	-4,441
Change in fair value, financial securities		0	-6,306
Interest and other finance costs		-14,486	-15,074
Share of profit from associated company		-1,094	0
Total finance income and cost		-22,491	-23,955
Profit/loss before tax		-31,554	-21,651
Income taxes	1.9	-60	-498
Profit/loss for the period		**-31,614**	**-22,149**
Other comprehensive income			
Items that will not be subsequently transferred to profit or loss			
Items that may be subsequently transferred to profit or loss			
Cash flow hedging – effective portion of changes in fair value reserve		-9,114	13,605
Taxes on items that may be subsequently transferred to profit or loss		1,823	-2,721
Other comprehensive income, net		-7,291	10,884
Total comprehensive income for the period		**-38,905**	**-11,265**
Distribution of profit for the period			
Owners of the parent		-25,905	-19,914
Non-controlling interests		-5,709	-2,235
		-31,614	**-22,149**
Distribution of comprehensive profit for the period			
Owners of the parent		-31,140	-11,534
Non-controlling interests		-7,764	269
		-38,905	-11,265
Earnings per share calculated from the profit attributable to the owners of the parent			
Basic earnings per share	1.10	-48,34	-40,13
Diluted earnings per share		-48,34	-40,13
Average number of shares:			
Undiluted		535,908	496,208
Diluted		535,908	496,208

The parent company does not have equity arrangements with a dilution effect on earnings per share.

CONSOLIDATED BALANCE SHEET

	Note	31 Dec 2019	31 Dec 2018
ASSETS			
Non-current assets			
Intangible assets	1.12	1,079	1,464
Property, plant and equipment	1.13	433,888	342,460
Biological assets	1.14	6,974	6,712
Investments in other shares and participations	1.15	10,329	13,554
Deferred tax assets	1.22	227	0
Other receivables	1.16	4,621	8,776
Total non-current assets		**457,118**	**372,965**
Current assets			
Inventories	1.17	218,157	199,196
Trade receivables and other receivables	1.18	33,658	42,634
Cash and cash equivalents	1.19	152,682	173,559
Total current assets		**404,497**	**415,389**
Total assets		**861,615**	**788,354**
EQUITY AND LIABILITIES			
Equity attributable to equity holders of the parent	1.20		
Subscribed capital		2,258	2,258
Invested unrestricted equity fund		559,519	533,651
Fair value reserve	1.21	-653	4,914
Earnings from previous periods		-175,177	-166,531
Profit/loss for the period		-25,905	-19,914
		360,043	354,377
Share of non-controlling interests		100,888	116,338
Total equity		**460,931**	**470,715**
Non-current liabilities			
Deferred tax liabilities	1.22	583	2,118
Interest-bearing liabilities	1.26	140,857	93,499
Provisions	1.25	157,398	158,363
Total non-current liabilities		**298,838**	**253,980**
Current liabilities			
Interest-bearing liabilities	1.26	31,931	354
Trade and other payables	1.27	69,915	63,304
Total current liabilities		**101,846**	**63,658**
TOTAL EQUITY AND LIABILITIES		**861,615**	**788,354**

CONSOLIDATED CASH FLOW STATEMENT

	Note	2019	2018
Cash flow from operating activities			
Earnings before tax		-31,554	-21,651
Adjustments to operating profit/loss	1.28	21,308	21,021
Depreciation and amortisation		38,666	30,150
Change in net working capital		-15,943	-20,154
Interest paid		-5,104	-4,884
Interest received		979	839
Realised foreign exchange gains and losses		0	-28
Net cash flow from operating activities		**8,352**	**5,294**
Cash flow from investing activities			
Investments in tangible and intangible assets		-118,833	-81,687
Proceeds from sale of tangible and intangible assets		12,725	1
Collateral deposits on behalf of subsidiary		0	17,000
Investments in other investments		-6,024	-3,466
Net cash flow from investing activities		**-112,132**	**-68,152**
Cash flow from financing activities			
Subscription issue/share capital		22,500	**91,271**
Borrowings		62,947	**0**
Repayment of non-current borrowings and transfers between items		-28,619	0
Current borrowings and transfers between items		28,619	0
Repayment of loans		-203	-33
Payment of finance lease liabilities		-2,551	-874
Cash flow from financing activities		**82,692**	**90,364**
Change in cash and cash equivalents		**-21,087**	**27,506**
Effects of foreign exchange rate changes on foreign currency transactions and operations		210	1,064
Cash and cash equivalents at beginning of year		173,559	144,990
Cash and cash equivalents at end of year		**152,682**	**173,559**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Equity attributable to equity holders of the parent						
	Subscribed capital	**Invested unrestricted equity fund**	**Fair value reserve**	**Earnings from previous periods**	**Total share of the parent**	**Share of non-controlling interests**	**Total equity**
Equity 1 Jan 2018	2,258	466,843	-3,479	-167,129	298,492	71,410	369,902
Error correction	0	0	12	0	12	-12	0
Adjusted equity 1 Jan 2018	2,258	466,843	-3,467	-167,129	298,504	71,398	369,902
Comprehensive income							
Profit/loss for the period	0	0	0	-19,914	-19,914	-2,235	-22,149
Other comprehensive income (adjusted basis)							
Cash flow hedging	0	0	8,380	0	8,380	2,503	10,884
Total comprehensive income for the period	0	0	8,380	-19,914	-11,533	268	-11,265
Business transactions with shareholders							
Share issue	0	66,808	0	0	66,808	45,271	112,079
Total business transactions with shareholders	0	66,808	0	0	66,808	45,271	112,079
Changes in subsidiary holdings							
Acquisitions of non-controlling interests not leading to change of control	0	0	0	599	599	-599	0
Equity 31 Dec 2018	2,258	533,651	4,914	-186,445	354,377	116,338	470,715
Equity 1 Jan 2019	2,258	533,651	4,914	-186,445	354,377	116,338	470,715
Error correction	0	0	12	0	12	-12	0
Adjusted equity 1 Jan 2019	2,258	533,651	4,926	-186,445	354,389	116,326	470,715
Comprehensive income							
Profit/loss for the period	0	0	0	-25,905	-25,905	-5,709	-31,614
Other comprehensive income (adjusted basis)							
Cash flow hedging	0	0	-5,235	0	-5,235	-2,056	-7,291
Total comprehensive income for the period	0	0	-5,235	-25,905	-31,140	-7,765	-38,905
Business transactions with shareholders							
Share issue	0	22,500	0	0	22,500	6,620	29,120
Total business transactions with shareholders	0	22,500	0	0	22,500	6,620	29,120
Changes in subsidiary holdings							
Acquisitions of non-controlling interests not leading to change of control	0	3,369	0	0	3,369	-3,369	0
Acquisitions of non-controlling interests leading to change of control	0	0	-343	11,268	10,925	-10,925	0
Equity 31 Dec 2019	2,258	559,519	-653	-201,081	360,043	100,888	460,931

ACCOUNTING POLICIES FOR CONSOLIDATED FINANCIAL STATEMENTS, AND NOTES

Basic information about the Group

Finnish Minerals Group is a Group formed by companies operating in the mining and minerals sector. The Group operates internationally and is engaged in the exploration, recovery and mining of ores as well as other mining and quarrying operations, the purchase and sale of mining rights, and any other business based on or related to knowledge acquired in these areas or otherwise suitable for the said areas. The Group comprises the parent company Finnish Minerals Group (Business ID 2674050-9), the subsidiary Terrafame Oy (Business ID 2695013-5), in which the parent has a shareholding of 71.8 percent, and the subsidiary Finnish Battery Chemicals Ltd (Business ID 2999094-1), in which the parent has a shareholding of 100 percent.

Finnish Minerals Group is a state-owned special-purpose company subject to ownership steering by the Ministry of Economic Affairs and Employment, tasked with developing the Finnish battery and mining industry. The current mandate and trade name were given to the company in June 2018. Before that, starting from 2015, the company operated under the name Terrafame Group Ltd and focused on the duties of the parent company of Terrafame Oy.

Finnish Minerals Group's most important asset item is its subsidiary, Terrafame Oy. Terrafame produces nickel, zinc, cobalt and copper at its mine and metal works located in Sotkamo.

The other portfolio companies of Finnish Minerals Group on 31 December 2019 were Keliber Oy (shareholding of 24.3%) and Sotkamo Silver AB (shareholding of 2.0%).

The parent company is domiciled in Helsinki and its visiting address is Keskuskatu 5 B, 8th floor, FI-00100 Helsinki, Finland. The Group's subsidiary Terrafame Oy was registered in the Trade Register on 5 June 2015 and its address is Malmitie 66, FI-88120 Tuhkakylä, Finland.

Finnish Minerals Group's Board of Directors approved these financial statements in its meeting of 11 March 2020. According to the Limited Liability Companies Act of Finland, shareholders may approve or reject the financial statements in the Annual General Meeting held after their publication. The General Meeting may also decide to amend the financial statements.

Copies of the consolidated financial statements are available at Finnish Minerals Group's office, and they can be viewed on the Company's website at www.mineralsgroup.fi.

Accounting policies for consolidated financial statements

Basis of preparation

Finnish Minerals Group's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as well as the IAS and IFRS standards and SIC and IFRIC interpretations effective on the date of closing of the accounts, 31 December 2019. The International Financial Reporting Standards refer to standards and their interpretations approved for adoption within the EU in accordance with the procedure enacted in EU regulation (EC) 1606/2002, included in the Finnish Accounting Act and regulations based on it. The notes to the consolidated financial statements also comply with Finnish accounting and corporate legislation. The financial statement information is reported in tables and related texts in thousands of euros and in the report of the Board of Directors in millions of euros to one decimal place. The comparative figures reported in brackets are figures for the financial period 2018. All the presented figures have been rounded according to general rounding rules, so the sum of the individual figures may be different from the sum presented. Key figures have been calculated using exact values. Comparative information has been adjusted where necessary to correspond with the information of the year under review.

The Consolidated financial statements are drawn up on the basis of initial acquisition costs, with the exception of assets and liabilities at fair value through profit or loss, and biological commodities valued at fair value less estimated Sales. The assets, liabilities and contingencies acquired in a business transaction have been valued at fair value on the acquisition date.

The preparation of financial statements under IFRS means that Group management must necessarily make certain estimates and judgements concerning the application of the accounting principles. Information about such considerations made by the management with the greatest influence on the figures presented in the financial statements are explained under the item 'Accounting policies requiring consideration by management and crucial factors of uncertainty associated with estimates'.

New and amended standards and interpretations applied

The Finnish Minerals Group started applying the leases standard IFRS 16 on 1 January 2019. Other amended standards or interpretations of IFRIC have not had any material impact on the consolidated financial statements of Finnish Minerals Group.

The Group adopted IFRS 16 under the simplified procedure. As a result, the figures for the reference period have not been adjusted. IFRS 16 replaced IAS 17 and the related interpretations. The standard requires lessees to recognise in the balance sheet a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Balance-sheet recognition is subject to two exemptions for short-term leases of up to 12 months and goods of a value of up to approximately USD 5 000.

Recognition in the balance sheet is largely like the IAS 17 accounting policies and practices applicable to finance leases. The accounting treatment of lessors mostly remained in line with the current IAS 17.

Lessees do not present lease expenses in their income statement. Depreciation, amortisation and any impairment losses are reduced from right-of-use assets through profit or loss. Lessees expense the interest on lease liabilities, which is calculated at the discount rate of the date of inception of the lease, through profit or loss after the inception of the lease, while any variable lease payments not included in the lease liability are recognised as lease expenses. The adoption of IFRS 16 Leases will also have an impact on the net cash flows from operating and financing activities. Pursuant to the new standard, lease expenses that previously only affected the cash flow from operating activities shall be presented as loan repayments and interest expenses in the cash flow from operating activities.

In the context of adopting IFRS 16, Finnish Minerals Group applied practical aids and accounted for leases with a lease term of 12 months or less (beginning on or after 1 January 2019) as short-term leases and did not recognise the initial direct costs in the value of right-of-use assets. The carrying amounts of right-of-use assets and lease liabilities of leases classified previously as finance leases, as defined by IAS 17, correspond at the time of the transition with the carrying amounts defined at the leases' date of inception in accordance with IAS 17.

The cumulative effect that adopting the standard had on financial year 2019 was recognised in the balance sheet under tangible right-of-use assets and financial liabilities. The lease payments previously presented in other operating expenses will be apportioned between repayments of the lease liability and interest on the lease liability. Depreciation of the right-of-use assets will be recognised in profit or loss.

At the time of the transition, Finnish Minerals Group recognised the following right-of-use assets and lease liabilities:

Right-of-use assets, machinery and equipment 1 Jan 2019	562
Lease liability 31 Dec 2018	564
Matching difference	-1

The weighted average value of interest used in the calculation was 3.3 per cent.

IFRIC 23 – Uncertainty over Income Tax Treatments (effective for annual reporting periods beginning on or after 1 January 2019). The interpretation clarifies the accounting treatment in a situation where the taxation of the entity is awaiting approval by the tax authority. A key issue lies in assessing whether the tax authority will accept the entity's tax treatment. When considering this, it is assumed that the tax authority has access to all the relevant information when assessing the proposed treatment. The change to the standard will have no impact on the consolidated financial statements of Finnish Minerals Group.

Other amended standards or interpretations have not had any impact on the consolidated financial statements of Finnish Minerals Group.

Subsidiaries

Subsidiaries are entities controlled by the Group. Control exists when the Group owns more than half of the voting rights or otherwise has a controlling interest. The existence of potential voting rights is also considered when assessing the existence of control in the case that the instruments entitling to potential control are currently exercisable. Control exists when the Group, by virtue of being part of the entity, is subject or entitled to its variable returns and is able to influence those returns by exercising its power within the entity.

Acquired subsidiaries are consolidated from the date on which the Group gains control. The consolidation ends on the date on which control is lost.

Intra-group transactions, balances and unrealised gains on intragroup transactions are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset item transferred.

Associated companies

The equity method of accounting has been applied to associated companies. The Group reports the revenue earned by associated companies on its income statement, in an amount proportional to the percentage of its equity investment in the company.

Separate recognition of non-controlling interests

Non-controlling interests are separately recognised in proportion to their share of ownership on the balance sheet date, including IFRS adjustments, in the company's financial result and equity.

Translation of items denominated in foreign currencies

Figures in the consolidated financial statements are shown in euro, the euro being the functional and presentation currency of the parent company, Finnish

Minerals Group.

Transactions in foreign currencies are entered in euro at the rates prevailing at the transaction date or average rates provided by central banks. Monetary foreign currency items are translated into euro using the rates prevailing at the balance sheet date Foreign exchange gains and losses related to business operations are included in the corresponding items of net sales, operating expenses or financial income and expenses.

Operating profit

IAS 1 Presentation of Financial Statements does not define the concept of operating profit. The Group has defined it as follows: an operating profit is a net amount derived from net sales plus other operating income, less purchase expenses, purchase expenses are adjusted for changes in inventories (growth in these increases and reductions decrease the operating profit) and expenses from production for own use, less employee benefit expenses, depreciation, amortisation and any impairment losses and other operating expenses. All other items in the income statement are shown below the operating profit. Exchange rate differences are included in the operating profit if they arise from items related to operations with third parties. Otherwise they are recognised in financial items. The realised earnings-related impacts of changes in the value of effective hedging instruments that are covered by hedge accounting are presented uniformly with the hedged item.

Revenue recognition

The revenue of Finnish Minerals Group mainly consist of metal sales. A large proportion of the company's production is sold under long-term contracts, but sales revenue is recognised on the basis of individual sales transactions. The terms of delivery determine when the transfer of control to the customer takes place. Revenue is recognised net of sales-related foreign exchange gains and losses and any applicable sales taxes. Most sales are priced in US dollars. Individual deliveries constitute a separate performance obligation.

According to established business practices, recognition of sales revenue based on a best estimate per delivered batch of metals is, if necessary, adjusted according to the final weighing and analysis data.

Sales revenue recognition is based on a preliminary invoice drawn up upon delivery according to preliminary analysis and measurement results and the market prices at the time of delivery. Therefore, the offsets may be variable and will be adjusted as needed on the basis of the final analysis and measurement results. Furthermore, the prices of delivered metals are adjusted to correspond to the market prices of the agreed pricing period. The final analysis and measurement results are normally obtained within a few months.

With regard to deliveries for which final analysis and measurement results have not yet been obtained, the sales prices and euro-denominated valuations are adjusted at the date of reporting so as to correspond to the average market prices of the month of the financial statements and the exchange rates at the date of closure of the accounts. With regard to these deliveries, the company also considers the need to make write-downs due to the changes in analysis and measurement results. No such write-downs have been recorded in the financial statements of 31 December 2019 or 31 December 2018. In addition, the metal and currency hedges for metal tonnes sold have been taken into account in the valuation of sales.

Pension obligations

The Group companies have pension schemes in accordance with the local conditions and practices. The schemes are generally funded through payments to insurance companies. Currently all pension schemes are defined contribution plans.

Defined contribution plan is a pension plan under which the Company pays fixed contributions into a separate entity. The Company has no legal or constructive obligations to pay further contributions if the entity does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. Under defined contribution plans the payments are accounted for as an expense for the period for which the payment is made.

Leases

Finnish Minerals Group acts as a lessee, in which role it has mainly leased premises, small appliances, and other machinery and equipment. As a rule, the Group records all its right-of-use assets and lease liabilities associated with leases in its balance sheet. The Group applies the standard's exemptions concerning short-term leases of up to 12 months and goods of a value of up to approximately EUR 5 000. The Group does not recognise these in the balance sheet, but accounts for the lease payments of the abovementioned leases on a straight-line basis over the lease term. The lease term is the period during which the lease cannot be cancelled. It includes the period covered by an extension or termination option, if the lessee is reasonably certain to exercise the option to extend the lease, or not to exercise the option to terminate the lease.

At the inception date of the lease, the Group recognises a lease liability and a corresponding right-of-use asset. A right-of-use asset is initially measured at cost, which includes the original amount of the lease liability, plus any lease payments made at or prior to the inception date of the lease, less lease incentives obtained, plus any initial direct costs incurred by the Group, as well as the estimated restoration costs.

After the inception date of the lease, the right-of-user asset is measured at cost less the accumulated depreciation, amortisation and impairment loss. The asset is adjusted with certain items attributable to the re-measurement of the lease liability. The right-of-use asset is depreciated on a straight line basis starting from the inception date of the lease over the asset's economic life or the lease term. If necessary, the right-of-use asset is tested for impairment and any impairment losses are recognised through profit or loss.

The original lease liability is measured at the current value of lease payments that were not made at the inception date of the lease. The Group discounts leases using agreement-specific borrowing rates. The value of the lease liability consists of: fixed payments, including factually fixed payments; variable lease payments that depend on an index or a rate and which are initially measured using the index or rate as at the lease's inception date; amounts payable by the lessee based on residual value guarantees; and the purchase option exercise price, if it is reasonably certain that the Group will exercise the option.

In subsequent periods, lease liabilities are measured at amortised cost using the effective interest method. The lease liability is remeasured when there is a change in future lease payments due to a change in the index or rate used to determine those payments, or if there is a change in the amounts expected to be payable under a residual value guarantee. Changes made by the Group in the assessment of a purchase option of an underlying asset or an extension or termination option may also lead to a re-measurement of the lease liability. When the lease liability is remeasured, a corresponding adjustment is made to the asset's carrying amount, or it is recognised through profit or loss if the carrying amount of the right-of-use asset has decreased to zero.

Finnish Minerals Group does not act as a lessor.

Impairment losses

The Group assesses at each balance sheet date whether there is an indication that an asset may be impaired. If any such indication exists, the asset's recoverable amount is estimated.

The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. The value in use refers to the estimated future net cash flows obtainable from the asset or cash-generating unit, discounted to their current value. The value in use is forecast on the basis of circumstances and conditions prevailing at the time of testing. The discount rate takes into account the time value of money as well as the special risks involved for each asset, different industry-specific capital structures in different lines of business, and the investors' return expectations for similar investments. An impairment loss is recorded when the carrying amount of an asset is greater than its recoverable amount. If the impairment loss is allocable to a cash-flow-generating unit, it is allocated first to reduce the goodwill of the unit and subsequently to reduce other assets of the unit. As at the date of reporting or the end of the reference period, the Group has no goodwill contributing to its valuation.

The impairment loss is reversed if a change has occurred in circumstances and the recoverable amount of the asset has changed since the impairment loss was recognised.

Borrowing costs

Borrowing costs are recognised as an expense for the financial period during which they are incurred. Borrowing costs that directly attributable to acquisition, construction or manufacturing of a tangible fixed asset (property, plant and equipment) that meets the criteria shall be capitalised as part of the asset's acquisition cost.

Income taxes

Tax expenses on the income statement consist of the tax based on taxable income for the year and deferred taxes.

Taxes based on taxable income for the year are calculated using the applicable tax rates. Taxes are adjusted with any taxes arising from previous years.

Deferred taxes are calculated for all temporary differences between the carrying amount and taxable amount. Deferred taxes are calculated using the tax rates set at the balance sheet date. Deferred tax assets arising from taxable losses carried forward are recognised up to the amount for which there is likely to be taxable income in the future, and against which the temporary difference can be used.

Property, plant and equipment

Property, plant and equipment, which on 31 December 2019 include buildings and infrastructure, machinery and equipment used in production operations, laboratory equipment, vehicles, roads, and structures for environmental protection, are stated at historical cost less accumulated depreciation and any accumulated impairment losses. Historical cost includes costs that are directly attributable to the acquisition, construction or production of an asset, and borrowing costs that meet the criteria.

Spare parts with a useful life of more than one year have been recognised in property, plant and equipment.

In open pit mining operations, it is necessary to remove overburden to access ore from which minerals can economically be extracted. The process of mining overburden and waste materials is referred to as stripping. Costs arising from the removal of overburden are recorded as an expense as incurred.

Construction in progress and land are not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

Roads	25 years
Buildings and structures	10–40 years

Leaching heap foundations	10–30 years
Machinery and equipment	4–25 years
Furniture, fixtures and fittings	5–10 years
Vehicles	5–10 years
Fixed asset spare parts	3 years
Structures for environmental protection	25 years

Useful lives of assets, depreciation methods and any residual values are re-assessed on each reporting day. The reassessment is based on the Group's estimates of ore reserves, mineral resources, production capacity and other relevant factors. Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised within other operating income or expenses, respectively, in the income statement.

Other intangible assets

Other intangible assets are recorded at cost if the cost is reliably measurable and the future economic benefits for the Group are probable. Other intangible assets mainly consist of IT applications supporting the Group's business operations, which are amortised over 3–5 years.

Biological assets

Biological assets, i.e. living trees, are measured on initial recognition and at each balance sheet date at their fair value less estimated point-of-sale costs. The fair values of biological assets other than young seedlings are based on quoted prices in active markets for biological assets. Biological assets, i.e. those physically attached to land, are recognised and measured at their fair value separately from the land.

The fair value of harvest, measured as its value at the point-of sale, is deducted from the fair value of the biological assets. The estimated growth of trees is recognised as gains in the fair value of the biological assets. The changes in the fair value of biological assets are included in the operating profit.

Research and development expenditure

Research and development expenditure is recognised as an expense as incurred.

Inventories

The Group classifies its inventories into three groups: raw materials and consumables, work in progress, and finished products.

Raw materials and consumables are valued at the average acquisition cost of the goods in stock. A so-called write-down on slow-moving items is made on the slow-moving goods in the raw materials and consumables inventory. If an item has been in stock for more than a year, a write-down of 25 per cent is made. The write-down increases annually by 25 percentage points, so the value of an item that has been stored for more than four years is zero.

Work in progress and finished products (metal content for sale) are presented in the balance sheet as valued at actual production costs but up to the net realisable value of the products on the balance sheet date. Net realisable value refers to the estimated selling price in the ordinary course of business, less the production costs necessary to making work in progress and finished products ready for sale.

The acquisition cost of work in progress and finished products (production cost) includes the fixed and variable costs of production and maintenance that supports production, as well as depreciation on these functions, based on the realised production costs in the production process. The acquisition cost excludes borrowing costs.

Finished products include nickel cobalt sulphide, zinc sulphide and copper sulphide. Work in progress includes metals in the ore in primary and secondary heaps, as well as metals in the leaching process or metal precipitation and filtration process that can be processed for sale as a finished product.

The amount of metal contained in work in progress is measured by calculating the metal tonnes added to and removed from the production process. The recoverable quantities of nickel, zinc, copper and cobalt included in work in progress are determined based on the estimated ore concentrations based on geological studies, the estimated recovery percentages of metals in the bio heap leaching process and the recovery percentages of the metals recovery plant.

Ore concentrations, the amount of metals in the production process and the metals recovery percentage are reviewed monthly.

With the net realisable value being higher than the at-cost value, the Group's finished products on 31 December 2019 were valued at EUR 6.9 million at cost on the basis of the acquisition cost. Finished products on 31 December 2018 were also valued on a cost basis. As of 2017, work in progress has been valued in the company's financial statements on a cost basis, as it was lower than the net realisable value. On 31 December 2019, the value work in progress on a cost basis was EUR 186.2 million.

The value of inventories determined in accordance with the principle of net realisation value includes discretionary factors related to, for instance, the measurement of metal volume in work in progress, metals recovery percentages, production costs, the production time necessary to complete sales, and sales prices.

Financial assets

Financial assets are classified based on the Group's business model for managing financial assets and the contractual cash flow characteristics of the financial assets to the following categories:

- Measured at amortised cost
- Measured at fair value through other comprehensive income
- Measured at fair value through profit or loss.

The classification is based on the Group's business model objective and the contractual cash flow characteristics of the investments. Purchases and sales of financial assets are recognised on the basis of the settlement date. At the time of initial recognition, the Group designates financial asset items as measured at fair value and, in the case of items not measured at fair value through profit or loss, the transaction costs directly attributable to the item will be added to or deducted from it. Financial assets measured at fair value through profit or loss are recorded at the time of initial recognition in the balance sheet at fair value and transaction costs are recognised in profit or loss.

Classified in the Financial assets measured at amortised cost category are financial assets for which the objective of the business model is to hold financial assets and to collect contractual cash flows consisting solely of capital and Interest payments. This item includes trade receivables, loan receivables and other receivables that are non-derivative financial assets. The assets classified in this category are measured at amortised cost under the effective interest rate method. The carrying amount of short-term receivables and other receivables is deemed to correspond to their fair value. These items are shown in the balance sheet as short-term assets if they are expected to be realised within 12 months of the end of the reporting period. The Group recognises an expected credit loss reduction from the financial assets measured at amortised cost.

The Group applies a simplified procedure for the determination of expected credit losses for trade receivables measured at amortised cost. Under the simplified procedure, credit losses are determined using the reserve matrix and recorded in the amount corresponding to the credit losses expected to occur over the remaining life of the financial asset. Expected credit losses are estimated based on information about past events. The model also takes into account forecasts of future economic conditions available at the reporting date.

In the financial statements of 2019 and 2018, no expected credit losses have been recorded for sales receivables due to good credit rating and outstanding receivables from customers.

Trade receivables will be recognised as final credit losses when there is objective evidence that the Group will not be able to collect all amounts. Any impairment is recognised in the income statement within operating expenses. When a trade receivable is uncollectable, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against operating expenses in the income statement.

Classified in the Financial assets measured at fair value through profit or loss category are financial assets that are acquired to be held for trading purposes or classified at the time of initial recognition to be measured at fair value through profit or loss. The Group's financial assets measured at fair value through profit or loss consist of investments in shares.

Financial assets are derecognised when the Group's contractual entitlement to cash flows has lapsed or been transferred to another party or when the Group has transferred significant ownership risks and revenues outside the Group.

Cash and cash equivalents

The Group's cash and cash equivalents consist of cash at bank and in hand.

Financial liabilities

Financial liabilities are classified into the following categories:

- Measured at amortised cost
- Measured at fair value through profit or loss.

Financial liabilities are recognised at fair value at the time of initial recognition and, in the case of a financial liability other than that recorded at fair value through profit or loss, transaction costs directly attributable to the item will be added to or deducted from it.

Financial liabilities posted at amortised cost are measured at amortised cost under the effective interest rate method. The difference between the amount received and the recoverable amount is recorded in the income statement under the effective interest rate method over the loan period. A financial liability is classified as current if the Group does not have an absolute right to move the debt payment by at least 12 months from the end date of the reporting period. A financial liability is derecognised from the balance sheet when the Group either pays the debt to the lender or has been legally exempted from the principal obligation relating to the liability as the result of a judicial process or by the lender. Interest-bearing liabilities are liabilities that either include a contractual interest component, or are discounted to reflect the fair value of the liability.

The interest-bearing loans, lease liabilities, and trade payables and other non-interest bearing liabilities included in the Group's financial liabilities are classified as liabilities measured at amortised cost.

At the time of closing the accounts, the Group has no financial liabilities recognised at fair value through profit or loss.

A financial liability is derecognised from the balance sheet when the Group either pays the debt to the lender or has been legally exempted from the principal obligation relating to the liability as the result of a judicial process or by the lender.

Derivatives and hedge accounting

Derivatives

The Group's subsidiary uses foreign exchange, interest and commodity derivatives to hedge the Group's exposure to risks arising from balance sheet items and foreign currency purchase and sales contracts. The derivatives used by Terrafame were acquired for hedging purposes, and hedge accounting has been applied to them. All derivatives are recognised initially at fair value. Unrealised change in the value of derivatives that are considered effective hedges are recognised at fair value in the balance sheet's fair value reserve as per the portfolio valuation report for the last day of the reporting period. The accounting process for gains and losses on fair value measurement is based on the purpose of use of the derivative contract.

The realised earnings-related impacts of changes in the value of effective hedging instruments that are covered by hedge accounting are presented uniformly with the hedged item. In the event of any ineffective hedging, changes in the fair value of hedging instruments are recognised in profit or loss.

Hedge accounting

The subsidiary applies hedge accounting to all hedging instruments. At the beginning of the hedging arrangement, the relationship between each hedging instrument and the hedged asset, as well as the risk management objectives, are documented by hedging instrument type. The effectiveness of the hedging relationship is assessed at the beginning of hedging and in quarterly accounts at a minimum.

If the hedging relationship no longer meets the hedge accounting criteria or the hedging instrument is sold, expires, or the related contract is terminated or realised, hedge accounting will be terminated prospectively.

Cash flow hedging

The subsidiary's hedging activities are entirely focused on cash flow hedging. The effective portion of changes in the fair values of derivatives acquired for the purpose of hedging forecasted cash flows are recognised at fair value through other comprehensive income in the fair value reserve under equity. The cumulative fair value is shown in the cash flow hedge reserve under equity. Changes in fair value are recognised in profit or loss for the same periods in which hedged cash flows affect the result. The subsidiary uses currency swaps and options as hedging instruments for future cash flows denominated in a foreign currency.

When hedge accounting for a cash flow hedge is terminated, the amount accumulated in the cash flow hedge reserve is included in equity until it is transferred to profit or loss for the same financial period in which the hedged expected future cash flows affect profit or loss. If the hedged future cash flows are no longer expected to occur, the amount accumulated in the cash flow hedge reserve will be immediately transferred as a reclassification adjustment to profit or loss.

Provisions, contingent liabilities and contingent assets

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, and when it is probable that an outflow of resources will be required to settle the obligation and a reliable estimate of the amount of the obligation can be made. If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, where appropriate, the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

Rehabilitation provision for mine closure and environmental clean-up costs

A rehabilitation provision for mine closure costs is made with respect to the estimated future costs of closure and restoration, and for environmental restoration and rehabilitation to the condition required by the environmental permits granted for mining operations.

Prevention of the threat of environmental pollution entails environmental and landscaping obligations. After mining operations have ceased, any machinery and equipment, chemicals, fuels and waste involving the risk of environmental pollution must be removed from the site. This will be carried out as part of normal mining operations. In addition, the open pit must be restored to the condition required by public safety.

The majority of the estimated restoration costs arises from the closure of waste rock dumps and primary and secondary leaching areas, the treatment and clean-up of primary and secondary leaching solution channels, the construction, covering and landscaping of gypsum ponds, the clean-up of waters and precipitates caused by the gypsum pond leak of 2012, the treatment of rock drainage, the fencing of open pits and the ex post supervision of the mining site.

The mine closure plan is based on the covering of areas with water- and oxygen-impermeable material, and long-term aftercare. It is assumed that environmental monitoring of the mine will continue for 30 years after closure of the mine.

Restoration costs have been estimated in accordance with the cost level at the date of closure of the accounts. The rehabilitation provision in Terrafame's balance sheet of 31 December 2019 and that of the corresponding consolidated balance sheet was EUR 157.4 million. Finance expenses in accordance with IFRIC 1:8 have not been presented since the company estimates that they will have little impact due to low interest rates.

Accounting policies requiring consideration by management and crucial factors of uncertainty associated with estimates

Estimates and assumptions regarding the future have to be made during the preparation of the financial statements, and the outcome may differ from the estimates and assumptions. Furthermore, the application of accounting policies requires consideration.

The estimates made when preparing the financial statements are based on the management's best knowledge at the balance sheet date. The estimates are based on prior experience, as well as future assumptions that are considered to be the most likely on the balance sheet date with regard to issues such as the expected development of the Group's economic operating environment in terms of sales and cost levels. The Group monitors changes on a regular basis using both internal and external sources of information, and any changes to these estimates and assumptions are entered in the accounts for the period in which the estimate or assumption is adjusted and for all periods thereafter.

Tangible and intangible assets

The management of Finnish Minerals Group has used professional judgment in the recognition of tangible and intangible assets in the balance sheet and in determining their useful lives, which has an impact on the consolidated balance sheet and the amount of depreciation to be recorded. Similarly, management is required to use its discretion in determining the useful lives of intangible assets identified in accordance with IFRS 3, and in determining the amortisation period. This affects the financial result for the period through depreciation and change in deferred taxes.

For tangible fixed assets, comparisons have been made of the market prices of similar assets, and the depreciation of the acquired assets due to aging, wear and other similar factors has been estimated. The fair value measurement of Intangible fixed assets is based on estimates of cash flows associated to fixed assets. Management considers the assumptions and estimates to be sufficiently accurate to provide a basis for estimating the fair value. The Group also reviews any indication of impairment loss of tangible and intangible fixed assets at each closing day of the financial statements.

Valuation of mineral resources and ore reserves

In the Group's mining operations, estimates have to be applied in recognising mineral resources acquired in business combinations as assets on the consolidated balance sheet. In the recognition and measurement of mineral resources and ore reserves, the Group utilises available third party analyses of the quantities, mineral content, estimated production costs and exploitation potential of the resource. The reliability of the evaluation and calculation basis for mineral resources and ore reserves is also a key consideration. In the mining and minerals business, mineral resources and ore reserves are commonly classified into categories such as 'measured' and 'indicated' ore reserves, and 'proven' and 'probable' mineral resources.

Rehabilitation provisions

The Group assesses the rehabilitation liabilities associated with its mines and production facilities annually. The amount of provision reflects the management's best estimate of the rehabilitation costs. In determining the amount of provision, the Group has listed matters that it will rehabilitate and/or restore to the condition required by the licence terms in accordance with the nature of its operations and the official permit conditions. The Group estimates that it will take rehabilitation measures in connection with its mining operations or, at the latest, in connection with mine closure. These measures are estimated to take a few years after the mine closure.

On the balance sheet date, the Group has estimated the extent and unit cost of the various matters requiring rehabilitation and calculated the rehabilitation provision accordingly. In estimating the extent and unit cost of the various matters, the Group has used its best in-house experts in the matters in question.

In determining the fair value of the provisions, assumptions and estimates are made in relation to discount rates, the expected cost to rehabilitate the area and remove or cover the contaminated soil from the site, the expected timing of those costs, and whether the obligations stem from past activity. These uncertainties may cause the actual rehabilitation costs to differ from the provision which has been made.

Definition of value of work in progress

The value of inventories determined in accordance with the principle of net realisation value includes discretionary factors concerning, for instance, the measurement of metal volume in work in progress, metals recovery percentages, production costs, the production time necessary to complete sales, and sales prices.

Valuation of financial assets recognised at fair value through profit or loss

Financial assets at fair value consist of investments for which no direct market quotation is available. The fair values of these investments are based on valuation models including professional judgment by management. During the financial year 2018, special consideration has been applied in the valuation of the Group's investments in Ferrovan Oy, which have been deemed to have a fair value of zero in the financial statements for 2018. During the financial year 2019, management used its discretion in the valuation of investments in associated companies in the manner described in the notes to the financial statements.

Leases

To process leases in accordance with

IFRS 16, estimates and assumptions made by management must be used, inter alia, when assessing factors that have an impact on defining the lease term as well as leases that are valid until further notice. In addition, management's assumptions are used when assessing leases with termination or continuation options. Management's estimates are also required to determine which discount rate to use. Management's estimates have an impact on the amount of right-of-use assets and lease liabilities in the balance sheet, as well as on the recording of income and expenses in the income statement.

New and revised standards applicable to future financial years, and their interpretations

At the reporting date of 31 December 2019, new and amended standards or interpretations are assumed not to have had any impact on the consolidated financial statements of Finnish Minerals Group.

1 NOTES

1.1 Net sales

	2019	2018
Breakdown by sector		
Metal	310,426	325,830
Other service	10	0
Total	310,436	325,830
Geographical breakdown		
Europe	310,194	324,353
Asia	0	401
United States	242	1,074
Australia	0	2
Total	310,436	325,830

1.2 Employee benefit expenses and total depreciation

	2019	2018
Wages and salaries	35,640	31,886
Pension costs	6,584	5,906
Other social security expenses	1,126	1,211
Total	43,349	39,003
The Group's average number of employees during the financial year	736	677
The Group's number of employees at the end of the financial year	768	677

Total depreciation, amortisation and impairment charges	**2019**	**2018**
Intangible rights	466	383
Other long-term expenditure	25	25
	491	408
Tangible assets		
Buildings	4,078	4,169
Machinery and equipment	20,844	19,877
Right-of-use assets, machinery and equipment	2,740	0
Other tangible assets	10,512	6,741
	38,175	30,787
Total	38,666	31,195

1.3 Cost of goods sold

	2019	2018
Materials and services		
Raw materials and consumables		
Purchases during the financial year	119,045	142,263
Change in inventory	1,625	-3,883
	120,671	138,380
External services	66,344	73,699
Total	187,015	212,079
Change in inventory, products		
Change in inventory		
Change in inventory, semifinished products	-15,583	-32,628
Change in inventory, finished products	-5,004	5,937
Total	-20,587	-26,691
Personnel expenses		
Wages and salaries	27,806	26,489
Pension costs	5,155	4,965
Other social security expenses	857	1,018
Total	33,818	32,472
Depreciation, amortisation and impairment charges		
Intangible rights	333	330
Tangible assets		
Buildings and structures	3,984	4,098
Machinery and equipment	20,678	18,448
Other tangible assets	10,458	6,730
Total	38,143	30,982
Other costs of goods sold	54,397	53,040
Total	**292,786**	**301,881**

1.4 Other operating income

	2019	2018
Revaluation of biological assets	262	1,476
Insurance claims	400	227
Grants received	495	0
Proceeds from sale of tangible and intangible assets	184	1
Other fees and compensation, including sales of scrap metal and proceeds from tree felling	665	830
Total other operating income	**2,005**	**2,534**

1.5 Sales and marketing expenses

	2019	2018
Personnel expenses		
Wages and salaries	806	703
Pension costs	147	133
Other social security expenses	25	30
Total	979	866
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	0	0
Total	0	0
Other expenses		
Sales and marketing misc. charges	412	494
Total	412	494
Total sales and marketing expenses	**1,391**	**1,360**

1.6 Administrative expenses

	2019	2018
Personnel expenses		
Wages and salaries	4,442	3,769
Pension costs	786	634
Other social security expenses	144	126
Total	5,372	4,529
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	277	209
Total	277	209
Other expenses		
Other administrative expenses	13,666	12,160
Total	13,666	12,160
Auditors' fees		
Auditing	134	104
Certificates and statements	23	0
Tax advisory services	31	4
Other services	30	77
	219	**184**
Total administrative expenses	**19,534**	**17,082**

1.7 Other operating expenses

	2019	2018
Research and development costs		
Total research and development costs recognised as an expense	1,964	852
Personnel expenses		
Wages and salaries	653	522
Pension costs	120	100
Other social security expenses	20	22
Total	793	644
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	215	4
Total	215	4
Other expenses		
Other operating expenses	4,820	4,237
Total	4,820	4,237
Total other operating expenses	**7,793**	**5,737**

1.8 Finance income and cost

	2019	2018
Finance income		
Interest income from other deposits	89	170
Foreign exchange gains	541	1,064
Other finance income	614	632
Total finance income	**1,244**	**1,865**
Change in fair value of financial assets at fair value		
Change in fair value, other investments	-8,155	-4,441
Change in fair value, financial securities	0	-6,306
Total impairment charges	**-8,155**	**-10,747**
Finance expenses		
Other interest expenses	-8,015	-6,671
Foreign exchange losses	-1,901	-4,210
Other finance expenses	-4,570	-4,193
Share of profit from associated company and joint venture	-1,094	0
	-15,580	**-15,074**
Total finance income and cost	**-22,491**	**-23,955**

In the financial year 2018, the fair value reduction shown in the table above has been recorded in Finnish Minerals Group's financial statements in respect of the convertible bond and the associated option rights issued to Ferrovan Oy. The write-down consists of EUR 4.4 million for the option value (in other shares), EUR 6.3 million for the convertible bond (in other receivables) and EUR 0.2 million for the interest receivable (prepaid expenses and accrued income).

Other finance expenses for the financial year 2019 include interest expenses of EUR 4.2 million (2018: EUR 4.2 million), which relate to the fair value of cancelled options during the financial year. Finance expenses in accordance with IFRIC 1:8 and associated with the cancellation of discounting for environmental provisions have not been presented, since the company estimates that they will have little impact due to low interest rates.

1.9 Income taxes

	2019	2018
Income taxes in the income statement		
Tax based on taxable income for the financial period	0	0
Taxes from previous periods	0	0
Tax based on taxable income for the period	0	0
Deferred taxes	-60	-498
Income tax expense	**-60**	**-498**
The Finnish corporate tax rate in the financial year 2019 and the reference year was 20.0%		
Deferred tax on the balance sheet	**-355**	**-2 118**

1.10 Earnings per share

The basic earnings per share are calculated by dividing the profit attributable to the parent company's shareholders by the weighted average number of ordinary shares in issue during the financial period.

	2019	2018
Profit/loss for the period attributable to owners of the parent	-25,905	-19,914
Weighted average number of shares during the period	535,908	496,208
Basic earnings per share, EUR/share	-48,34	-40,13

1.11 Business acquisitions and divestitures

The Group made no business acquisitions in the financial year 2019 or 2018.

1.12 Intangible assets

	Intangible rights	Other intangible assets	Investments in progress	Total
Acquisition cost 1 Jan 2018	1,868	144	338	2,350
Increase	44	0	154	198
Activated during the period	491	0	-491	0
Acquisition cost 31 Dec 2018	**2,404**	**144**	**0**	**2,548**
Accumulated depreciation and write-downs 1 Jan 2018	-631	-44	0	-676
Depreciation for the year	-383	-25	0	-408
Accumulated depreciation 31 Dec 2018	**-1,015**	**-69**	**0**	**-1,084**
Carrying amount 31 Dec 2018	**1,389**	**75**	**0**	**1,464**
Acquisition cost 1 Jan 2019	2,404	144	0	2,548
Increase	14	0	92	107
Acquisition cost 31 Dec 2019	**2,418**	**144**	**92**	**2,654**
Accumulated depreciation and write-downs 1 Jan 2019	-1,015	-69	0	-1,084
Depreciation for the year	-466	-25	0	-491
Accumulated depreciation 31 Dec 2019	**-1,481**	**-94**	**0**	**-1,575**
Carrying amount 31 Dec 2019	**937**	**50**	**92**	**1,079**

1.13 Property, plant and equipment

	Land	Buildings	Machinery and equipment	Other tangible assets	Advance payments and acquisitions in progress	Total
Acquisition cost 1 Jan 2018	270	67,708	120,119	96,073	45,950	330,120
Increase	1,129	0	10,563	0	69,766	81,459
Activated during the period	0	6,744	27,062	55,099	-88,906	0
Decrease	0	0	-88	0	0	-88
Transfers between items	0	-3,780	296	3,484	0	0
Acquisition cost 31 Dec 2018	**1,399**	**70,672**	**157,953**	**154,656**	**26,810**	**411,490**
Accumulated depreciation and write-downs 1 Jan 2018	0	-7,888	-23,247	-7,176	0	-38,311
Decrease	0	37	-2	-35	0	0
Accumulated depreciation on decreases and transfers	0	0	67	0	0	67
Depreciation for the year	0	-4,169	-19,877	-6,741	0	-30,787
Accumulated depreciation 31 Dec 2018	**0**	**-12,019**	**-43,060**	**-13,952**	**0**	**-69,031**
Carrying amount 31 Dec 2018	**1,399**	**58,653**	**114,893**	**140,704**	**26,810**	**342,460**
Acquisition cost 1 Jan 2019	1,399	70,672	157,953	154,656	26,810	411,490
Increase	10	0	27,099	0	115,893	143,001
Activated during the period	0	159	9,408	21,828	-31,395	0
Decrease	0	0	-14,208	0	0	-14,208
Transfers between items	0	-5,965	-609	5,965	0	-609
Acquisition cost 31 Dec 2019	**1,409**	**64,866**	**179,643**	**182,449**	**111,308**	**532,675**
Accumulated depreciation and write-downs 1 Jan 2019	0	-12,019	-43,060	-13,952	0	-69,031
Decrease		445	0	-445	0	0
Accumulated depreciation on decreases and transfers	0	0	1,655	0	0	1,655
Depreciation for the year	0	-4,078	-23,822	-10,512	0	-38,412
Accumulated depreciation 31 Dec 2019	**0**	**-15,652**	**-65,226**	**-24,910**	**0**	**-105,787**
Carrying amount 31 Dec 2019	**1,409**	**49,215**	**114,417**	**157,539**	**111,308**	**433,888**

In October 2018, the Board of Directors of the subsidiary, Terrafame, made the decision to invest EUR 240.0 million in building a new battery chemicals plant. The aim is that the plant will be completed at the end of 2020 and that commercial production will start at the beginning of 2021.

Finance leases

In 2018, machinery and equipment include assets acquired through finance leases in which the Group entity is a lessee.

	31 Dec 2018
Acquisition cost	4,538
Accumulated depreciation	2,886
Carrying amount 31 Dec	**1,652**

Right-of-use assets, machinery and equipment	Land	Buildings	Machinery and equipment	Other tangible assets	Advance payments and acquisitions in progress	Total
Acquisition cost 1 Jan 2018	0	0	4,402	0	0	4,402
Increase	0	0	136	0	0	136
Activated during the period	0	0	0	0	0	0
Decrease	0	0	0	0	0	0
Transfers between items	0	0	0	0	0	0
Acquisition cost 31 Dec 2018	**0**	**0**	**4,538**	**0**	**0**	**4,538**
Accumulated depreciation and write-downs 1 Jan 2018	0	0	-1,510	0	0	-1,510
Decrease	0	0	0	0	0	0
Accumulated depreciation on decreases and transfers	0	0	0	0	0	0
Depreciation for the year	0	0	-1,376	0	0	-1,376
Accumulated depreciation 31 Dec 2018	**0**	**0**	**-2,886**	**0**	**0**	**-2,886**
Carrying amount 31 Dec 2018	**0**	**0**	**1,652**	**0**	**0**	**1,652**
Acquisition cost 1 Jan 2019	**0**	**0**	**4,538**	**0**	**0**	**4,538**
Increase	0	0	17,799	0	0	17,799
Activated during the period	0	0	0	0	0	0
Decrease	0	0	0	0	0	0
Transfers between items	0	0	-609	0	0	-609
Acquisition cost 31 Dec 2019	**0**	**0**	**21,728**	**0**	**0**	**21,728**
Accumulated depreciation and write-downs 1 Jan 2019	**0**	**0**	**-2,886**	**0**	**0**	**-2,886**
Decrease	0	0	0	0	0	0
Accumulated depreciation on decreases and transfers	0	0	0	0	0	0
Depreciation for the year	0	0	-2,977	0	0	-2,977
Accumulated depreciation 31 Dec 2019	**0**	**0**	**-5,863**	**0**	**0**	**-5,863**
Carrying amount 31 Dec 2019	**0**	**0**	**15,865**	**0**	**0**	**15,865**

IFRS 16 Leases – Notes to the standard
Maturity analysis

	2019
Up to one year	3,360
More than a year, but no more than five years	11,887
More than five years	0
Carrying amount 31 Dec 2019	**15,248**

Items recognised through profit or loss	**2019**
Lease expenses of low-value assets (not short-term leases)	39
Lease expenses of short-term leases	3,344
Depreciation of right-of-use assets by asset category (machinery and equipment) (included in item 'Depreciation, amortisation and impairment charges')	2,741
Interest expenses on leases (included in item 'Interest expenses')	370

The lease expenses itemised above include an item 'Other operating expenses'.

Items recognised in the cash flow statement	
Total cash outflow from leases	5,934

1.14 Biological assets

In connection with the business acquisition, Terrafame became the owner of a mining concession, which includes biological assets (forest). The forests are managed in accordance with a forest management plan. Approximately one third of the mining concession area has been taken into production use. As the mining operations continue, more areas will be taken into use and, at the same time, forests will be cleared.

Biological assets have been measured at fair value based on a third-party estimate, less sales-related costs. Growing stock and seeding stand have been measured at fair value, separately from land. Seeding stands have no value in timber trade since the trees will not be saleable until after 25–30 years. The value of seeding stands has been taken into account in the value of forests by discounting them at 31 December 2019 (time 25 years, interest rate 5 per cent).

Biological assets	**31 Dec 2019**	**31 Dec 2018**
Value of growing stock	6,868	6,604
Value of seeding stands	106	108
	6,974	6,712
Total growing stock, m³	307,422	298,008
Total seeding stands, ha	321,0	331,8

Balance at 1 Jan 2018	**5,236**
Gains and losses on fair value measurement	1,476
Balance at 31 Dec 2018	**6,712**
Balance at 1 Jan 2019	**6,712**
Gains and losses on fair value measurement	262
Balance at 31 Dec 2019	**6,974**

1.15 Investments in other shares and participations

Non-current	**31 Dec 2019**	**31 Dec 2018**
Investments in other shares and participations	11,423	13,554
Balance at 31 Dec	11,423	13,554

	Holdings in associated companies	**Other shares and participations**	**Total**
Acquisition cost 1 Jan 2018	0	0	0
Increase	0	17,994	17,994
Acquisition cost 31 Dec 2018	0	17,994	17,994
Accumulated impairment losses 1 Jan 2018	0	0	0
Decrease in fair value	0	-4,441	-4,441
Accumulated impairment losses 31 Dec 2018	0	-4,441	-4,441
Carrying amount 31 Dec 2018	0	13,554	13,554
Acquisition cost 1 Jan 2019	0	17,994	17,994
Increase	0	6,024	6,024
Transfers between items	18,503	-18,503	0
Acquisition cost 31 Dec 2019	18,503	5,515	24,018
Accumulated impairment losses 1 Jan 2019	0	-4,441	-4,441
Impairment losses	-8,155	0	-8,155
Accumulated impairment losses 31 Dec 2019	-8,155	-4,441	-12,596
Gain on revaluation	0	0	0
Carrying amount 31 Dec 2019	10,349	1,074	11,423

31 Dec 2018

	Company holdings	Book-entry	Quantity/pcs	Carrying amount
Ferrovan Oy, Oulu, Finland		Option right	623,659	0
Keliber Oy, Kaustinen, Finland	17,6 %	Class B shares	190,662	12,480
Sotkamo Silver AB, Stockholm, Sweden	n. 2,1 %	Book-entry shares	2.685,952	1,074
				13,554

31 Dec 2019

	Company holdings	Book-entry	Quantity/pcs	Carrying amount
Ferrovan Oy, Oulu, Finland		Option right	623,659	0
Keliber Oy, Kaustinen, Finland	24,3 %	Class B shares	313,599	10,349
Sotkamo Silver AB, Stockholm, Sweden	n. 2,0 %	Book-entry shares	2.685,952	1,074
				11,423

In the financial year 2019, the Group's proportionate share of the profit from the associated company, EUR -1 094 thousand, has been accounted for in Investments in other shares and participations.

1.16 Other receivables

Non-current	31 Dec 2019	31 Dec 2018
Other receivables		
Accounts receivable put options	4,621	8,776
	4,621	**8,776**

	Other receivables	Total
Acquisition cost 1 Jan 2018	0	0
Increase	6,306	6,306
Acquisition cost 31 Dec 2018	6,306	6,306
Accumulated impairment losses 1 Jan 2018	0	0
Decrease in fair value	-6,306	-6,306
Accumulated impairment losses 31 Dec 2018	-6,306	-6,306
Carrying amount 31 Dec 2018	0	0

A write-down for the total value of the convertible bonds issued to Ferrovan Oy, EUR 6.3 million, has been recorded in the financial statements of Finnish Minerals Group for the financial year 2018 under Other receivables.

1.17 Inventories

	31 Dec 2019	31 Dec 2018
Raw materials and consumables	25,016	26,642
Work in progress	186,237	170,654
Finished products	6,904	1,900
	218,157	**199,196**

The value of raw materials and consumables on 31 December 2019 includes a provision of EUR 6.4 million for slow-moving inventory, which reduces the value of inventory. The corresponding provision on 21 December 2018 amounted to EUR 4.6 million. Furthermore, at the time of carrying out inventory for the financial period 2018, an inventory obsolescence reserve of EUR 1.3 million was set aside for the raw materials and consumables inventory, which also reduced the value of inventory. The value of inventory in the financial year 2019 has been updated accordingly.

1.18 Trade receivables and other receivables

Current	**31 Dec 2019**	**31 Dec 2018**
Trade receivables	15,270	16,995
Prepaid expenses and accrued income	7,627	9,483
Derivative assets	6,364	10,945
Accounts receivable put options	4,155	4,155
Collateral	208	183
Other receivables	34	873
	33,658	**42,634**

Aging of trade receivables and items recognised as credit loss	**31 Dec 2019**	**31 Dec 2018**
Undue	15,263	16,994
Overdue	0	0
Under 30 days	0	1
30–60 days	6	0
61–90 days	0	0
More than 90 days	0	0
	15,270	**16,995**
Recognised impairment losses	0	0

Impairment losses have not been recognised for the Group because the company does not deem it necessary to have provisions for future impairment losses due to the good credit ratings and payment practices of customers.

Current receivables by currency, EUR	**31 Dec 2019**	**31 Dec 2018**
USD	11,460	28,351
EUR	22,142	14,487
AUD	55	0
	33,658	**42,838**

Muut saamiset koostuvat seuraavista eristä:		
Loan receivable	0	0
Value added tax receivables	32	873
	32	**873**

1.19 Cash and cash equivalents

	31 Dec 2019	**31 Dec 2018**
Cash in hand and at banks	152,682	173,559
	152,682	**173,559**

1.20 Notes on shareholders' equity

The parent company's share capital entered in the trade register on 31 December 2019 was EUR 2 258 thousand, divided into 535,908 shares of the same value. The nominal value of the share has not been specified. There were no changes in share capital during the financial year 2019 or 2018.

	2019		2018	
Subscribed capital	Number of shares	Subscribed capital	Number of shares	Subscribed capital
1.1.	535,908	2,258	469,100	2,258
Issued shares	0	0	66,808	0
Subscribed capital 31 Dec	**535,908**	**2,258**	**535,908**	**2,258**

The invested unrestricted equity fund comprises other investments in the nature of equity and the subscription price of shares, insofar as this is not credited to the share capital on the basis of a specific decision.

	2019		2018	
Invested unrestricted equity fund	Number of shares	Subscription price	Number of shares	Subscription price
1.1	535,908	533,651	469,100	466,843
Issued shares	0	22,500	46,000	46,000
Contribution in kind	0	0	20,808	20,808
Invested unrestricted equity fund 31 Dec	**535,908**	**556,151**	**535,908**	**533,651**

Authorisations given by the Annual General Meeting

On 9 November 2017, the Annual General Meeting of the Group's subsidiary authorised the Board of Directors to decide on the issue of shares and the issuance of special rights entitling to shares. A maximum of 725,585 shares in the Group's subsidiary and special rights entitling to shares may be issued under the authorisation. On 24 October 2018, the Annual General Meeting of the Group's subsidiary authorised the Board of Directors to decide on the issue of shares and the issuance of special rights entitling to shares. A maximum of 592,527 shares in the Group's subsidiary and special rights entitling to shares may be issued under the authorisation. Most of the authorisations had been used at the date of closing the accounts.

Options and other special rights

The end dates of the subscription periods for options issued by the Group's subsidiary Terrafame are 31 December 2022 for the first tranche and 31 December 2023 for the second and third tranches. The end date of the subscription period for options granted during the financial year 2019 is 24 April 2024 for the fourth and fifth tranches. The options can be transferred to the permitted transferees. Both the direct and indirect pledging of options are prohibited. The subscription prices agreed for the options rights are EUR 176.46 for tranches 1–3 and EUR 184.48 for tranches 4–5. A sixth tranche of 93,460 options was also granted during the financial year 2019. At the time of closing the accounts, these options had not yet been entered in the Trade Register.

Options and other special rights	**31 Dec 2019**	**31 Dec 2018**
Tranche 1 Maximum number of issued shares, pcs	566,712	566,712
Tranche 2 Maximum number of issued shares, pcs	244,265	244,265
Tranche 3 Maximum number of issued shares, pcs	244,264	244,264
Tranche 4 Maximum number of issued shares, pcs	140,190	0
Tranche 5 Maximum number of issued shares, pcs	93,460	0
	1.288,891	**1.055,241**

The option rights of Tranche 1 are related to a loan realised during the financial year 2017. The loan was granted in US dollars and the loan amount was agreed in euros. In the consolidated financial statements, the options of Tranche 1 have been valued at a fair value of EUR 36.66 per share and amortised as an interest expense until their realisation date. Fair values have not been measured for the option rights of the other tranches in accordance with IAS 32.

Share of non-controlling interests

Non-controlling interests accounted for EUR 100.9 million of the Group's equity in the financial year 2019 (2018: EUR 116.3 million). This holding of the Group consists of financing arrangements made during the financial year 2017 and 2018, and it concerns the Group's subsidiary, Terrafame Oy, for which the non-controlling interest was approximately 28.2 per cent on the balance sheet date (2018: 23.0%).

1.21 Notes to hedging derivatives

	31 Dec 2019			31 Dec 2018			2019	2018
	Positive fair values	Negative fair values	Net fair values	Positive fair values	Negative fair values	Net fair values	Nominal amounts in USD	Nominal amounts in USD
Currency and interest rate derivatives								
Currency forwards	565	1,358	-793	176	529	-353	177,000	91,000
Currency options	0	0	0	198	693	-495	0	128,000
Metal derivatives							Tonnes	Tonnes
Nickel forwards	1,904	5,876	-3,972	5,627	224	5,404	8,600	3,200
Nickel options	0	0	0	0	0	0	0	0
Zinc forwards	3,649	0	3,649	377	404	-27	17,800	700
Zinc options	601	601	0	6,502	1,374	5,128	0	27,300
Total derivatives	6,719	7,835	-1,117	12,881	3,224	9,658		
Deduct long-term derivatives								
Zinc derivatives	0	0	0	574	105	469		
Current	6,719	7,835	-1,117	12,308	3,119	9,189		

	31 Dec 2019	**31 Dec 2018**
Gross assets on the balance sheet (included in prepaid expenses and accrued income)	6,364	10,945
Gross liabilities on the balance sheet (included in accruals and deferred income)	7,500	2,967

The fair value calculation of hedges is based on market rates and quotations on the balance sheet date in accordance with the hedging portfolio. Counterparties for derivative transactions have been approved in accordance with the company's hedging policy. Intercompany receivables and liabilities are connected on a transaction level with each counterparty and accounted for on a daily level by transaction.

The importance of hedging instruments to the company's financial position and projected profitability for the next 12 months was high on 31 December 2019. The company had set up a cash flow hedge against a weakening US dollar with a hedging rate of approximately 50 per cent. The company had set up a cash flow hedge against a decline in the price of nickel for forecasted deliveries during the coming year using derivatives and fixed-price sales agreements with a hedging rate of approximately 70 per cent. The company's cash flow hedge against forecasted deliveries of zinc had a hedging rate of approximately 25 per cent. In addition, in line with its hedging policy, the company had set up hedges for almost all of its nickel and zinc deliveries, which had been completed and previously reported as sales. As a result, the change in market prices after the closing of the accounts has hardly no effect on the sales revenue recognised for nickel and zinc deliveries completed during the financial year 2019.

1.22 Deferred tax assets and tax liabilities

Deferred taxes	31 Dec 2019	31 Dec 2018
On the balance sheet		
Derivatives		
Deferred tax asset	227	0
Deferred tax liability	0	-1,596
Biological assets		
Deferred tax liability	-372	-320
Finance leases		
Deferred tax liability	-210	-203
Balance at 31 Dec	-355	-2,118
Unrecognised deferred tax assets		
From confirmed profit/loss		
Deferred tax asset	32,200	33,325
Deferred depreciation		
Deferred tax asset	9,171	5,550

The Finnish corporate tax rate in the financial year 2019 and the reference year was 20.0 per cent.

On 31 December 2019, the Group companies had unrecognised deferred tax assets of approximately EUR 32.2 million, which consisted of the estimated taxable income for the financial year 2019 (tax liability of EUR 2.0 million), the taxable income for the financial year 2018 (tax liability of EUR 3.3 million), the taxable income for the financial year 2017 (tax liability of EUR 0.5 million), the confirmed loss for the financial year 2016 (tax receivable of EUR -20.9 million), and the confirmed loss for the financial year 2015 (tax receivable of EUR -17.1 million). The losses will expire in 2025–2029.

With respect to the rehabilitation provision recorded in connection with the acquisition of the mining business, a deferred tax asset of approximately EUR 32 million has not been recognised. The utilisation of deferred tax assets involves uncertainties. For this reason, the above deferred tax assets have not been recognised in the balance sheet.

1.23 Contingent liabilities and other liabilities

Amounts due on leases and leasing commitments	31 Dec 2019	31 Dec 2018
Within one year	500	408
After one year but within five years	896	413
Total	**1,396**	**822**
Fixed assets serving as collateral for hire-purchase debt	**425**	**307**
Amount of debt		
Within one year	137	155
After one year but within five years	313	143
Total	**450**	**298**
Bank deposits	**150**	**150**
Total	**1,996**	**1,270**

Securities complying with environmental and mining permits

Beneficiary	Type of security	31 Dec 2019 Amount of security	31 Dec 2018 Amount of security
Kainuu Centre for Economic Development, Transport and the Environment; securities in accordance with permit condition 117	Credit insurance	122,030	112,975
Security in accordance with permit decision no. 33/07/1	Bank guarantee	1,500	1,500
Security in accordance with permit decision no. 43/2014/2	Bank guarantee	6	6
Security in accordance with permit decision no. 43/2015/1	Bank guarantee	100	100
Security in accordance with permit decision no. 3/2017/1	Bank guarantee	50	50
Security in accordance with permit decision no. 76/2017/1		100	100
Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819	Bank guarantee	100	100
Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819	Bank guarantee	35	35
Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819	Bank guarantee	50	50
Total		**123,971**	**114,916**
Other collateral	Bank guarantee	2,453	953
Real estate investments' VAT refund liability		**3,644**	**5,366**
Business mortgages		**320,000**	**320,000**
Real estate mortgage		**1.200,079**	**1.200,079**
Mining certificate, Mining Register registration number 2819, mining concession	Pledge	**Yes**	**Yes**

For the financial year 2019, Terrafame has a pledge account for the benefit of Customs. Terrafame also has a supply contract bank guarantee for the supplier's benefit in the amount of EUR 1.5 million.

1.24 Financial risk management

The nature of Finnish Minerals Group's business exposes the company to foreign exchange, commodity price, credit and liquidity risks. The goal of the Group's financial risk management is to minimise the negative effects of changes in financial and commodity markets on its result and cash flow.

Terrafame's commercial and finance department identifies and assesses risks, acquires the instruments needed to hedge against risks, and reports on risks and any changes therein to the CEO and the Board of Directors. Hedging transactions are carried out in accordance with the principles approved by the Board of Directors. If necessary, forward exchange agreements and options, foreign currency loans, interest rate swaps and nickel and zinc forwards, and options are used in financial risk management. The financial structure of Terrafame Group's subsidiaries is planned, assessed and controlled while taking financial risk management into account.

Currency risks

Since Finnish Minerals Group operates in the euro area and sales are made in US dollars, the company's business operations involve currency risks.

In 2019, the Group had USD-denominated sales worth approximately EUR 310.4 million (2018: 325.8 million). Any changes in the value of EUR/USD would have affected the Group's net sales and profitability by about 0.30 fold. The currency hedging for the year 2019 dilutes the impact of exchange rate variations.

Interest rate risk

At the date of closing the accounts, the consolidated balance sheet showed EUR 172.8 million in interest-bearing liabilities (2018: 93.9 million). On the same date, the repayment period of interest-bearing liabilities was 4 years. This calculation includes all of the liabilities for which a repayment period can be defined. The company has not taken any special measures to hedge against interest rate risks during the financial year.

Reasonably possible changes in the interest rate level would not have had a significant effect on the Group's result and shareholders' equity.

Credit risk

Finnish Minerals Group's documented procedures and practices define the principles and responsibilities of credit control. Once a new customer agreement has been signed, the Group estimates its expected annual volume and share of net sales, as well as the customer's creditworthiness.

No credit losses have been recognised for the financial year 2019 or 2018. Credit insurance has not been applied to secure trade receivables.

The aging schedule for trade receivables is presented in Note 1.18.

Capital management

The aim of the Group's capital management is to support business through an optimal capital structure and increase shareholder value by aiming at the highest possible return. An optimal capital structure also ensures smaller capital costs.

Developments in capital structure are monitored through the equity-to-assets ratio. The equity ratio on 31 December 2019 was 53.5 per cent (31 December 2018: 59.7%).

Liquidity risk

Finnish Minerals Group continuously assesses and monitors the amount of financing required for business operations, so that the Group has sufficient liquid funds to finance its operations.

The maturity distribution based on debt contracts is as follows:

31 Dec 2019	**Carrying amount**	**Cash flow**	**0–6 mths**	**6 mths–1 yr**	**1–2 yrs**	**More than 2 yrs**
Interest-bearing liabilities	172,788	174,184	11,557	20,874	41,792	99,962
Accounts payable	50,039	50,039	50,039	0	0	0
31 Dec 2018	**Carrying amount**	**Cash flow**	**0–6 mths**	**6 mths–1 yr**	**1–2 yrs**	**More than 2 yrs**
Interest-bearing liabilities	93,853	94,111	295	268	26,757	66,790
Accounts payable	47,552	47,552	47,552	0	0	0

Liquidity risk related to business continuity is described in the accounting policies.

Market risk

The Group's sales in 2019 amounted to EUR 310.4 million (2018: 325.8 million). Selling prices are affected by worldwide prices of nickel and zinc. Some changes in the nickel market price would have affected the Group's net sales and profitability for the financial year 2019 by around 0.35 fold and changes in zinc prices by around 0.1 fold. Nickel and zinc hedges made for the year 2019, as well as fixed-price contracts, dilute the impact of market prices on profit/loss.

1.25 Provisions – rehabilitation provision

Long-term provisions on the balance sheet are related to the environmental and rehabilitation liabilities associated with the Group's mine and production plants. The provisions are based on estimates of future liabilities.

Non-current

Rehabilitation provision, in euro	**31 Dec 2019**	**31 Dec 2018**
At beginning of year	158,363	159,412
Decrease	965	1,049
At end of year	157,398	158,363
Total non-current	**157,398**	**158,363**
Estimated cost of the rehabilitation provision		
Rehabilitation of primary and secondary heaps and gypsum pond area	126,815	127,780
Repair of damages resulting from gypsum pond leak in 2012	20,000	20,000
Rehabilitation and fencing of the open pit area	2,583	2,583
Ex-post monitoring of mining site after completion of rehabilitation measures	8,000	8,000
Total estimated rehabilitation costs	**157,398**	**158,363**

1.26 Interest-bearing and non-interest bearing liabilities

Non-current financial liabilities measured at amortised cost	**31 Dec 2019**	**31 Dec 2018**
Loans from financial institutions – finance loan	128,656	92,991
Other payables – hire-purchase debt	313	143
Lease liability	11,887	364
Total	**140,857**	**93,499**
Current financial liabilities measured at amortised cost		
Loans from financial institutions – finance loan	28,434	
Other payables – hire-purchase debt	137	155
Lease liability	3,360	199
Total	**31,931**	**354**

The fair values of current and non-current liabilities do not differ significantly from their carrying amounts. The finance loan includes option rights that are recognised at fair value in the consolidated financial statements. The explanatory note for the stock options is in the notes on equity (see 1.20).

1.27 Provisions, trade and other payables

Current	**2019**	**2018**
Advances received	213	419
Accounts payable	50,039	47,552
Accruals and deferred income	9,419	11,514
Derivatives	7,500	2,967
Other payables	2,745	853
	69,915	**63,304**

Non-interest bearing liabilities by currency, EUR	**2019**	**2018**
USD	9,876	5,442
GBP	2	2
SEK	0	14
EUR	60,037	57,847
	69,915	**63,304**

During the financial year 2018 and 2017, derivative assets and liabilities were recognised at fair value. A breakdown of these is presented in the Notes to hedging derivatives (see 1.21)

Classification of financial assets and liabilities

31 Dec 2019

	Carrying amount			Total carrying amount	Fair value	Level 1	Level 2	Level 3
	Measured at amortised cost	Measured at fair value through profit or loss	Financial assets covered by					
Hedge accounting								
Investments in shares and participations		10,329		10,329	10,329	1,074		9,255
Accounts receivable put options		8,776		8,776	8,776		8,776	
Derivatives			6,364	6,364	6,364		6,364	
Trade receivables	15,270			15,270	15,270			
Cash and cash equivalents	152,682			152,682	152,682			
Total	**167,952**	**19,105**	**6,364**	**193,421**	**193,421**			
Financial liabilities								
Loans from financial institutions	157,090			157,090	157,090			
Other payables – hire-purchase debt	450			450	450			
Finance lease liabilities	15,248			15,248	15,248			
Accounts payable	50,039			50,039	50,039			
Derivatives			7,500	7,500	7,500		7,500	
Total	**222,827**	**0**	**7,500**	**230,327**	**230,327**			

For financial assets and liabilities measured at amortised cost, the carrying amount is considered to be the best estimate of their fair value. The Group made no transitions between the classification levels of fair value during the financial year.

31 Dec 2018

	Carrying amount			Total carrying amount	Fair value	Level 1	Level 2	Level 3
	Measured at amortised cost	Measured at fair value through profit or loss	Financial assets covered by					
Hedge accounting								
Investments in shares and participations		13,554		13,554	13,554	1,074		12,480
Accounts receivable put options		8,776		8,776	8,776		8,776	
Derivatives			10,945	10,945	10,945		10,945	
Trade receivables	16,995			16,995	16,995			
Cash and cash equivalents	173,559			173,559	173,559	173,559		
Total	**190,554**	**22,330**	**10,945**	**223,829**	**223,829**			
Financial liabilities								
Loans from financial institutions	92,992			92,992	92,992		92,992	
Other payables – hire-purchase debt	298			298	298		298	
Finance lease liabilities	564			564	564		564	
Accounts payable	47,552			47,552	47,552			
Derivatives			2,967	2,967	2,967		2,967	
Total	**141,406**	**0**	**2,967**	**144,373**	**144,373**			

Classification level 1 fair values are based on the quoted (unadjusted) prices of identical assets or liabilities in an appropriate market. In determining the fair value of these instruments, the Group has mainly used Bloomberg valuations as the source of prices and the Group has verified that the prices received represented actual and frequent market transaction prices for the instruments in question.

The fair values of instruments in classification level 2 are for a significant part based on inputs other than the prices quoted in classification level 1, however, it is based on data that is observable for the asset or liability in question either directly (as the price) or indirectly (derived from the price). In order to determine the fair value of these instruments, the Group uses generally accepted valuation models, the inputs of which are nonetheless for a significant part based on observable market data.

The fair values of instruments in classification level 3 are based on inputs about the asset or liability, which are not based on observable market data (non-observable inputs) but for a significant part is based on management's estimates and their use in the generally accepted valuation models.

The classification level of fair value to which a particular financial asset measured at fair value has been fully classified has been determined on the basis of the input about the fair value item in question as a whole classified at the lowest level of significance relevant to it. The significance of the input has been assessed in relation to the item measured at fair value as a whole.

Reconciliation of level 3 financial assets measured at fair value

Recognised at fair value through profit or loss	**2018**	Shares and participations
At beginning of year		17,994
Total gains and losses		
In the income statement		
In finance income and cost		-4,441
Adjustment to sales revenue		-
In the comprehensive income statement		
In other comprehensive income (other reserves)		-
Purchases		0
Sales		0
Share issues		-
Implementations		-
Transfers to level 3		-
At end of year		13,554
Total recognised gains and losses from assets held at the end of the reporting period		
In finance income and cost		-4,441
As adjustments to sales revenue		-

Reconciliation of level 3 financial assets measured at fair value

Recognised at fair value through profit or loss	**2019**	Shares and participations
At beginning of year		13,554
Total gains and losses		
In the income statement		
In finance income and cost		-9,249
Adjustment to sales revenue		-
In the comprehensive income statement		
In other comprehensive income (other reserves)		-
Purchases		6,024
Sales		0
Share issues		-
Implementations		-
Transfers to level 3		-
At end of year		10,329
Total recognised gains and losses from assets held at the end of the reporting period		
In finance income and cost		-9,249
As adjustments to sales revenue		-

1.28 Adjustments to cash flows from operating activities

	2019	2018
Unrealised foreign exchange gains and losses		
Unrealised foreign exchange gains and losses	1,297	3,147
Finance income and cost	11,900	8,157
Other income and expenses that do not include payments	129	-1,049
Other adjustments	7,982	10,767
	21,308	**21,021**

Other adjustments during the financial year include an impairment charge of EUR 8.2 million for an associated company recognised in the financial statements of Finnish Minerals Group.

Other adjustments in the financial year 2018 include a total of EUR 6.3 million of the convertible bonds issued to Ferrovan Oy recognised in the financial statements of Finnish Minerals Group, as well as the write-down of the associated options totalling EUR 4.4 million.

The finance costs include an interest-rate adjustment for options totalling EUR 4.2 million (2018: 4.2 million).

Changes in financial liabilities

	Non-current liabilities	Current liabilities	Non-current lease liabilities	Current lease liabilities	Total liabilities from financial operations
Net liabilities 1 Jan 2018	88,982	130	317	1,120	90,550
Cash flows	0	-143	0	-1,120	-1,264
Date of acquisition	251	168	48	199	666
Exchange rate variations	4,210	0	0	0	4,210
Other changes that do not include payment	-309	0	0	0	-309
Net liabilities 31 Dec 2018	93,135	155	364	199	93,853

	Non-current liabilities	Current liabilities	Non-current lease liabilities	Current lease liabilities	Total liabilities from financial operations
Net liabilities 1 Jan 2019	93,135	155	364	199	93,853
Cash flows	0	-203	0	-2,328	-2,531
Date of acquisition	62,947	0	13,929	3,084	79,961
Exchange rate variations	3,073	-1,566	-2	1	1,505
Other changes that do not include payment	-30,185	30,185	-2,404	2,404	0
Net liabilities 31 Dec 2019	128,970	28,570	11,887	3,360	172,788

1.29 Related party transactions

Business transactions with related parties	**31 Dec 2019**	**31 Dec 2018**
Net sales from goods and services		
Other related entities	338,694	325,953
Purchases of goods and services		
Other related entities	32,130	29,250
Open balances on sales and purchases of goods and services		
Trade receivables		
Other related entities	24,571	19,596
Accounts payable		
Other related entities	2,822	3,050
Loans received		
Other related entities	121,733	75,000

Executives' benefits	**31 Dec 2019**	**31 Dec 2018**
Salaries and other short-term benefits	1,903	1,609
Termination benefits	0	0
Post-employment benefits	0	0
Other long-term benefits	0	0
Share-based payments	0	0
	1,903	**1,609**

The Executives' benefits table includes the salaries and remunerations of the Board of Directors and CEOs of the group companies and the executives of Terrafame.

Salaries and other short-term benefits	**31 Dec 2019**	**31 Dec 2018**
Parent company		
CEO	209	182
Members of the Board of Directors		
Janne Känkänen	25	32
Teija Kankaanpää	12	-
Ilpo Korhonen	11	-
Antti Kummu	17	3
Juha Majanen	16	17
Minna Pajumaa	15	17
Eeva Ruokonen	16	3
Subsidiaries		
CEO	416	365
Members of the Board of Directors		
Lauri Ratia	79	79
Jesus Fernandez	40	27
Emmanuel Henry	43	29
Matti Hietanen	0	0
Esa Lager	43	43
Riitta Mynttinen	43	29
Tuomo Mäkelä	43	43
Total remuneration	**1,028**	**868**

During the financial year 2018, Finnish Minerals Group purchased expert services worth a total of EUR 40 000 from a company owned by the related parties of Lauri Ratia, Chair of the Board of Terrafame Oy. The services purchased during the financial year 2018 were associated with consulting in the preparations for forming a Finnish battery value chain, meaning that they are not related to Terrafame. It was necessary to buy these services in connection with the upcoming feasibility studies and the ongoing negotiations on ownership and financing. The expert services were priced at current value.

During the financial year 2018, Finnish Minerals Group's shares have been subscribed to by the state of Finland with EUR 46.0 million and by Finnish Industry investment Ltd with EUR 20.8 million. Finnish Industry Investment Ltd has immediately transferred its shares to the state of Finland.

At the end of the financial year 2019 and 2018, the members and management of the Board of Directors of Finnish Minerals Group or Terrafame Oy and their related parties do not own the company's shares.

Financing arrangements are in place between Terrafame and three funds – Trafigura Ventures V B.V., Galena Private Equity Resources Investment 2 L.P. and Galena Private Equity Resources Investment 3 L.P. – as well as between the company and Finnish Minerals Group. The value of the company's related-party borrowings connected with the financing arrangement is EUR 121.7 million. The commercial agreements between Terrafame and Trafigura Ventures V B.V. generated EUR 322.9 million in sales during the financial period. The company has acquired legal and other administrative services worth EUR 0.4 million and management services for product development projects worth EUR 0.2 million from Finnish Minerals Group. The maximum limit for the counter-guarantee granted by the State for arranging collateral in accordance with environmental permits was lowered during the financial period at the company's initiative to EUR 32.5 million from the comparative period's EUR 58.5 million.

All business transactions between the Group companies and their related parties conformed to accepted market practices.

The Board of Directors of Finnish Minerals Group has confirmed the Group's related party policy. The key related parties include the state of Finland, Galena Private Equity Resources Investment 2 L.P. and Galena Private Equity Resources Investment 3 L.P. funds, as well as Trafigura Ventures V B.V. The related parties also include members of Boards, CEOs and management team members of group companies, persons responsible for Terrafame Oy's commercial agreements, immediate family members of persons referred to here, as well as entities over which they or their immediate family members have control. Finnish Minerals Group's related parties also include companies in which the Government of Finland exercises control or considerable influence. Finnish Minerals Group has applied an exemption pursuant to which it only reports significant transactions with Government-related companies.

The pension cover of key personnel is determined on the basis of statutory pension cover. There are no option or other share-based incentive schemes in place for executives.

1.30 Parent company and subsidiary relationships of the Group

Company	**Domicile**	**2019 Holding (%)**	**2019 Share of votes (%)**	**2018 Holding (%)**	**2018 Share of votes (%)**
Finnish Minerals Group – parent company	Finland				
Terrafame Oy	Finland	71.8%	71.8%	77.0%	77.0%
Finnish Battery Chemicals Oy	Finland	100.0%	100.0%	-	-

During the financial year 2019, the Group's parent company offered services to the subsidiary Terrafame Oy for a total of EUR 609 thousand (2018: 222 thousand). The first financial year of Finnish Battery Chemicals Oy began on 9 May 2019, and the parent company granted a subordinated loan of EUR 200 000 to this subsidiary during the financial period.

1.31 Events after the balance sheet date

The financial period of Finnish Minerals Group ended on 31 December 2019. After the end of the financial period, at the beginning of January, the share issue implemented in late 2019 increased the company stock of Finnish Minerals Group to 558,408 shares.

In January, the company announced the beginning of preparations on behalf of its project company, Finnish Battery Chemicals, for the EIA programme for two new plants that will be producing precursor and cathode active materials in the battery value chain.

In February, Finnish Minerals Group invested EUR 30 million in the upcoming battery chemicals plant of its subsidiary, Terrafame, in accordance with the financing agreement signed by the owners in 2018. This funding package also included EUR 60 million from other financiers to Terrafame in January–February. In February, Ferrovan announced that the bankruptcy estate had reached an agreement to sell the rights and samples related to the Mustavaara mine area to the Canadian mineral exploration and development company, Strategic Resources Inc. With claims arising from convertible loans and associated options, Finnish Minerals Group is one of the bankruptcy estate's creditors.

The Government granted a uranium recovery permit to Terrafame in February.

PARENT COMPANY INCOME STATEMENT

Finnish Minerals Group	Note	2019	2018
Net sales	2.1	619	222
Gross profit		**619**	**222**
Other operating income	2.2	416	227
Administrative expenses	2.4	-2,334	-1,931
Research and development expenses	2.5	-1,201	-429
Operating profit/loss		-2,500	-1,911
Finance income and cost	2.6		
Other interest and finance income		545	250
Value impairment, investments held as non-current assets		-8,155	-4,441
Value impairment, investments held as current assets		0	-6,306
Interest and other finance expenses		-5	-27
Total finance income and cost		-7,615	-10,524
Profit/loss before tax		-10,115	-12,435
Profit/loss for the period		**-10,115**	**-12,435**

PARENT COMPANY BALANCE SHEET

	Note	31 Dec 2019	31 Dec 2018
ASSETS			
Non-current assets			
Amounts owed by Group companies	2.7	427,001	426,801
Investments in other shares and participations	2.8	11,423	13,554
Total non-current assets		**438,424**	**440,354**
Current assets			
Non-current receivables			
Receivables from Group companies		200	0
Current receivables			
Current receivables	2.9	989	313
Cash and cash equivalents	2.10	90,556	76,863
Total current assets		**91,746**	**77,175**
TOTAL ASSETS		**530,169**	**517,530**
LIABILITIES			
Equity	2.11		
Subscribed capital		2,258	2,258
Invested unrestricted equity fund		556,151	533,651
Profit/loss from previous periods		-19,115	-6,680
Profit/loss for the period		-10,115	-12,435
Total equity		**529,177**	**516,793**
Current liabilities			
Current liabilities	2.12	992	737
Total current liabilities		**992**	**737**
TOTAL LIABILITIES		**530,169**	**517,530**

PARENT COMPANY CASH FLOW STATEMENT

	2019	2018
Cash flow from operating activities		
Profit/loss for the period	-10,115	-12,435
Adjustments to operating profit/loss	7,845	10,524
Change in net working capital	-422	489
Interest paid	-5	-27
Interest received	315	180
Net cash flow from operating activities	**-2,382**	**-1,269**
Cash flow from investing activities		
Investments in other investments	-6,224	-3,466
Pledge for subsidiaries	0	17,000
Investments in subsidiaries	-200	-20,000
Net cash flow from investing activities	**-6,424**	**-6,466**
Cash flow from financing activities		
Subscription issue, subscribed capital and invested unrestricted equity	22,500	46,000
Cash flow from financing activities	**22,500**	**46,000**
Change in cash and cash equivalents	**13,694**	**38,266**
Cash and cash equivalents at beginning of year	76,863	38,597
Cash and cash equivalents at end of year	**90,556**	**76,863**

PARENT COMPANY'S ACCOUNTING POLICIES AND NOTES

Accounting policies

The scope of financial statements, and accounting policies

The Company has prepared its financial statements in accordance with Finnish accounting legislation and Finnish Accounting Standards (FAS). The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS).

The financial statement information is reported in tables and related texts in thousands of euros and in the report of the Board of Directors in millions of euros to one decimal place. The comparative figures reported in brackets are figures for the financial period 2018. All the presented figures have been rounded according to general rounding rules, so the sum of the individual figures may be different from the sum presented. Key figures have been calculated using exact values. Comparative information has been adjusted where necessary to correspond with the information of the year under review.

Transactions in foreign currencies

Transactions in foreign currencies are recorded at the rate prevailing on the transaction date. Receivables and liabilities on the balance sheet on the closing date of the accounts are valued at closing rate.

Research and development expenditure

Research and development expenditure is treated as annual expenses within other operating expenses.

Scheduling of pension costs

Pension costs are entered as expenses in the year in which they occur.

Receivables

Receivables are valued at nominal value or at a lower probable value.

Non-current assets

Shares in subsidiaries are stated on the balance sheet at historical cost. If the future income generated from shares is estimated to be permanently lower than the undepreciated acquisition cost, the difference is entered as an expense under impairment.

Deferred taxes

No deferred tax assets or liabilities have been recognised on temporary differences between taxation and financial statements, but these have been presented in the notes. The most significant temporary difference is the loss to be confirmed for the financial period.

2 PARENT COMPANY'S NOTES

2.1 Net sales

	2019	2018
Intra-group sales	609	222
Selling to others	10	0
	619	222

2.2 Other operating income

	2019	2018
Grants and subsidies received	201	227
Other income	215	0
	416	227

2.3 Personnel expenses and number of employees

Personnel expenses	**2019**	**2018**
Wages and salaries	1,533	677
Pension costs	230	106
Other social security expenses	55	8
	1,817	**791**
Average number of employees		
Salaried employees	13	8
	13	**8**

2.4 Administrative expenses

Personnel expenses	**2019**	**2018**
Wages and salaries	985	504
Pension costs	148	75
Other social security expenses	35	4
	1,168	**582**
Auditors' fees		
Auditing	43	21
Certificates and statements	23	0
Tax advisory services	31	4
Other services	11	27
	109	**52**
Travel expenses	220	62
Rents	138	35
Experts' fees	0	0
Other legal and consulting services	454	1,071
Other administrative expenses, Group		
Other administrative expenses	236	130
Total administrative expenses	**2,334**	**1,932**
Management salaries and fees		
CEO and Board members	321	253

In the financial year 2018, the expert fees were included in the expenses for other legal and consulting services.

2.5 Research and development costs

	2019	2018
Total research and development costs recognised as an expense	1,201	429

2.6 Finance income and cost

	2019	2018
Other interest and finance income		
From Group companies	456	80
From other companies	89	170
Value impairment, investments held as non-current assets	-8,155	-4,441
Value impairment, investments held as current assets	0	-6,306
Interest and other finance expenses		
To other companies	-5	-27
	-7,615	**-10,524**

2.7 Investments in subsidiaries

Shares in Group companies	
Carrying amount 31 Dec 2018	426,801
Acquisition cost 1 Jan 2019	426,801
Increase	200
Acquisition cost 31 Dec 2019	427,001
Carrying amount 31 Dec 2019	427,001

Group companies	**31 Dec 2019**	**31 Dec 2018**
Parent company holdings		
Terrafame Oy, Sotkamo, Finland	71,8 %	77,0 %
Finnish Battery Chemicals Oy, Finland	100,0 %	0,0 %

2.8 Investments in other shares and participations

	Holdings in associated companies	Receiva-bles from associated companies	Other shares and participations	Other receivables	Total
Carrying amount 31 Dec 2018	0	0	13,554	0	13,554
Acquisition cost 1 Jan 2019	0	0	17,994	0	17,994
Increase	0	0	6,024	0	6,024
Decrease	0	0	0	0	0
Transfers between items	18,503	0	-18,503	0	0
Acquisition cost 31 Dec 2019	18,503	0	5,515	0	24,018
Accumulated impairment losses 1 Jan 2019	0	0	-4,441	0	-4,441
Impairment losses	-8,155	0	0	0	-8,155
Accumulated impairment losses 31 Dec 2019	-8,155	0	-4,441	0	-12,596
Gain on revaluation	0	0	0	0	0
Carrying amount 31 Dec 2019	10,349	0	1,074	0	11,423

31 Dec 2019	**Company holdings**	**Book-entry**	**Quantity/pcs**	**Carrying amount**
Ferrovan Oy, Oulu, Finland		Option right	623,659	0
Keliber Oy, Kaustinen, Finland	24,3 %	Class B shares	313,599	10,349
Sotkamo Silver AB, Stockholm, Sweden	Approx. 2,0 %	Book-entry shares	2.685,952	1,074
				11,423

In the financial year 2018, 'other holdings' did not include ownership of joint ventures or associated companies, since the company's voting power in them was less than 20 per cent and the company had no considerable influence over the management of the holdings' business and finance. During the financial year 2019, the holding in Keliber Oy rose to 24.3 percent when an additional investment of EUR 6.0 million was made during the financial period in the company, making it an associated company. A value impairment of EUR 8.2 million was made to the holdings in associated companies during the financial period. A write-down of the convertible loans and associated option rights issued to Ferrovan Oy has been recorded in the financial statements for 2018.

2.9 Current receivables

	31 Dec 2019	**31 Dec 2018**
Receivables from Group companies	511	112
Trade receivables	27	0
Lease guarantees	37	12
VAT receivable	0	33
Tax account receivable	32	29
Prepaid expenses and accrued income	383	126
Total receivables	**989**	**313**

2.10 Cash and cash equivalents

	31 Dec 2019	**31 Dec 2018**
Cash in hand and at banks	90,556	76,863

2.11 Equity

	31 Dec 2019	**31 Dec 2018**
Subscribed capital 1 Jan	2,258	2,258
Subscribed capital 31 Dec	2,258	2,258
Total restricted equity	2,258	2,258
Invested unrestricted equity fund 1 Jan	533,651	466,843
Issued shares	22,500	66,808
Invested unrestricted equity fund 31 Dec	556,151	533,651
Profit/loss from previous periods	-19,115	-6,680
Profit/loss for the period	-10,115	-12,435
Total unrestricted equity	526,920	514,535
Total equity	529,177	516,793
Calculation of distributable funds		
Reserve for invested unrestricted equity	556,151	533,651
Profit/loss for the previous period	-19,115	-6,680
Profit/loss for the period	-10,115	-12,435
	526,920	**514,535**

2.12 Current debt

	31 Dec 2019	**31 Dec 2018**
Amounts owed to Group companies:		
Accounts payable	177	0
Advances received	213	419
Accounts payable	98	190
Other liabilities – withholding tax debt and social security contribution liabilities	41	29
Value added tax debt	30	0
Accrued expenses and deferred income – wages and salaries with social security expenses	231	99
Accrued expenses and deferred income – other	202	0
	992	**737**

2.13 Other notes

	31 Dec 2019	**31 Dec 2018**
Contingent liabilities and other liabilities		
Amounts due on leases and leasing commitments		
Within one year	66	91
After one year but within five years	6	12
Total	**72**	**103**

The company has approximately EUR 2.0 million in unrecognised deferred tax assets arising from the confirmed loss for tax year 2015 (tax receivable of EUR 0.2 million), confirmed loss for tax year 2016 (tax receivable of EUR 0.5 million), and confirmed loss for tax year 2017 (tax receivable of EUR 0.6 million), as well as from the loss to be confirmed in the tax assessment of 2018 (tax receivable of EUR 0.3 million) and the loss to be confirmed in the tax assessment of 2019 (tax receivable of EUR 0.3 million).

Signatures to the financial statements

In Helsinki, 11 March 2020

Janne Känkänen Chair of the Board of Directors	Teija Kankaanpää
Ilpo Korhonen	Antti Kummu
Juha Majanen	Minna Pajumaa
Eeva Ruokonen	Matti Hietanen CEO

Auditor's confirmation

A report on the audit has been issued today.

In Helsinki, 12 March 2020

KPMG Oy Ab
Authorised Public Accountants

Antti Kääriäinen
APA

List of accounting books, voucher types and storage methods

Accounting books	
Daily ledger	E-format
General ledger	E-format
Annual accounts	Paperback
Balance sheet specification	Paperback

Voucher types and storage merhods	
Sales invoices	E-format
Purchase invoices	Electronic archive on the recording of vouchers
E-invoices (purchase)	E-format
Travel invoices and other bills of cost, memo vouchers	E-format
Payroll accounting documentation	E-format
Bank account statements, payment vouchers	E-format
VAT-calculations	E-format
Tax return forms	E-format

FINNISH MINERALS GROUP

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