FINNISH MINERALS GROUP

RESPONSIBLY MAXIMISING THE VALUE OF FINNISH MINERALS

ANNUAL REPORT 2018

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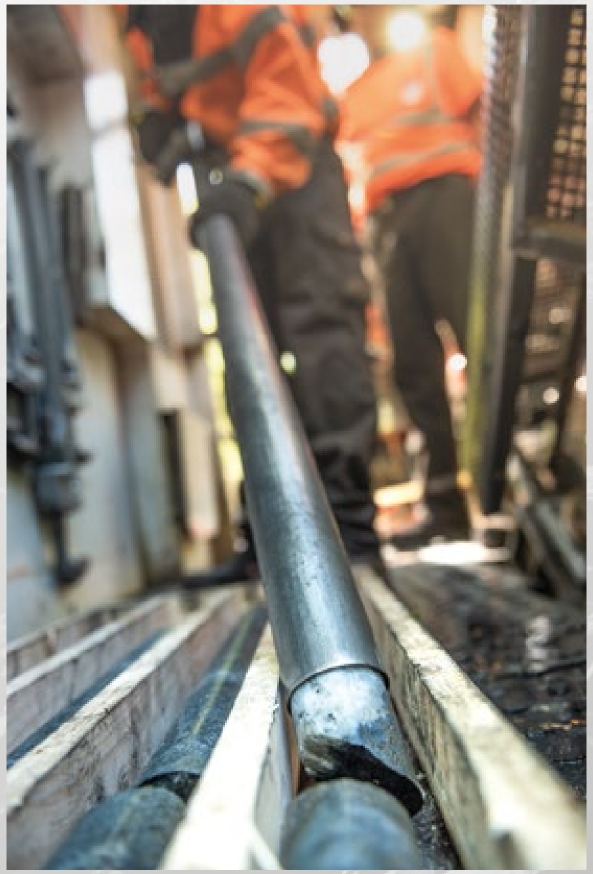


OVERVIEW OF FINNISH MINERALS GROUP

A STATE-OWNED COMPANY FOCUSING ON THE BATTERY AND MINING CLUSTER

FINNISH Minerals Group is a special-purpose company fully owned by the State of Finland, with a mission to develop the Finnish battery and mining industry. The current mandate and 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 Ltd.

The mission of Finnish Minerals Group is to responsibly maximise the value of Finnish minerals. The mission conferred on the company lies in the desire to enable the Finnish mining industry to offer even more significant benefits to society, the state and local communities. The practical measures for pursuing this include developing state ownership and increasing the degree of further processing in production.

The company's vision is to bring active and skilled capital to the technologically advanced mining industry and to create an integrated lithium-ion battery value chain in Finland. The operations are managed on commercial basis, which means that the company is aiming for a positive return on all investments.

Finnish Minerals Group is Terrafame's parent company and its largest shareholder with a shareholding of 77,0 percent. Terrafame produces nickel, zinc, cobalt and copper, and the aim of its battery chemicals plant project is to start manufacturing nickel and cobalt sulphates in 2021. The company's chemicals production plays a key role in attracting further investments for building a lithium-ion battery value chain in Finland.

The other companies included in Finnish Minerals Group's portfolio are Keliber Oy and Sotkamo Silver AB. Keliber is preparing to open a lithium mine and start producing lithium chemicals and Sotkamo Silver is due to start the production of silver in early 2019.

Mining and the further processing of metals are operations that always generate environmental and societal impact. An essential element of the mission defined for the Finnish Minerals Group in the summer of 2018 is that maximising the value of Finnish minerals is implemented in a responsible manner.

Sustainable and responsible mining and further processing activities take into account the environmental impact generated during various phases of the life cycle, the regional and economic impacts and the wellbeing and safety of workers in such a way that adverse effects will be minimised and positive effects maximised.

The Finnish Minerals Group is committed to responsibility in its own operations and requires the same from its target companies. The company finds that a responsible, long-term approach will benefit both the target companies as well as their owners and other stakeholders.

STRATEGIC OBJECTIVES

1

Active ownership of Finnish mining companies

We are an active and long-term owner in the mining industry. As an owner, we promote mining sector development projects and their industrialisation, while taking into account the responsibility aspects of the holdings.

2

Technological development of the mining industry

We promote technological development in the mining industry. We coordinate and lead strategic research and development projects together with our partner network. We develop the activities of our target companies and support their research and development work.

3

Creating a value chain for electric vehicle batteries

We are building a value chain for lithium-ion batteries used in electric vehicles. We are working with our partners on enabling investments in the manufacture of battery cells and their components in Finland.

The strategic objectives also serve as business areas.

VALUES OF FINNISH MINERALS GROUP

Curiosity and renewal

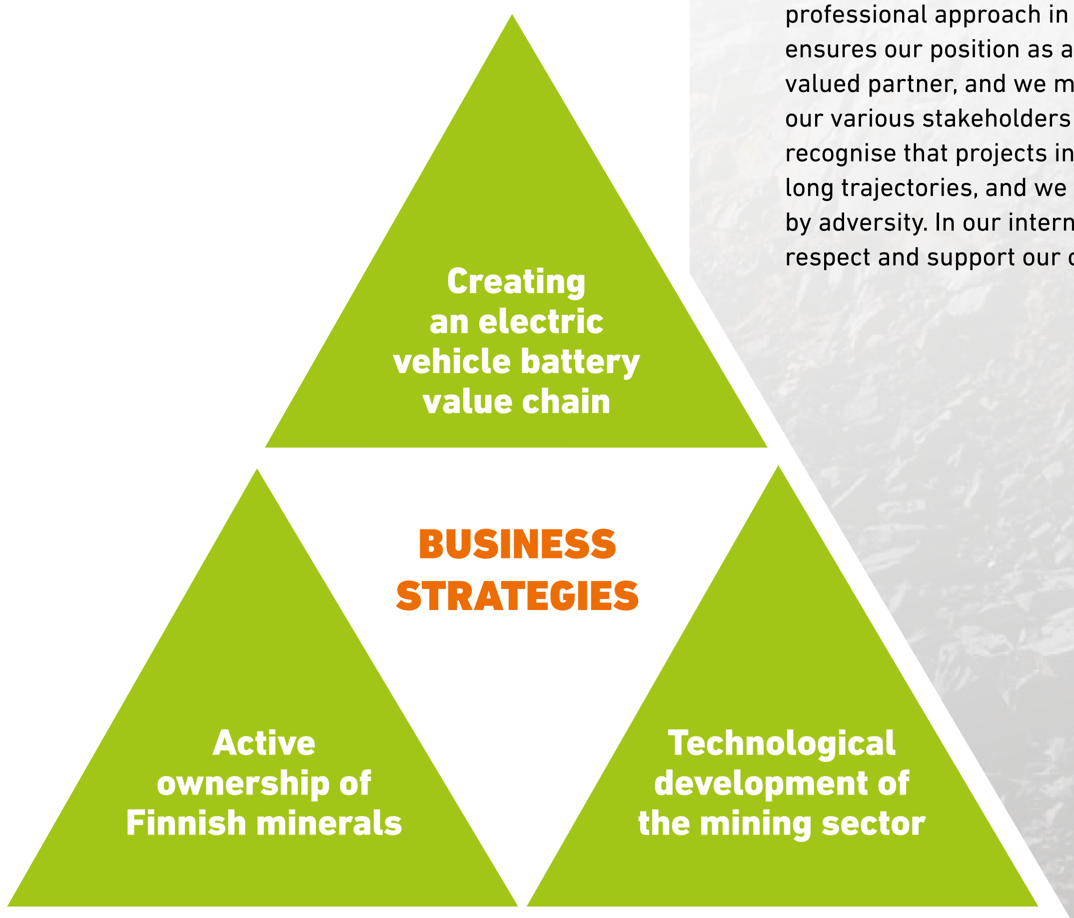
We seek opportunities with an open mind also in places where others do not even look, and we dare to venture outside our comfort zone. We continually develop our ability to seize the opportunities provided by an ever-changing operating environment.

Courage and vision

We dare to disagree with the mainstream, if necessary, and we take well-thought-out and justifiable risks. We have a vision of the direction in which we want to develop the industry.

Long-term cooperation

We are committed to in-depth cooperation with our partners and stakeholders. Our professional approach in our daily operations ensures our position as a preferred, trusted and valued partner, and we meet the expectations our various stakeholders have for us. We recognise that projects in this industry have long trajectories, and we are not discouraged by adversity. In our internal work as a team we respect and support our colleagues.



The business strategy of Finnish Minerals Group is based on three objectives.

CEO'S REVIEW

MORE BENEFITS FOR FINLAND FROM MINING

FINNISH Minerals Group began operating in the summer of 2018 in line with the state's new policies. Previously, starting from 2015, our company operated under the name Terrafame Group. Based on our current mandate, we are responsible for the state's mining industry holdings and especially for the development of the battery cluster. Research and development activities also continue at the company.

Our strategic goal is to increase the benefits of mining operations in Finland. We aim to achieve this by activating and developing state ownership and by raising the degree of domestic processing.

Maximising value responsibly

Finnish Minerals Group wants to promote the launching of promising projects within the mining sector and help them reach industrial production. In addition to primary production, we are promoting investments in the further processing of raw materials produced by mines. The aim is that minerals excavated responsibly in Finland would also be processed here into products of maximum value. In our role as an owner, we act on a commercial basis, which means that we seek returns on our investments. At the same time, we serve the interests of Finnish society.

According to a 2018 study commissioned by the Finnish Mining Association (FinnMin), the mining industry increases Finland's gross domestic product (GDP) by EUR 1.2 billion a year. Taking into account the indirect effects on employment, the mining industry's employment impact in Finland is 13,000 person-years. A higher degree of processing will increase these benefits even further.

Many strengths are available

The electrification of transport and new means of storing energy will increase the demand for minerals and the importance of mining globally. A state-of-the-art lithium-ion battery of an electric vehicle contains approximately 50 kg of nickel, 7 kg of cobalt and 8 kg of lithium. These metals are found naturally in Finnish bedrock, and they are also included in the current or planned production operations of Finnish Minerals Group's portfolio companies.

However, having mineral resources that are significant by European standards and conducting responsible raw material production are not Finland's only assets amidst the global transformation of transport. We also have at our disposal, for example, carbon dioxide-free energy at competitive prices, high-level education and training, long experience in metals processing, and a well-functioning infrastructure. And we should be harnessing these strengths right now.

Active in three business areas

In the summer of 2018, the state-owner allocated EUR 46 million of capital to Finnish Minerals Group in connection with its new, expanded mandate. The centralisation of the state's mining industry holdings was implemented in October 2018, when the holdings and receivables in Keliber Oy, Ferrovan Oy and Sotkamo Silver AB were transferred to us from Finnish Industry Investment Ltd. Additionally, we will continue to use the ownership power of the state on Terrafame Ltd as its parent company. In late 2018, we decided to make two investments in our portfolio companies: one in Terrafame's battery chemicals plant and another in the preparation of Ferrovan's vanadium plant project. However, in March 2019, the preparations concerning Ferrovan's plant ended due to the company not being able to obtain further funding for its project.

In R&D, the Ariel project concerning water management technologies, which lasted more than two years, was completed in the first quarter of 2018. The project involved preparing different water treatment concepts for Terrafame's mining operations.

We also launched two new research projects funded by the European Commission. The SO4Control project studies and develops the sulphate recycling concept in collaboration with partners from Finland, Sweden and Germany. The key objectives of the NEMO project, coordinated by VTT, Technical Research Centre of Finland, are the optimisation of Terrafame's bioleaching process, making the operations of the metals production plant more efficient, the piloting of rare earth elements (REE) recovery, and exploring opportunities to recover other metals.

During the autumn, we carried out a pre-feasibility study on investing in the electric vehicle battery (EVB) value chain and opened lines of communication in order to identify cooperation opportunities. We are closely involved in the European Battery Alliance, launched by the EU Commission, aiming to establish battery production in Europe.

EVB value chain offers many opportunities

The future of our company and the industry looks promising – but it is not without its challenges. Terrafame as our portfolio company has achieved the production level set for it and is now gearing up for increasing the degree of processing to start the production of battery chemicals. Keliber is moving its project forward towards the construction of production facilities and Sotkamo Silver will start production in early 2019.

However, the mining industry will always be sensitive to the market prices for metals. Right now, there are exceptionally many uncertainties in the global economy and it is difficult to predict how the markets will develop in 2019. The electrification of transport will nevertheless continue at an accelerating pace.

"New business opportunities should be seized together."

The electric vehicle battery value chain offers us many opportunities. In addition to raw materials, the value chain covers the production of chemicals, various components, such as cathodes and their precursors, and battery cells and packs. On the other hand, the materials in used batteries can be reused and recycled, which also offers excellent business opportunities. Maximising the Finnish value chain would enable responsible, cost-effective production, the traceability of battery materials and unique competitiveness in the international market.

Despite these great opportunities, the domestic value chain does not emerge on its own – hard work, project development and financing will be required. Finnish Minerals Group is contributing to this work to promote value chain development, climate change mitigation and industrial renewal in Finland.

MATTI HIETANEN
CEO

CHAIRMAN'S REVIEW

THE ELECTRIFICATION OF TRANSPORT SUPPORTS THE REDUCTION OF GREENHOUSE GAS EMISSIONS

THE YEAR 2018 was revolutionary in the development of the state's mining investments and the battery cluster. In May, the Finnish Government's Ministerial Committee on Economic Policy decided to endorse the centralisation of the state's mining holdings and mining investment programme into a new holdings and development company.

This was the starting point for establishing the Finnish Minerals Group. The mandate of our company, which previously operated under the name Terrafame Group Ltd, was expanded to cover the state's mining industry holdings and the development of the Finnish battery cluster. To the state, Finnish Minerals Group offers the means to strengthen the responsibility and effectiveness of economic policy within the mining industry and, on a wider scale, on the use of strategic raw material resources.

Finnish Minerals Group's primary task is to responsibly maximise the value of Finnish minerals. The company evaluates the responsibility of its portfolio companies and, where necessary, issues recommendations for improvements. As an investor, Finnish Minerals Group operates on a commercial basis and expects economic returns on its investments. At the same time, the portfolio companies' neighbouring regions and the society as a whole benefit from economic activity, which creates jobs not only in the mining industry but in other sectors as well.

The electrification of transport requires batteries

In many minds, 2018 will certainly be remembered for the Intergovernmental Panel on Climate Change (IPCC), which has examined the impact of the increase in the average global temperature and the means to mitigate these effects. In late 2018 at the Katowice Climate Change Conference, rules were elaborated for the path to implementing the Paris Agreement.

"We have excellent opportunities to develop the EVB value chain."

Reducing the greenhouse gas emissions from transport is one of the focus areas in our efforts to curb climate change. This requires the electrification of transport and the large-scale production of electric vehicle batteries, which can only be achieved through responsible mining operations and the competence needed in battery technology development.

Sights set on battery manufacturing

The global market for electric vehicles and their batteries has started to grow rapidly, and the long-term growth projections look very promising. At the moment, most electric vehicle batteries are manufactured in Asia, but the EU and European car manufacturers are also very keen to develop the know-how, technology and production capacity needed to manufacture batteries.

Finland has a special role in this development in Europe, because no other EU country is able to produce all the major metals – nickel, cobalt and lithium – used in manufacturing electric vehicle batteries. In addition to the production of strategic raw materials, the skills and knowledge we have give us an excellent opportunity to develop the further processing of metals to better meet the needs of the battery industry and the electrification of transport.

Further processing creates more economic benefits

The long value chain of battery production, its many intermediate stages, and the reuse and recycling of parts and materials offer new kinds of opportunities for companies that already have operations in Finland as well as for entities interested in investing in Finland. By responsibly processing Finnish minerals further and in more innovative ways here in Finland, we are creating jobs as well as tax and export income while also increasing our intellectual capital.

Finnish Minerals Group strives to be a goal-oriented operator and an attractive partner in Europe. Our company's role is to develop the battery and mining cluster, support the best projects within the scope of the investment programme and promote Finland's interests in the international arena. This way, we also contribute to supporting greenhouse gas emission reduction efforts.

JANNE KÄNKÄNEN
Chairman of the Board
Finnish Minerals Group

THE FIRST STEPS OF FINNISH MINERALS GROUP

May
» The state decides to centralise its mining holdings into one company.
» The NEMO research project under the EU Commission's H2020 programme begins.

June
» The name of Terrafame Group Ltd is changed to Finnish Minerals Group and the Articles of Association are amended.
» The company's strategy is confirmed.
» EU-funded Credit and Morecovery projects are granted financing.

July
» The state-owner allocates EUR 46 million of equity to Finnish Minerals Group.

August
» Recruitment is completed. The company hires six new people.

September
» A funding application is submitted to Business Finland for the BatCircle projects related to the development of the Finnish battery cluster.

October
» Finnish Minerals Group participates in the preparation of the Ferrovan vanadium plant project.
» The state's mining industry holdings and receivables in Sotkamo Silver, Keliber and Ferrovan are recorded in the balance sheet of Finnish Minerals Group.
» Two new members to the Board of Directors: Eeva Ruokonen and Antti Kummu.
» The company participates in the additional funding package of Terrafame's battery chemicals plant by allocating EUR 30 million to the project from the investment commitment of 2017.
» The pre-feasibility study on the investment options for the value chain for lithium-ion battery manufacturing is completed.

November
» Discussions are in progress with companies that are planning to invest in the EVB value chain in Europe.
» Finnish Materials Group attends a top-level conference during the EU Raw Materials Week organised by the European Commission.

December
» The company allocates EUR 20 million to Terrafame from the investment commitment of 2017.

INVESTMENTS

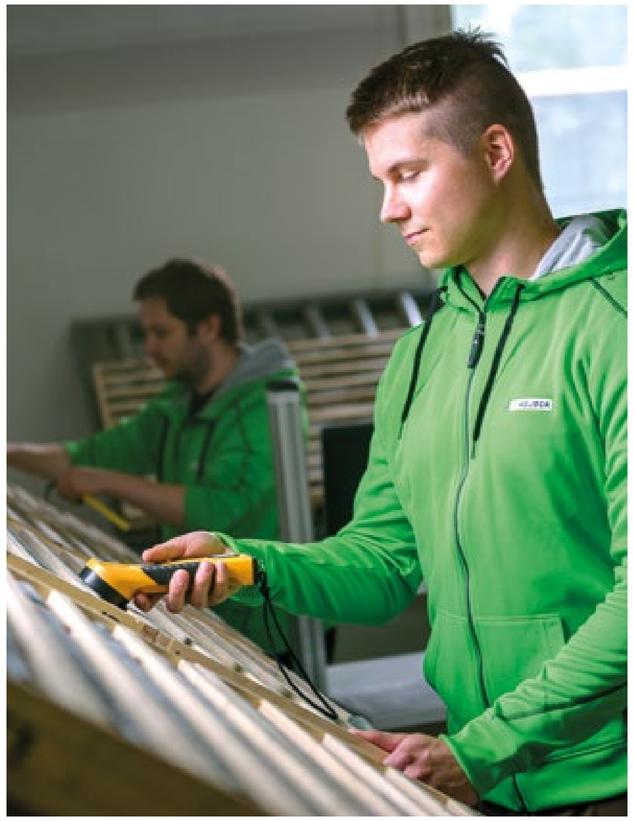
PARTICIPATING IN PORTFOLIO COMPANY DEVELOPMENT

Finnish Minerals Group manages the state's mining industry holdings. We develop commercially viable and responsibly managed projects, which also take into account social and environmental impact, for the mining and battery industries. Through our ownership, we bring added value to the Finnish economy while promoting employment and economic activity.

THE INVESTMENT policy of Finnish Minerals Group was drawn up in the summer of 2018 as part of the company's strategy work. In line with the investment policy, we are a long-term industrial and strategic shareholder and we typically aim to have 10–30 percent shareholding in our portfolio companies. Our investment decisions are made on a commercial basis, and our aim is to generate returns on our portfolio.

As an owner, we are close to the portfolio companies and actively participate in their development and the creation of shareholder value. In principle, Finnish Minerals Group actively participates in the work of Board of Directors in all its portfolio companies.

An investment director and an associate were recruited for this business area, and they started working for the company in late summer. Our work focused on the investment decision concerning Terrafame Ltd's battery chemicals plant and the preparation of the related funding facility, as well as on familiarizing ourselves with the new portfolio companies and promoting their business plans.



Keliber Oy is one of the portfolio companies of Finnish Minerals Group.

The number of portfolio companies increased to four

The most significant holding of Finnish Minerals Group is its subsidiary, Terrafame, with a 77.0 percent shareholding. As the parent company, we provide Terrafame with group services in areas such as administration, legal services, communications, public relations, financial negotiations and technology projects. In October 2018, we issued a EUR 30 million equity investment commitment to Terrafame for the construction of a battery chemicals plant. This was done by reallocating part of the investment commitment of 2017 worth EUR 50 million. In December, we paid a EUR 20 million equity investment to Terrafame from the same investment commitment.

The number of portfolio companies increased in October, when Finnish Industry Investment Ltd and Finnish Minerals Group implemented an arrangement in accordance with the state-owner's mandate through which the shareholdings in Sotkamo Silver AB and Keliber Oy and the convertible bond and the related share options regarding Ferrovan Oy were transferred to Finnish Minerals Group.

In October 2018, Finnish Minerals Group participated in Ferrovan's funding with a total of EUR 3.15 million.

RESEARCH AND DEVELOPMENT

FOCUSING ON BIOLEACHING AND SULPHATE RECYCLING

R&D supports the technological and process development of the portfolio and group companies and provides technical support to the company's other business areas. We are also engaged in the activities of national- and EU-level research networks contributing to the development of the industry in the long-term.

THE APPROXIMATELY 2.5-year-long water management technology project, Ariel, was completed in the first quarter of 2018. Meanwhile, R&D took a broader approach to support the minerals value chain. The utilization of the side streams generated in mineral extraction processes, the internal circulation of chemicals and the process efficiency improvements were the key focus areas.

The outcome of the Ariel project consists of two holistic solutions for sulphate management, with Terrafame Ltd's mine in Sotkamo as a case process. The solutions are based on internal sulphate recycling as well as recovery of sulphate as new commercial products. Development of the recycling solutions will continue in two co-funded demonstration projects. Research on the recovery concept will also continue and parts of the concept will be utilised in Terrafame's battery chemicals plant.

Several less-extensive process solutions for enhancing sulphate control were also developed in the Ariel project.

"In 2018, two projects targeted at Terrafame's process were launched with EU funding."

EU funding for two projects

In 2018, two projects targeted at Terrafame's process were launched with EU funding. In 2018, both projects focused mainly on the planning, the gathering and processing of background data, and the preparation of trial operations.

The four-year Nemo project focuses on optimization of bioleaching and metals recovery processes as well as the recovery of new products. The total funding for the project is EUR 14.9 million, of which Finnish Minerals Group's share is EUR 1.4 million.

The SO4Control project demonstrates the use of a bioreactor in the recycling of sodium sulphate and studies the controlling of calcium precipitation. The share of Finnish Minerals Group and Terrafame is approximately EUR 350,000 of the project funding, which totals approximately EUR 2.1 million.

The Minepro project, which received national funding and was a part of the Ariel project, has been completed. Business Finland granted approximately EUR 600,000 to 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.

R&D also actively participated in the project preparation for several new funding calls during the year. The ones receiving positive funding decisions were the Credit and Morecovery projects. In addition, Finnish Minerals Group is involved in the national BatCircle consortium.

To manage the increased R&D activity, the team was strengthened by hiring an R&D manager.

BATTERY VALUE CHAIN

AIMING FOR DOMESTIC MANUFACTURING OF BATTERY MATERIALS AND CELLS

The demand for lithium-ion batteries is expected to grow significantly in the near future, driven by electrification of transport and growth of renewable energy production. Finnish Minerals Group plays a key role in building a battery manufacturing value chain in Finland.

LEADING European vehicle manufacturers such as VW, Daimler and BMW have reported a strong commitment to the electrification of passenger and commercial vehicles during the year. As a result, they have announced purchase commitments worth of billions of euros for batteries. Our valuable mineral reserves, together with the good availability of zero-emission energy, create excellent conditions for the production of battery materials and cells in Finland.

Our goal is to create partnerships with the leading companies that manufacture battery materials and cells. The partnerships are aimed at creating conditions for establishing production facilities that manufacture precursors, cathode materials and battery cells in Finland.

Accountability and traceability are raising interest

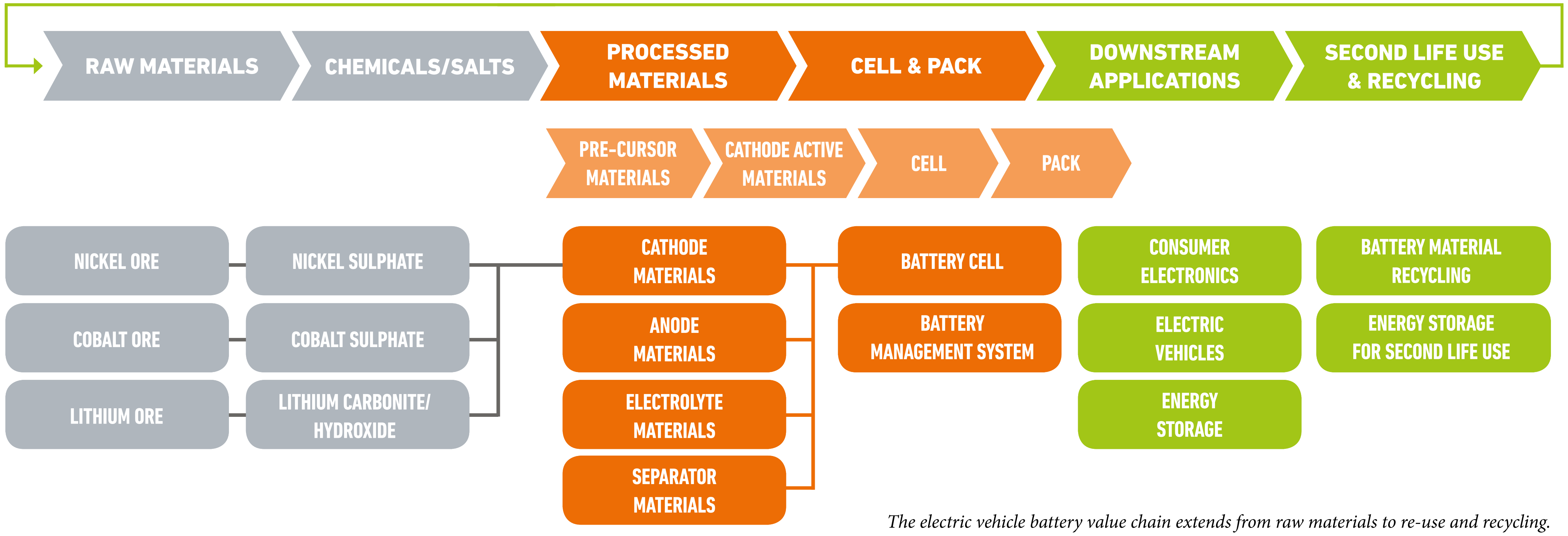
Finnish Minerals Group's business strategy for the battery industry was prepared and approved in the summer of 2018. A director and senior technology manager were recruited for the business area, and they started working at the company in early October. During September and October, we prepared a comprehensive pre-feasibility study on the competitiveness of Finland as a European production location for battery materials and cells, and identified key partner candidates.

After the study was completed, towards the end of the year, we started actively searching for a technology partner that would be ready to invest in Finland. We have also initiated discussions with many companies in various stages of the value chain that are planning to make investments in Europe. The opportunity to invest in Finland has raised interest, especially due to our domestic, responsibly produced and traceable raw materials.

During the year, we were actively involved in both the European Battery Alliance (EBA) cooperation and the national Batteries from Finland program led by Business Finland.

Leading European vehicle manufacturers have reported a strong commitment to the electrification of passenger and commercial vehicles.

ELECTRIC VEHICLE BATTERY VALUE CHAIN



The electric vehicle battery value chain extends from raw materials to re-use and recycling.

Terrafame

TERRAFAME IS GEARING UP FOR BATTERY CHEMICALS PRODUCTION

The company completed the production ramp-up in 2018.

TERRAFAME Ltd, established in 2015, is a multi-metal company, which currently produces nickel, zinc, cobalt and copper in Sotkamo, Finland. The orebody also contains other valuable metals, such as rare earth elements, manganese, graphite and uranium, the recovery of which can potentially be started in the future. The mining concession's mineral reserves will enable the production and further processing of metals for several decades.

Terrafame's production process is based on energy-efficient bioleaching technology in which the ore is leached for several years. In 2018, Terrafame produced approximately 27,400 tonnes of nickel and 61,600 tonnes of zinc. The full production level for nickel and zinc was achieved in the third quarter, and the production ramp-up was completed. Alongside the ramp-up, Terrafame has also been constantly developing environmental and occupational safety.

Finnish Minerals Group (formerly Terrafame Group Ltd) has been the parent company of Terrafame since 2015, bearing responsibility for i.a. ownership steering, ownership and funding arrangements as well as for various group services. Terrafame is the largest asset of Finnish Minerals Group, and its nickel and cobalt production forms the basis for building a battery cluster in Finland.

At the end of 2018, Finnish Minerals Group held 77.0%, the Galena fund, a part of Trafigura Group, held 22.7% and Sampo Plc held 0.3% of Terrafame shares.

Production of chemicals to start in 2021

During the ramp-up of production initiated in 2015, the net sales and profitability of Terrafame as a whole have developed favourably. However, the world market prices of metals and the dollar will always have a major impact on the profitability of mining companies globally.

Since its establishment, Terrafame has been exploring opportunities to further process nickel-cobalt itself. In autumn 2018, the company's Board of Directors made a decision about investing in the production of chemicals used in the manufacture of electric vehicle batteries (EVB). The annual production capacity of the battery chemicals plant is 170,000 tonnes of nickel sulphate and 7,400 tonnes of cobalt sulphate.

The commercial production of nickel and cobalt sulphates at the new battery chemicals plant is due to start at the beginning of 2021. This is estimated to increase Terrafame's net sales by EUR 200 million per year and improve its profitability further.

"Terrafame's project improves the conditions for attracting investments in the EVB value chain in Finland."

Terrafame's new battery chemicals plant will be located on the company's current industrial site in Sotkamo, Finland.

A supplementary financing arrangement

The investment costs for Terrafame's battery chemicals plant amount to approximately EUR 240 million. A funding package of USD 200 million agreed between Terrafame, Finnish Minerals Group (at that time, Terrafame Group Ltd), Galena Asset Management, Trafigura Group and Sampo Plc to fund the plant project was announced in November 2017.

When the final investment decision was made in October 2018, the parties agreed on an additional financing arrangement of approximately EUR 100 million. The contribution of Finnish Minerals Group to this financing was an equity investment commitment of EUR 30 million.

The commitment we gave for the battery chemicals plant project did not increase our financial responsibilities in Terrafame because it was carried out by reallocating EUR 30 million from the EUR 50 million investment commitment granted by Finnish Minerals Group to Terrafame in February 2017. The rest of the investment commitment, EUR 20 million, was paid to Terrafame in December 2018.

Domestic EVB value chain is strengthened

With the investment, Terrafame will become a major producer of battery chemicals, and especially that of nickel sulphate. We consider this an important investment for both Terrafame and its owners, as well as for the Finnish and European value chain of electric vehicle batteries. In our view, Terrafame's project also improves the conditions for attracting more investments in the value chain in Finland.

SOTKAMO SILVER TO START PRODUCTION IN SPRING 2019

The long-prepared mining project is nearly completed.

SOTKAMO Silver comprises the parent company, Sotkamo Silver AB, which is listed in Sweden and Finland, and its wholly owned subsidiary in Finland, Sotkamo Silver Oy. Sotkamo Silver develops its silver, gold, zinc and tungsten (wolfram) deposits in the Nordic countries. The company is currently building Silver Mine in Sotkamo, and production is expected to begin in the spring of 2019.

Sotkamo Silver's largest shareholder is Ilmarinen Mutual Pension Insurance Company with a 9.2% shareholding. Finnish Minerals Group is the company's fourth largest shareholder with a 2.05% shareholding.

In addition to the Sotkamo mine, the company has rights to a gold deposit located in Hopeavuori, near Tampere in Finland. The company also has claims near Mo i Rana in Norway and in the municipality of Ludvika in central Sweden.

Funding has been secured for the mining project

Sotkamo Silver finalised a EUR 46 million funding package in March 2018, at which time the company also made the decision to build a silver mine. Most of the mining takes place underground, and the company has been granted an environmental permit with an annual mining volume of 500,000 tonnes. With the currently known ore reserves, the mine's projected operating time is six years.

In December 2018, the company filed an application for amendments to the environmental permit for increasing the mining volume to 1,800,000 tonnes a year, which would enable increasing the capacity of the ore concentration plant to 600,000 tonnes a year from the currently planned capacity of 450,000 tonnes.

In October 2018, Sotkamo Silver entered into an agreement with Boliden for the sale and delivery of the concentrates produced at the silver mine. The estimated value of deliveries during the four-year contract period is approximately EUR 120 million at current metal prices.

Silver in the portfolio of Finnish Minerals Group

The nickel, cobalt and lithium – three key battery metals – produced by our other holdings are currently attracting significant national and international attention. However, the electrification of transport, the proliferation of solar energy use and other technological advances also increase the demand for various other important metals such as silver.

In line with the state-owner's policy, the shares of Sotkamo Silver were transferred from Finnish Industry Investment Ltd to Finnish Minerals Group in October 2018. During our period of ownership, the market price of Sotkamo Silver's share has not changed markedly.

Sotkamo Silver's mining project includes the construction of an ore storage facility and a concentration plant.

KELIBER'S PROJECT IS AN IMPORTANT PART OF THE BATTERY VALUE CHAIN

The lithium minerals are intended to be utilised in the production of battery chemicals.

KELIBER Ltd owns spodumene deposits that are located, among other places, in the municipalities of Kokkola and Kaustinen in Finland. In addition to the mining permit for Länttä, the company currently holds several exploration permits and claims in the extensive lithium province of Central Ostrobothnia. In December, Keliber also received a mining permit for the Syväjärvi mining site.

The company is mainly owned by Finnish investment companies and private investors. As of 31 December 2018, the largest shareholder was Norwegian Nordic Mining ASA, which holds approximately 22 percent of the company's shares.

According to the state-owner's policy, the Keliber shares held by Finnish Industrial Investment Ltd were transferred to Finnish Minerals Group in October 2018, making us the second largest owner of the company with a shareholding of 17.6 percent. Other large owners include Mine Invest Oy, Ilmarinen Mutual Pension Insurance Company, Thominvest Oy and Jorma Takanen.

The definitive feasibility study completed

The definitive feasibility study for the lithium project was completed in June 2018, confirming the project's feasibility as a business venture. With the current ore reserves, and based on Keliber's own mining production, the operating time is 13 years, but the plan is to extend production by acquiring spodumene concentrate from third parties for a period of seven years after ore mining has ended at the company's own mines. There is also great potential for discovering new ore deposits in the area, and the possibility to continue operations relying on own ore reserves.

A concentrator with an annual capacity of 600,000 tonnes is planned to be built in the Kalavesi area of Kaustinen. This would make the amount of lithium carbonate produced at the chemical plant in Kokkola approximately 11,000 tonnes. The investment costs for the mines, the concentrator and the chemical plant during the project are estimated to total EUR 255 million.

Keliber has decided to build its lithium chemical plant in Kokkola.

Keliber has announced that it has launched a test programme relating to the production of battery-grade lithium hydroxide. This is driven by the development of battery technology and the future transition to higher nickel-content EV batteries, as well as the interest shown by European car manufacturers for these batteries.

Europe's first producer of lithium chemicals

In our view, Keliber has great potential and a major role to play in the development of the Finnish value chain for lithium-ion battery manufacturing. Keliber's project is ahead of all other lithium chemicals projects in Europe. The company's plans also include the possibility to increase the production of lithium chemicals at the planned production plant in Kokkola with third-party spodumene concentrate.

RESPONSIBILITY

GENERATING SUSTAINABLE SOCIETAL BENEFITS THROUGH RESPONSIBLE ACTIONS

The mission of Finnish Minerals Group is to responsibly maximise the value of Finnish minerals. Responsibility is an inseparable and solid part of the company's strategy and business operations.

THE PREPARATION of the company's responsibility policy began in 2018, and it was adopted in early 2019. The policy defines the main principles, priorities and objectives for responsibility that guide the company's operations. The policy also supports Finnish Minerals Group in its risk management and the maximisation of positive impacts.

We want to promote responsible mining and participate in curbing climate change. In our opinion, adding sustainable value to society is only possible through responsible business.

Responsibility begins with our values and strategy

At Finnish Minerals Group, responsibility is based on the company's values and strategy. We are curious and always seek new ways to improve our operations. We act boldly and develop responsibility within the industry. We take part in public discussion on the responsibility of the mining sector and engage in long-term cooperation with our partners and stakeholders. We take account of the various aspects of responsibility and the expectations of our stakeholders.

Responsibility is good for our business and provides a foundation for being a wanted, trusted and valued partner and employer. We guarantee our employees a safe and fair working environment and take care of their well-being. Keeping the lines of communication open to our external stakeholders will help us secure our operational continuity and social licence to operate.

The main themes of our responsibility efforts are social impact, development of the mining industry value chain, and taking responsibility for the environment and the climate.

Responsible investing creates jobs

Adding value to the national economy is important to us. By owning and financing companies, we aim to generate long-term returns on our capital investments, while creating new jobs in Finland and securing livelihoods in a sustainable manner.

We assess the responsibility of the operations of our target and partner companies. We monitor and support the development of our portfolio companies through continuous cooperation and, where necessary, provide recommendations for actions.

A responsible value chain is a competitive advantage

By operating responsibly, choosing the right partners and committing to long-term cooperation, we contribute to building a value chain for minerals and ores in which responsibility is a competitive advantage. This requires commitment, competence and continuous improvement from us and our partners.

We want to serve as an example in the mining sector, and we actively participate in the development of responsibility within the international mining and battery manufacturing sector as a whole. Through the Finnish Mining Association (FinnMin), we belong to the Network for Sustainable Mining and have agreed to comply with its principles.

We expect our portfolio companies to analyse the risks and opportunities associated with their operations.

"We want to promote responsible mining and participate in curbing climate change."

Curbing climate change

We take the environment and climate change mitigation into account in everything we do. We control the environmental and climate impacts of our own operations and strive to minimise them.

We expect our portfolio companies to report on and minimise their environmental impact. Our research and development work creates know-how and technologies which promote the efficient use of natural resources and the circular economy, as well as helping to reduce the environmental load of mining activities. An integrated, responsible battery value chain will enable the sustainable electrification of transport, industry and housing, which will help reduce the adverse effects of climate change.

TERRAFAME AS AN EXAMPLE FOR COMBINING ENVIRONMENTAL AND PRODUCTION OBJECTIVES

OF FINNISH Minerals Group's portfolio companies, its subsidiary, Terrafame, was the only one with production activity in 2018. Since the beginning of the ramp-up of production in autumn 2015, Terrafame has been addressing the most important responsibility issues of mining: the environment and occupational safety.

The water management problems during the early stages of the company's operations have been resolved, and the amount of water within the mining site has been stabilised to a target level. The key to achieving this is a well-functioning production process that enables water purification in an efficient and effective way. In 2018, the sulphate load of discharge water was only 21 percent of the annual quota set in the environmental permit. The metal loads were also clearly below the environmental permit's quotas. Terrafame's good results are a concrete example of how effective production and environmental management are not mutually exclusive – on the contrary, they support each other and together create a foundation for successful long-term business.

Also, the results of occupational safety have been good during Terrafame's years in operation, especially in 2017. In 2018, the lost-time injury frequency rate (LTIFR) of Terrafame's own personnel was 7.4 per million hours worked. However, the target set by Terrafame was not achieved, and the company continues to work on improving occupational safety.

ECONOMIC IMPACT

THE MINING INDUSTRY HAS A WIDE ECONOMIC IMPACT ON SOCIETY

Every year, the mining industry produces significant economic effects in Finland, which are reflected in many sectors.

MINES are a part of Finnish society, and the work done at mining sites promotes well-being in Finland. According to a study commissioned by the Finnish Mining Association (FinnMin), the mining industry generated approximately EUR 3.1 billion of revenue in Finland in 2016 excluding investments.

The indirect effects of the industry are spread across a wide range of sectors such as industry, transport and storage, as well as electricity, gas and heat supplies.

Jobs and development opportunities

Mines are operated in different parts of Finland, and they often create jobs in areas where few jobs are available. In addition to work, mining companies offer their staff development and training opportunities as well as different career paths. For these reasons, jobs in the mining industry are also valued locally. Ten jobs in the mining industry create another 15 jobs in Finland.

According to the study, the employment impact of the mining industry amounted to approximately 13,000 person-years in direct and indirect jobs. The economic impact is further enhanced by employees buying products and services with the money they earn.

Impact on GDP 1.2 billion

In 2016, the mining sector added approximately EUR 1.2 billion to Finland's GDP. The overall impact of mines and domestic metals processing on GDP is approximately EUR 5.8 billion per annum.

Similar to other industries, the mining sector generates tax effects for the state and municipalities, including the community tax, VAT, excise duty and taxes paid by employees.

Investments bring benefits to local businesses

Investments in the mining industry have fluctuated significantly in the 2000s, depending on new mines and how active the sector has been. In 2016, investments in the mining industry were estimated to account for 0.8% of the investments in all sectors.

The money invested in mining operations in Finland will mostly stay in the areas surrounding the mine, and a large part of the work related to investments can be made by companies operating in Finland.

Significant job impact of portfolio companies

Of Finnish Minerals Group's portfolio companies, Terrafame's production operations were launched in late 2015 and Sotkamo Silver will start production in the spring of 2019. The production operations of both companies take place in Sotkamo.

According to the studies conducted by Ramboll Finland, with the indirect effects included, Terrafame's mine and metals production plant employ approximately 1,500 people. Elsewhere in Finland, with the entire supply chain taken into account, the employment impact is approximately 2,800 person-years. In addition to this, the battery chemicals plant will bring additional work to Terrafame's industrial site for approximately 150 people, with the indirect effects being 140–220 person-years in Kainuu and 120–340 person-years elsewhere in Finland.

Sotkamo Silver's mine will directly bring approximately 100 new jobs to the Kainuu region and indirectly approximately 300–400 jobs.

The money invested in mining operations will mostly stay in the areas surrounding the mine. Photo from Sotkamo Silver.

ECONOMIC EFFECTS OF MINING INDUSTRY IN FINLAND

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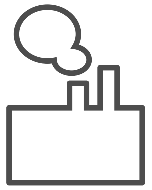
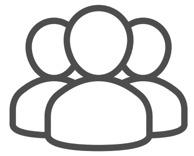


Total production output of EUR 3.1 billion, excluding investments.

1,2

Value added approximately EUR 1.2 billion of GDP. The combined impact of mines and metals processing approximately EUR 5.8 billion.

13,000



Direct and indirect employment impact totals approximately 13,000 person-years.

The figures are based on data for 2016.

TAX CONTRIBUTION

TAX CONTRIBUTION OF FINNISH MINERALS GROUP COMPANIES

This report includes information about the management of tax matters by Finnish Minerals Group companies, and an itemisation of taxes paid to Finland. Finnish Minerals Group companies only operate in Finland and do not pay taxes in other countries. The report is based on the guidance on tax reporting issued on 1 October 2014 by the Government Ownership Steering Department.

FINNISH Minerals Group companies act responsibly from the perspective of corporate governance. The companies – their management and personnel – are committed to observing all applicable laws and regulations in their work. The companies are also committed to implementing corporate social responsibility in accordance with the state ownership policy.

Finnish Minerals Group companies fulfil their obligations to 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. The companies ensure the professional competence of personnel who deal with tax issues and, if necessary, use the best possible external expertise.

> **"The operations are guided by principles that emphasise responsibility."**

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 Ltd are responsible for the organisation of tax matters together with Terrafame's CFO. In 2018, the companies engaged external experts in tax matters and focused on active cooperation with the Tax Administration of Finland.

The operations are guided by principles that emphasise responsibility. The companies do not plan their operations with the aim of gaining tax benefits, and they have no operations 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.

Reporting principles

The report is based on financial statements and accounting documents drawn up in accordance with the Finnish Accounting Act (1336/1997 of 30 December 1997). The reported taxes are based on account- and voucher-specific accounting. Taxes are reported in thousands of euros.

The report excludes mandatory insurance premiums that are included in salary costs. These insurance premiums are dealt with as direct salary costs. Finnish Minerals Group companies do not report small amounts of value-added tax included in foreign travel and training costs.

Itemisation of taxes

Terrafame's first two years of operation showed a deficit, due to the production ramp-up. For this reason, the companies do not yet have any taxable income. However, a considerable amount of tax expenses have accumulated due to the energy and fuel taxes. Furthermore, the companies have paid taxes related to the acquisition and ownership of assets, as normal.

KEY FIGURES 2018	**Finnish Minerals Group**	**Terrafame Ltd**	**Group total**
Net sales, EUR 1,000	222	325,830	325,830
Earnings before tax, EUR 1,000	-1,485	-6 171	
Average number of personnel during the financial year	8	669	677

KEY FIGURES 2017	**Finnish Minerals Group**	**Terrafame Ltd**	**Group total**
Net sales, EUR 1,000	458	220,024	220,024
Earnings before tax, EUR 1,000	-3,019	-9,601	-15,005
Average number of personnel during the financial year	5	694	699

The table below presents the tax categories per company – first for 2018 and then for 2017, which is the year of comparison.

2018

EUR 1,000	**Finnish Minerals Group**	**Terrafame Ltd**	**Group total**
Taxes paid			
Direct taxes paid	**323**	**921**	**1,244**
Income taxes	0	0	0
Asset transfer taxes	316	43	359
Property tax	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	237	7,649	7,886
Value-added tax, net	-211	6,691	6,480
Value-added tax, sales	147	78,299	78,446
Value-added tax, purchases	-358	-71,607	-71,965
Total	**349**	**20,180**	**20,529**
Ratio of tax payments to net sales	157,21%	6,19%	6,30%

2017

EUR 1,000	**Finnish Minerals Group**	**Terrafame Ltd**	**Group total**
Taxes paid			
Direct taxes paid	**8**	**1,146**	**1,154**
Income taxes	0	0	0
Asset transfer taxes	0	4	4
Property tax	0	545	545
Employer's social security contributions	5	354	359
Parafiscal charges	3	243	246
Indirect taxes paid	**1**	**5,654**	**5,655**
Electricity taxes, net	0	1,282	1,282
Electricity taxes	0	2,742	2,742
Electricity taxes, return	0	-1,460	-1,460
Insurance premium tax	1	331	332
Fuel taxes, net	0	4,019	4,019
Fuel taxes	0	4,653	4,653
Fuel taxes, return	0	-634	-634
Waste tax	0	22	22
Taxes collected and accounted for	**-38**	**-22,557**	**-22,595**
Tax withheld in advance	183	7,156	7,339
Value-added tax, net	-221	-29,713	-29,934
Value-added tax, sales	110	47,398	47,508
Value-added tax, purchases	-331	-77,111	-77,442
Total	**-29**	**-15,757**	**-15,786**
Ratio of tax payments to net sales	-6,32%	-7,16%	-7,17%

On 31 December 2018, the Finnish Minerals Group companies had unrecognised deferred tax assets of approximately EUR -33.3 million, which consist of the estimated taxable result for the financial year 2018 (EUR 4.2 million), the taxable result for the financial year 2017 (EUR 0.5 million), the confirmed loss for the financial year 2016 (EUR -20.9 million) and the confirmed loss for the financial year 2015 (EUR -17.1 million).

GOVERNANCE WAS DEVELOPED IN LINE WITH THE NEW MANDATE

Finnish Minerals Group is a special-purpose company fully owned by the State of Finland. In 2018, the company governance was developed, for example, by extending the Board of Directors and establishing a Management Team to support the CEO.

GOVERNANCE and decision-making at the company are guided by the Articles of Association, the Finnish Companies Act and other legislation in force, the Government Resolution on State Ownership Policy, and the policies and guidelines approved by the company's Board of Directors.

General meeting

The general meeting is the highest decision-making body in the company. The Annual General Meeting was held on 24 April 2018, in addition to which four extraordinary general meetings were held. The extraordinary general meetings related to decisions on the implementation of the expansion of the company's mandate and the appointment of new Board members.

Board of Directors

The 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 the term of the Board expires at the close of the next Annual General Meeting following the election of the Board.

Throughout 2018, the Chairman of the Board of Directors was Janne Känkänen and the members were Juha Majanen and Minna Pajumaa. In October 2018, Antti Kummu and Eeva Ruokonen were also appointed as members of the Board. The Board of Directors has adopted written rules of procedure, in which its main tasks and operating principles have been recorded. In 2018, the Board of Directors had 19 meetings.

CEO and Management Team

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

In October 2018, a Management Team was established for the company to assist the CEO with managing and developing the company's overall operations. The Management Team is also in charge of handling and preparing matters presented to the Board of Directors. The Management Team meets regularly and comprises CEO Matti Hietanen, Investment Director Timo Kärkkäinen, Chief Research Officer Jani Kiuru, SVP, Battery Operations Vesa Koivisto, and General Counsel Maria Neovius.

> "The general meeting is the highest decision-making body."

Other administration

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 is KPMG Oy Ab, with Antti Kääriäinen, APA, as principal auditor.

REMUNERATION SYSTEM SUPPORTS THE ACHIEVEMENT OF OBJECTIVES

The remuneration system of Finnish Minerals Group complies with the current state ownership policy.

THE TOTAL amount of salaries and rewards paid in 2018 was EUR 681,834. Remuneration system is developed as the company's operations change so as to support the achievement of the objectives set in the best way possible.

The Annual General Meeting of the company decides on the remuneration payable to Board members. The remuneration payable to the members of the Management Team and other personnel is decided by the Board of Directors. The company has not used the services of any external advisors for preparations related to remuneration.

> "Decisions concerning the remuneration system are made by the Board of Directors, which also monitors the achievements. "

Board of Directors fees and other benefits

Board of Directors fees are paid in cash as monthly fees and meeting fees. Board members are excluded from the company's other remuneration or pension plans. In 2018, the Board of Director's fees totalled EUR 71,300. Of this, the Chairman of the Board's fees accounted for EUR 31,500.

Remuneration of the CEO, Management Team and other personnel

The salaries of the CEO, the members of the Management Team established at the beginning of September 2018 and personnel members are based on fixed monthly salaries. In 2018, the company had a performance-based bonus system for management and personnel. Decisions concerning the reward system are made by the Board of Directors, which also monitors the achievement of the objectives underlying the remuneration.

The total amount of remuneration paid to the CEO in 2018 was EUR 182,136. The total amount of remuneration paid to the other members of the Management Team for the time it was in operation, i.e., from September to December 2018, was EUR 136,959.

The maximum performance bonus for the CEO is 30 percent of his annual salary. The maximum amount of performance bonus for the members of the Management Team and other personnel is 20–30% of their annual salary in accordance with the job requirement level.

In total, EUR 20,000 in performance bonuses was paid to the company's personnel in 2018. The CEO was not covered by the performance-based bonus system in 2017, and therefore did not receive any performance bonus in 2018.

More detailed information on remuneration is available in the Financial Statements.

BOARD OF DIRECTORS

JANNE KÄNKÄNEN | Chairman of the Board
Head of EU and International Affairs
Ministry of Economic Affairs and Employment of Finland
Born 1967
Master of Social Sciences

ANTTI KUMMU
Partner
Capman Growth Equity
Born 1976
Master of Science (Economics), CFA

JUHA MAJANEN
Budget Counsellor, Deputy Head of Budget
Head of the Fiscal
Ministry of Finance
Born 1967
Master of Laws

MINNA PAJUMAA
Leading Adviser
Prime Minister's Office
Born 1963
Master of Science (Economics), CEFA

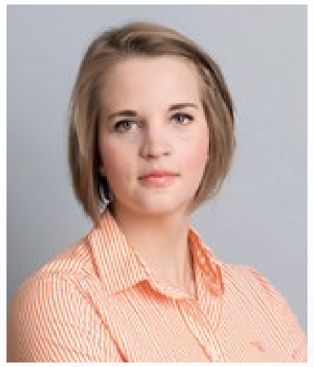
EEVA RUOKONEN
CEO
Oy Terrekta Ab
Born 1960
Master of Science (Technology), Licentiate of Science (Technology), MBE (diploma)

PERSONNEL

MATTI HIETANEN *
CEO
Born 1977
Master of Laws (trained on the bench), Master of Science (Economics)

SINI ESKONNIEMI
R&D Manager
Born 1984
Master of Science (Technology)

ROBERT GUSTAFSSON
Associate
Born 1989
Bachelor of Arts in Social Sciences



KAISA KIIPULA
Development Manager
Born 1990
Master of Science (Technology)

JANI KIURU *
Chief Research Officer
Born 1975
Doctor of Science (Technology)

VESA KOIVISTO *
SVP, Battery Operations
Born 1966
Master of Science (Technology), Master of Business Administration

TIMO KÄRKKÄINEN *
Investment Director
Born 1963
Master of Science (Economics)

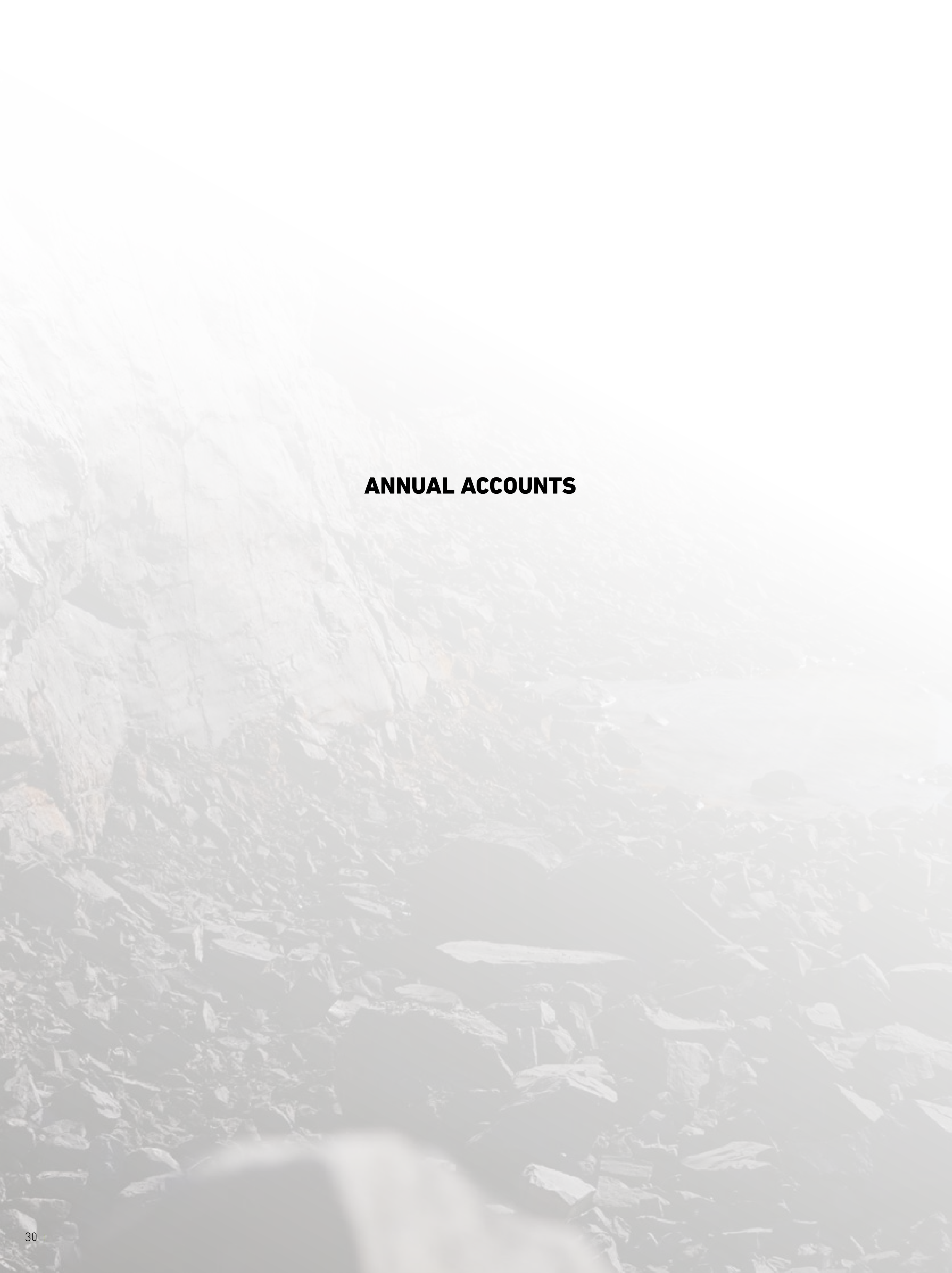
MARIA NEOVIUS *
General Counsel
Born 1972
Master of Laws

VILHELMIINA RUOHONEN
Executive Assistant
Born 1980
Master of Hospitality Management

PIRITTA SALONEN
Senior Technology Manager
Born 1974
Master of Science (Technology)

EMIL VIITALA
Counsel
Born 1986
Master of Laws

* MEMBER OF MANAGEMENT TEAM



ANNUAL ACCOUNTS

GROUP IFRS

PARENT COMPANY FAS

REPORT FOR THE FINANCIAL PERIOD 1 JANUARY–31 DECEMBER 2018

Significant events during the financial period

Suomen Malmijalostus Oy is a state-owned special-purpose company subject to ownership steering by the Ministry of Economic Affairs and Employment, with a mission to develop 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 Ltd.

Official registered name of the company is **Suomen Malmijalostus Oy** but the company also uses an auxiliary company name **Finnish Minerals Group**, which is mainly used in the Annual Accounts.

Finnish Minerals Group's most important asset item is its subsidiary, Terrafame. Finnish Minerals Group and Terrafame are the companies forming Finnish Minerals Group companies ('Group companies'). Terrafame produces nickel, zinc, cobalt and copper at its mine and metals production plant located in Sotkamo, Finland.

The other portfolio companies of Finnish Minerals Group on 31 December 2018 were Keliber Oy (shareholding of 17.6%), Ferrovan Oy (shareholding of 16.0% based on convertible bond options) and Sotkamo Silver AB (shareholding of 2.05%).

Operations of Finnish Minerals Group

The operations of Finnish Minerals Group under the new, expanded mandate began in June 2018. The company's strategy and organisation were aligned with its new mission and operating field and approved in the summer of 2018, and the recruitment process made necessary by the expansion was completed at the end of the summer. The company's three business areas are: investing and ownership in the mining sector, including the duties as Terrafame's parent company; R&D; and the development of a Finnish value chain for the manufacturing of battery cells.

In the summer of 2018, the state-owner allocated EUR 46 million of capital to Finnish Minerals Group in connection with its new, expanded mandate. Focusing of the State's mining industry holdings was completed in October 2018, when Finnish Industry Investment Ltd transferred to Finnish Minerals Group the holdings and claims in Keliber Oy (17.6% of the company's shares), Ferrovan Oy (convertible bond entitling to subscribe for a maximum of 12,6% of the company's shares) and Sotkamo Silver AB (2.05% of the company's shares).

In October 2018, Finnish Minerals Group took part in the additional financing arrangement for Terrafame's investment in the construction of a new battery chemicals plant. The investment costs for the battery chemicals plant amount to approximately EUR 240 million. A funding package of USD 200 million agreed between Terrafame, Finnish Minerals Group, Galena Asset Management, Trafigura Group and Sampo Plc was already announced in November 2017. In October 2018, the parties agreed on a complementary funding package of approximately EUR 100 million. The contribution of Finnish Minerals Group to this funding was an equity investment commitment of EUR 30 million, implemented in such a way that EUR 30 million was reallocated to the plant project from the EUR 50 million investment commitment granted to Terrafame in February 2017. The financing arrangement did not affect Finnish Minerals Group's liabilities towards Terrafame, nor did it require new contributions from the State. The financing arrangement is described in more detail in Terrafame's Annual Report.

In December 2018, Finnish Minerals Group allocated capital to Terrafame with the payment of the remaining EUR 20 million from the investment commitment granted to Terrafame in February 2017.

In October 2018, Finnish Minerals Group contributed to Ferrovan's EUR 7.5 million funding round together with the company's largest shareholders and financiers. Finnish Minerals Group was the main lender for the convertible bond with a contribution of EUR 4.5 million, of which EUR 3.15 million was granted by the end of the year. The convertible bonds held by Finnish Minerals Group give the company the opportunity to acquire a 16% shareholding in Ferrovan.

In preparation for investing in the Finnish value chain for lithium-ion battery manufacturing, Finnish Minerals Group carried out a pre-feasibility study on the investing options and opened lines of communication in order to identify cooperation opportunities. The company is also closely involved in the European Battery Alliance, launched by the European Commission, aiming to establish battery production in Europe.

The R&D activities of Finnish Minerals Group are discussed separately in the report.

During the financial year, Finnish Minerals Group provided services to Terrafame, for example in the preparation of financial arrangements, legal matters, communications and public relations, as well as in R&D activities.

Operations of Terrafame

Production

Production ramp-up, stabilisation and cost-efficiency improvement measures continued at Terrafame during 2018. The full capacity production levels for nickel and zinc were achieved in the third quarter. During the year, 46,334 tonnes of nickel and 97,633 tonnes of zinc were mined and transferred to bioleaching. The aggregate mining volume was 42.2 million tonnes. In 2018, Terrafame produced 27,377 tonnes of nickel and 61,608 tonnes of zinc (2017: 20,864 and 47,205 tonnes). The production of cobalt and copper also continued alongside the main products.

The data on Terrafame's mineral resources and ore reserves were updated in the summer in accordance with the 'JORC Code', which is the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves in the mining sector. According to an independent, external assessment, the company's measured, indicated and potential mineral reserves amount to 1,525 million tonnes.

In 2018, Terrafame handled all nickel-cobalt deliveries and 80 percent of zinc deliveries to end-customers via Trafigura's sales network in accordance with the sales agreements concluded with Trafigura Ventures V B.V. Sales volumes grew in line with production, and Terrafame's net sales increased to EUR 325.8 million (2017: EUR 220.0 million).

Occupational safety

While the total recordable injuries (TRI) rate remained at the previous year's level, the year also saw more lost-time injuries compared to a year earlier. One of the injuries occurred in a serious fall accident, after which the work practices used were carefully reviewed to prevent similar accidents from happening in the future.

Terrafame's personnel experienced 8 lost-time injuries, making the lost-time injury frequency rate (LTIFR) for the whole year 7.2 injuries per one million person-hours worked (2017: 3.5). The target LTIFR of less than 2.5 was not achieved. The workers of partner companies operating in Terrafame's industrial site experienced 9 lost-time injuries, which makes the total combined LTIFR for the companies 10.7 (2017: 11.7).

Efforts relating to occupational hygiene continued in the form of hygiene measurements and inspection and counselling visits to various workstations. According to the biomonitoring results for the year, the total concentration of nickel in the urine of Terrafame employees corresponded to the average concentrations in Finland, and no cases of occupational diseases were found at the company in 2018. Terrafame also largely required that its partner companies operating in the industrial site carry out biomonitoring.

Market developments

Global demand for Terrafame's main products – nickel and zinc – continued at a good level in the market in 2018. The total combined nickel stocks of the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) decreased by approximately 190,000 tonnes, equalling five weeks' demand at the end of the year. Zinc stock levels decreased by 100,000 tonnes, equalling a week's demand at the end of the year. Over the course of the year, the trade disputes between the USA and China had a negative impact on the development of the world market prices of many metals. At the same time, however, the US dollar strengthened against the euro by 4.5 percent.

The first half of 2018 saw an uptrend in the world market price of nickel, but the price fell sharply lower during the second half of the year. The average price in 2018 was USD 13,122 per tonne (2017: 10,411 per tonne), which was 26.0 percent higher in dollars and 20.6 percent higher in euros compared to the previous year's average price.

The world market price of zinc in US dollars began declining in February 2018, but then levelled off in the fourth quarter. The average price in 2018 was USD 2,922 per tonne (2017: 2,896 per tonne), which was 0.9 percent higher in dollars and 3.5 percent lower in euros compared to the previous year's average price.

The world market prices of cobalt and copper also fell towards the end of the year.

Investment in the battery chemicals plant and Terrafame's financing arrangements

In October 2018, Terrafame decided to build a 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. It is an investment in the further processing of the current main product of Terrafame – nickel-cobalt sulphide – into nickel sulphate and cobalt sulphate, which are used in the manufacture of lithium-ion batteries. The annual production capacity of the battery chemicals plant is 170,000 tonnes of nickel sulphate and 7,400 tonnes of cobalt sulphate. The direct investment costs for the battery chemicals plant amount to approximately EUR 240 million.

With regard to the construction of the battery chemicals plant, Terrafame's owners agreed already in November 2017 on the funding package of USD 200 million in total, of which USD 100 million was equity financing and USD 100 million was debt financing. Half of the equity financing was paid in 2017 and half at the end of 2018. None of the debt financing has been used yet.

In the context of making the final investment decision for the plant in October 2018, Finnish Minerals Group, Trafigura and Galena Fund agreed on a supplementary funding package of approximately EUR 100 million. In the supplementary financing arrangement, Trafigura committed to a 50 million loan facility, while both the Galena Fund and Finnish Minerals Group contributed EUR 30 million each in the form of equity investment commitments.

The equity investments of the financing arrangement agreed in October 2018 will be realised with the same Terrafame share price as in the previous financing arrangements concerning Terrafame. Equity investments also provide Galena with a call option to later subscribe for Terrafame shares in the value of approximately EUR 17 million in total with a price that is 15% higher than the price used in arrangements so far. As part of the financing package, Trafigura and Terrafame continued their zinc sulphide streaming agreement for another five-year period. The agreed loan facility does not include giving option rights to the creditors or the right to obtain interest on the loan in Terrafame shares.

In addition to the financing arrangement described above, in December 2018, the remaining EUR 20 million was paid to Terrafame from the Finnish Minerals Group's investment commitment granted to Terrafame in 2017.

Taking into account all the financing arrangements since the start of Terrafame's operations, the company has accumulated a total of approximately EUR 188 million from the Galena Fund in equity financing, and approximately EUR 179 million from Trafigura and approximately EUR 46 million from Sampo in debt financing. The contribution of private financiers therefore is approximately EUR 413 million in total. Finnish Minerals Group has financed Terrafame throughout its operating history with approximately EUR 456.8 million in total. The above amounts include all financial items, in other words, also any unused investment commitments.

On 31 December 2018, Finnish Minerals Group held approximately 77.0%, Galena approximately 22.7% and Sampo approximately 0.3% of Terrafame shares. These holdings do not take account of the above amounts of equity financing paid to the company in late 2018, i.e. a USD 50 million contribution of the Galena Fund based on the financing arrangement of October 2017 and a EUR 20 million contribution of Finnish Minerals Group based on the investment commitment of February 2017. After the equity investments in the battery chemicals plant, Finnish Minerals Group's holding will fall to approximately 69.2% and Galena's holding will rise to approximately 30.6%. In the future, Finnish Minerals Group's holding may fall to 50.1% at the lowest, provided that Trafigura, Galena and Sampo use their call options to subscribe for shares and the interest on the loans is paid as shares. In such a case, Galena and Trafigura would hold approximately 45% of Terrafame shares and Sampo approximately 5%.

Financial review and key figures

Finnish Minerals Group

Finnish Minerals Group's net sales in the financial year 2018 totalled 325,8 million (2017: 220.0), EBITDA was EUR 32.1 million (2017:13.2), and operating loss EUR 2.3 million (2017: -7.9). The Group's result before appropriations and income tax totalled EUR -21,7 million (2017: -15.0). The loss for the financial year was EUR -22.1 million (2017: -15.0).

The total assets of Finnish Minerals Group were 788,4 million (2017: 694.5). The Group's return on equity was -5.3% (2017: -5.5%) and equity-to-assets ratio 59.7% (2017: 53.3%).

The Group's shareholders' equity totalled EUR 470.7 million (2017: 369.9), including the share of non-controlling interests in the financial year 2017, which were EUR 116.3 million (2017:71.4), and 159.3 million in liabilities (2017: 165.1) and 158.4 million in provisions (2017: 159.4). The Group's interest-bearing liabilities were EUR 93.9 million (EUR 90.6 million in the financial year 2017), of which EUR 0.4 million (2017: 1.3) were current and EUR 93.5 million (2017: 89.3) were non-current liabilities.

Terrafame Ltd

The 2018 net sales of the subsidiary, Terrafame, totalled EUR 325.8 million (2017: 220.0). The nickel content of nickel-cobalt product customer deliveries was 28,199 tonnes (2017: 20,287). The zinc content of zinc product customer deliveries was 62,139 tonnes (2017: 46,828).

EBITDA was EUR 32.8 million (2017: 13.6) and loss for the financial year was EUR -6.2 million (2017: -9.6).

Capital expenditure is reviewed at Terrafame in two groups: investments in improving productivity and capacity, and investments in sustaining capex. Capital expenditure during 2018 totalled EUR 81.5 million (2017: 92.7). Of this amount, EUR 37.9 million (2017: 69.6) was used on the improvement of productivity and capacity.

The main targets for investments related to improving productivity and increasing production capacity were launching the battery chemicals plant construction project, the completion of the construction of foundations for block 4 in the secondary leaching area and the waste rock area in block 1, and the deployment of a third hydrogen sulphide production line. The main targets for investments in sustaining capex included purchasing a dumper truck, an excavator and a wheel loader. The construction of the new emergency shelter was completed during the financial year.

Terrafame's year-end inventories totalled EUR 199.2 million (2017: 168.6). The value of work in progress on 31 December 2018 was EUR 170.7 million (2017: 138.0), and the value of raw material and spare part inventories was EUR 26.6 million (2017: 22.8), including an inventory provision for slow-moving items and inventory obsolescence reserve of approximately EUR 5.8 million (2017: 5.7). The value of the finished goods inventory was EUR 1.9 million (2017: 7.8).

Trade receivables at the end of 2018 totalled approximately EUR 17.0 million (2017: 24.7). Other receivables on 31 December 2018 totalled EUR 1.0 million (2017: 2.9). Prepaid expenses and accrued income amounted to approximately EUR 20.3 million (2017: 19.0), the most significant of which were derivative assets of approximately 10.9 million (2017: 11.7) due to hedging operations. At the end of 2018, cash and cash equivalents totalled EUR 96.7 million (2017: 106.4). Shareholders' equity at the end of 2018 was EUR 365.7 million (2017: 295.6).

In the financial year 2018, cash flow from operating activities was EUR 5.1 million (2017: -81.0), of which change in net working capital comprised EUR -20.6 million (2017: -88.8). Cash flow from investment activities was EUR -81.1 million (2017: 92.1).

During the financial year 2018, the cash flow of the subsidiary, Terrafame, was hedged against dollar and metal price fluctuations in accordance with the company's hedging policy.

Key financial figures

Consolidated	2018	2017
Net sales	EUR 325.8 million	EUR 220.0 million
EBITDA	EUR 33.5 million	EUR 13.2 million
Operating profit/loss	EUR 2.3 million	EUR -7.9 million
Operating profit, %	0.7%	-3.6%
Equity-to-assets ratio	59.7%	53.3%
Total assets	EUR 788.4 million	EUR 694.5 million
Wages and salaries	EUR 31.9 million	EUR 31.5 million
Personnel	677 persons	699 persons

Parent company	2018	2017
Net sales	EUR 0.2 million	EUR 0.5 million
EBITDA	EUR -1.9 million	EUR -3.3 million
Operating profit/loss	EUR -1.9 million	EUR -3.3 million
Operating profit, %	-860.5%	-711.7%
Equity-to-assets ratio	99.9%	99.9%
Total assets	EUR 517.5 million	EUR 462.8 million
Wages and salaries	EUR 0.7 million	EUR 0.5 million
Personnel	8 persons	5 persons

Personnel

At the end of the financial year, Finnish Minerals Group employed 11 persons. During the summer and autumn of 2018, six new employees were recruited to the company to carry out the tasks required by the expanded mandate.

Just under 1,300 people were regularly employed at Terrafame's industrial site during 2018. At the end of the year, Terrafame employed 667 people, in addition to which the company gave summer jobs to roughly 90 people. In addition to the company's own employees, its partner companies' employees worked at the industrial site.

The decision to invest in the battery chemicals plant prompted Terrafame to start building a local pool of professionals with industrial expertise by cooperating with educational institutions. Terrafame and Kajaani University of Applied Sciences have agreed on the provision of specialist training programmes in process engineering. In December, a call for applications was announced for apprenticeship training leading to vocational qualifications in the process industry, which will be organised at Terrafame's industrial site.

Environment

The amount of water at Terrafame's site met the target level well in 2018. The substance concentrations of purified water released from the site were clearly below permit levels, apart from individual exceptions. The sulphate load of discharge water during the year was 3,434 tonnes (2017: 10,468 tonnes) when the environmental permit's annual sulphate quota was 16,300 tonnes. The metal loads were also clearly below the environmental permit's quotas. Purified discharge water was released to the water courses in the north, mainly via a discharge pipe in Lake Nuasjärvi. The quality of the water in Lake Nuasjärvi was good and the lake is well-suited for recreational use. The sulphate content of lake water was lower than previously, and the metal concentrations in fish were at the normal level for Finnish lake fish.

Monitoring of the quality of groundwater in the mining site and its surrounding areas continued in accordance with an extensive groundwater monitoring programme. On the basis of a study completed at the beginning of 2017, there is contaminated groundwater in the immediate vicinity of the mine's primary leaching area. In 2018, improvements were made to the leaching solution collection system in the primary bioleaching area with the aim of preventing groundwater impact. No groundwater impact caused by the mine's operations was observed outside the mining site.

Mining operations always cause dust, noise and vibration effects that cannot be completely eliminated. The methods used to limit the effects included concentrating blasts on certain days and watering the roads in the summertime. With regard to air emissions, the operations met the permit limits, apart from a few individual exceptions.

The exceptional situations caused by the operations were mainly due to broken pipes or human errors. During the year, the number of pipeline inspections was increased and the situations that led to deviations were analysed to identify the appropriate corrective measures.

Permit processes

The environmental impact assessment of Terrafame's battery chemicals production, i.e. the EIA procedure, was launched in April 2018, at which time the EIA programme prepared by the company was announced by the Centre for Economic Development, Transport and the Environment (ELY Centre) for the Kainuu region. The final EIA report was announced in October. Terrafame aims to file the application for environmental permit for the production of battery chemicals in early 2019. In July, the municipality of Sotkamo granted a building permit for the upcoming battery chemicals plant in the existing plant area.

Terrafame filed an application for an environmental permit covering the entirety of its operations to the Northern Finland Regional State Administrative Agency (RSAA) in August 2017. The application for a new environmental permit was supplemented in July 2018 with the detailed process descriptions requested by the permit-issuing authority and plans for the new production areas. The company's current environmental and water management permits will remain in force until the new environmental permit covering all operations is legally valid.

Preparations for an EIA procedure concerning the final disposal of the water treatment precipitate placed into interim storage at the site by the previous operator, were initiated in early autumn. The procedure is scheduled to start in early 2019. The year 2018 also saw the preparation of the documentation on uranium recovery. The application for a uranium recovery permit, which was filed in 2017, was in process also during 2018.

In the beginning of summer 2018, an environmental permit was granted for a new hydrogen sulphide plant, which was commissioned in the summer. Other decisions received in late 2018 include the decision on the circulation zone in Lake Nuasjärvi from the RSAA and the decision on process precipitates from the Administrative Court of Vaasa. Additionally, at the end of the year, Terrafame had claims relating to permit decisions pending with the RSAA.

Responsibility

Responsibility is an inseparable part of operations at Finnish Minerals Group. The Group companies aim to contribute to climate change mitigation by offering the key raw materials needed in the production of lithium-ion batteries and by building an electric vehicle battery (EVB) value chain for the manufacture of lithium-ion batteries in Finland. The aim is to maximise the positive effects arising from the operations of the Group and its portfolio companies, such as direct and indirect economic value added, and to minimise any negative effects. At Terrafame, the responsibility of operations is especially reflected through occupational safety and environmental responsibility, as described in the company's annual report.

Research and development (R&D)

Research and development supports the technological and process development of the Group companies and the portfolio companies of Finnish Minerals Group, as well as providing technological support to the company's other business areas. The function also participates in the activities of national and international research networks, which means that it contributes to long-term modernisation within the industry.

The water management technology project, Ariel, which lasted approximately 2.5 years, was completed in the first quarter of 2018. At the same time, research and development moved towards broad-based research that supports the mineral value chain. The exploitation of the side streams generated in mineral extraction processes, the recycling of chemicals within a process and the improvement of the efficiency of unit processes were the key focus areas of research efforts. The final results of the Ariel project included reports on two holistic sulphate management solutions for application at Terrafame's site in Sotkamo. The solutions are based on sulphate recycling inside the process, as well as on sulphate recovery and using sulphate in new commercial products. Several less-extensive process solutions for enhancing sulphate control were also developed in the Ariel project.

Two EU-funded projects were launched in 2018. The four-year Nemo project carried out under the H2020 programme focuses on improving the efficiency of bioleaching and metals recovery and on the recovery of new products. Finnish Minerals Group's share of the project's total funding of approximately EUR 14.9 million is roughly EUR 1.4 million. The SO4Control project, which has received financing from EIT RawMaterials, demonstrates the use of a bioreactor in the recycling of sodium sulphate and examines the controlling of calcium precipitation. The combined share of Finnish Minerals Group and Terrafame of the project's total funding of approximately EUR 2.1 million in roughly EUR 350,000.

The Minepro project, which received national funding and was a part of the broader Ariel project, has been completed. Business Finland granted approximately EUR 600,000 to 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. Positive financing decisions were received from EIT RawMaterials for two new projects. In addition, Finnish Minerals Group is involved in the National BatCircle consortium for which funding applications were submitted to Business Finland in late 2018.

The research and development activities implemented by Terrafame are discussed more broadly in Terrafame's Annual Report.

Related party governance

The Board of Directors of Finnish Minerals Group has confirmed the related party policy for the Group companies. 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's commercial agreements, immediate family members of persons referred to here, as well as 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. Finnish Minerals Group has applied an exemption pursuant to which it only reports significant transactions with Government-related companies.

During the financial year 2018, Terrafame had a EUR 58.5 million (2017: 68.0) counter-guarantee granted by the State of Finland for arranging collateral in accordance with environmental permits, and a EUR 17.0 million third-party pledge provided by Finnish Minerals Group for environmental permits. Terrafame has acquired legal and other administrative services from Finnish Minerals Group, whereas Finnish Minerals Group has acquired financial management and IT services from Terrafame.

The sales of nickel-cobalt sulphide and zinc sulphide to Trafigura Ventures V B.V. company amounted to EUR 305.6 million (2017: 158.8) for the financial period.

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, Chairman of the Board of Terrafame. The expert services purchased were associated with consulting in the preparation of the formation of a Finnish battery value chain, meaning that they are not related to Terrafame. These services were necessary with regard to the upcoming feasibility studies, for example. The expert services were priced at current value.

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 were conducted on an arms-length basis.

Estimate of major risks and uncertainty factors affecting operations

The Boards of Directors and CEOs of the Group companies are responsible for organising internal control, risk management and internal auditing within the companies.

In 2018, Finnish Minerals Group approved a risk management policy which 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.

From the perspective of shareholder value, the key risks of Finnish Minerals Group relate to the business development of the subsidiary, Terrafame. The business development 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.

Finnish Minerals Group's Board of Directors regularly monitors and assesses risks related to the company's activities and its risk management measures.

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

Shares and shareholders

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

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 management of Finnish Minerals Group is also governed by the current Government Resolution on State Ownership Policy and the Articles of Association and 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 governance and operations.

The Chairman of the Board of Directors of Finnish Minerals Group was Janne Känkänen, and the other members of the Board were Juha Majanen, Minna Pajumaa and, as of 15 October 2018, Antti Kummu and Eeva Ruokonen.

The Board of Directors had no committees.

All Board members are independent of the company. Three out of five Board members are not independent of the company's sole shareholder, the State of Finland.

The Board of Directors of Finnish Minerals Group 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 subsidiary, Terrafame, with Authorised Public Accountant Antti Kääriäinen acting as the principal auditor.

Remuneration of the Board of Directors and other executives

From 1 January 2018 to 30 April 2018, the monthly remuneration of the Chairman of the Board was EUR 2 500 and that of the members of the Board was EUR 700, in addition to which an attendance fee of EUR 500 was paid for each meeting of the Board of Directors and the steering group of the subsidiary, Terrafame. (The steering group's activities have been merged with Terrafame's meetings of the Board of Directors so that the Chairman of the Board of Finnish Minerals Group has the right to participate in Terrafame's Board meetings in accordance with the shareholders' agreement.) The remuneration paid from 1 May 2018 to 31 December 2018 was otherwise the same, but the Chairman of the Board's fee was reduced to EUR 1,500. Board members do not own shares in the company and the company has no option scheme.

In 2018, the Board of Directors of Finnish Minerals Group had 19 meetings in total, of which two involved summary records of decisions and no attendance fees were paid (18 meetings in total in 2017). The Chairman of the Board, Janne Känkänen, participated in a total of two meetings of the steering group of the subsidiary, Terrafame. A total of EUR 42,300 was paid to Finnish Minerals Group's Board members in monthly remunerations and EUR 29 000 in attendance fees.

The subsidiary, Terrafame, reports the remuneration paid to its Board members and other executives in its own Annual Report.

The remuneration of the CEO of Finnish Minerals Group consisted of a fixed salary and phone and meal allowances. The CEO was not covered by the performance-based bonus scheme in 2017, and therefore he was not paid any performance bonus in 2018. For the year 2018, the CEO was covered by the company's performance-based bonus scheme, with a performance bonus of a maximum of 30% of his annual salary. The performance bonus for 2018 will be decided and paid in 2019.

The total amount of remuneration paid to the CEO, Matti Hietanen, in 2018 was EUR 182,136. The CEO is not covered by a contribution-based or other additional pension insurance. The CEO's retirement age is 65 years. The CEO's period of notice is one month without a separate severance pay. The CEO does not own shares in the company, and the company has no option scheme.

Remuneration of the Board of Directors and other executives

(EUR)	Monthly fees	Attendance fees	Total remuneration	Meetings of the Board of Directors	Subsidiary's steering group
Janne Känkänen	22 000	9 500	31 500	19/19	2/12
Antti Kummu	1 750	1 500	3 250	3/3	
Juha Majanen	8 400	8 500	16 900	19/19	
Minna Pajumaa	8 400	8 500	16 900	19/19	
Eeva Ruokonen	1 750	1 000	2 750	2/3	
Total remuneration 2018	42 300	29 000	71 300		

Significant events after the end of the financial period

The financial year of Finnish Minerals Group ended on 31 December 2018.

Terrafame completed the environmental impact assessment of battery chemicals production at the beginning of January 2019. The EIA report and the reasoned conclusion published on 8 January 2019 are both part of the statutory EIA procedure that must be completed in the course of the battery chemicals plant's environmental licensing process.

In February 2019, Finnish Minerals Group participated in a funding round totalling EUR 10 million with the other shareholders of Keliber. As a result of the funding round, Finnish Minerals Group invested EUR 6.0 million in Keliber. With the investment, Finnish Minerals Group's shareholding in Keliber increased to 24.3 percent.

The closing of the accounts for the fiscal year 2018 included a write-down of the convertible loans and associated option rights issued to Ferrovan Oy in Finnish Minerals Group's financial statements. A decision to apply for voluntary liquidation was made at the extraordinary general meeting of Ferrovan Oy held on 21 March 2019.

Estimate of future developments

Finnish Minerals Group will continue its operations as the Group's parent company, its investment operations, the development of a Finnish electric vehicle battery (EVB) value chain, and its research and development activities.

Terrafame will continue to develop production and improve cost efficiency further. During the first half of 2019, the application for an environmental permit for the battery chemicals plant will be submitted and the construction of the plant continued. The data on Terrafame's mineral resources and ore reserves were updated in June in accordance with the 'JORC Code', which is the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves in the mining sector. According to an assessment by an independent, external body, the measured, indicated and potential mineral reserves amount to 1,525 million tonnes. The ore reserves and mineral resources will enable the production and further processing of metals for several decades.

Board of Directors' proposal for the disposal of the result

The result of Finnish Minerals Group for the financial year 2018 shows a loss of EUR 12,435,217.77. On 31 December 2018, the distributable equity of Finnish Minerals Group totalled EUR 514,535,011.37.

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

KEY FIGURES

	2018	2017
Net sales	EUR 325.8 millon	EUR 220.0 millon
EBITDA	EUR 32.1millon	EUR 13.2 millon
Operating profit/loss	EUR 2.3 millon	EUR-7.9 millon
Operating profit, %	0.7%	-3.6%
Total assets	EUR 788.4 millon	EUR 694.5 millon
Wages and salaries	EUR 31.9 millon	EUR 31.5 millon
Average number of employees	677	699

$$\text{Equity-to-assets ratio,\%} = \frac{100 \times \text{Equity}}{\text{Total assets – advances received}}$$

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(1 000 euroa)	Note	2018	2017
Net sales	1.1	325 830	220 024
Cost of goods sold	1.3	-301 881	-201 722
Gross profit		23 949	18 303
Other operating income	1.4	2 534	796
Sales and marketing expenses	1.5	-1 360	-619
Administrative expenses	1.6	-17 082	-19 198
Other operating expenses	1.7	-5 737	-7 184
Operating profit/loss		2 304	-7 901
Finance income and finance expenses	1.8		
Other finance income		1 865	12 335
Change in fair value, other investments		-4 441	0
Change in fair value, financial securities		-6 306	0
Interest and other finance expenses		-15 074	-19 439
Total finance income and finance cost		-23 955	-7 104
Profit/loss before tax		-21 651	-15 005
Income taxes	1.9	-498	-11
Profit/loss for the period		**-22 149**	**-15 016**
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		13 605	-5 627
Taxes on items that may be subsequently transferred to profit or loss		-2 721	1 125
Other comprehensive income, net		10 884	-4 501
Total comprehensive income for the period		**-11 265**	**-19 518**
Distribution of profit for the period			
Owners of the parent		-19 914	-12 290
Non-controlling interests		-2 235	-2 726
		-22 149	**-15 016**
Distribution of comprehensive profit for the period			
Owners of the parent		-11 534	-15 769
Non-controlling interests		269	-3 749
		-11 265	**-19 518**
Earnings per share calculated from the profit attributable to the owners of the parent			
Basic earnings per share	1.10	-40,13	-26,67
Diluted earnings per share		-40,13	-26,67
Average number of shares:			
undiluted		496 208	460 808
diluted		496 208	460 808

CONSOLIDATED BALANCE SHEET

(EUR 1 000)	Note	31 Dec 2018	31 Dec 2017
ASSETS			
Non-current assets			
Intangible assets	1.12	1 464	1 674
Property, plant and equipment	1.13	342 460	291 809
Biological assets	1.14	6 712	5 236
Investments in other shares and participations	1.15	13 554	0
Deferred tax assets	1.22	0	1 125
Other receivables	1.16	8 776	29 931
Total non-current assets		**372 965**	**329 774**
Current assets			
Inventories	1.17	199 196	168 622
Trade receivables and other receivables	1.18	42 634	51 086
Cash and cash equivalents	1.19	173 559	144 990
Total current assets		**415 389**	**364 697**
Total assets		**788 354**	**694 471**
EQUITY AND LIABILITIES			
Equity attributable to equity holders of the parent	1.20		
Subscribed capital		2 258	2 258
Invested unrestricted equity fund		533 651	466 843
Fair value reserve	1.21	4 914	-3 479
Earnings from previous periods		-166 531	-154 839
Profit/loss for the period		-19 914	-12 290
		354 377	298 492
Share of non-controlling interests		116 338	71 410
Total equity		**470 715**	**369 902**
Non-current liabilities			
Deferred tax liabilities	1.22	2 118	25
Interest-bearing liabilities	1.26	93 499	89 299
Provisions	1.25	158 363	159 412
Total non-current liabilities		**253 980**	**248 736**
Current liabilities			
Interest-bearing liabilities	1.26	354	1 251
Trade and other payables	1.27	63 304	74 583
Total current liabilities		**63 658**	**75 834**
TOTAL EQUITY AND LIABILITIES		**788 354**	**694 471**

CONSOLIDATED CASH FLOW STATEMENT

(EUR 1 000)	Note	2018	2017
Cash flow from operating activities			
Profit/loss for the period		21 651	-15 017
Adjustments to operating profit/loss	1.28	21 021	8 727
Depreciation and amortisation		30 150	19 841
Change in net working capital		-20 154	-93 008
Interest paid		-4 884	-4 589
Interest received		839	1 361
Realised foreign exchange gains and losses		-28	-73
Net cash flow from operating activities		**5 294**	**-82 758**
Cash flow from investing activities			
Investments in tangible and intangible assets		-81 687	-91 399
Proceeds from sale of tangible and intangible assets		1	18
Collateral deposits on behalf of subsidiary		17 000	-17 000
Investments in other investments		-3 466	0
Net cash flow from investing activities		**-68 152**	**-108 380**
Cash flow from financing activities			
Subscription issue, share capitals		**91 271**	197 105
Borrowings (Proceeds from non-current borrowings)		0	100 000
Repayment of loans (Repayment of current borrowings)		-33	-957
Payment of finance lease liabilities		-874	-2 040
Net cash flow from financing activities		**90 364**	**294 109**
Net change in cash and cash equivalents		**27 506**	**102 970**
Effects of foreign exchange rate changes on foreign currency transactions and operations		1 064	-8 881
Cash and cash equivalents at beginning of period		144 990	50 900
Cash and cash equivalents at end of period		**173 559**	**144 990**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

(EUR 1 000)		*Equity attributable to equity holders of the parent*						
	Note	**Sub-scribed capital**	**Invested unre-stricted equity fund**	**Fair value reserve**	**Earnings from previous periods**	**Total share of the parent**	**Share of non-con-trolling interests**	**Total equity**
Equity 1 Jan 2017		2 258	389 343	0	-220 268	171 332	0	171 332
Adjusted equity 1 Jan 2017		2 258	389 343	0	-220 268	171 332	0	171 332
Comprehensive income								
Profit/loss for the period		0	0	0	-12 290	-12 290	-2 726	-15 016
Other comprehensive income (adjusted basis)								
Cash flow hedging		0	0	-3 479	0	-3 479	-1 023	-4 501
Total comprehensive income for the period		0	0	-3 479	-12 290	-15 769	-3 749	-19 518
Business transactions with shareholders								
Share issue		0	77 500	0	0	77 500	119 605	197 105
Stock options		0	0	0	16 053	16 053	4 720	20 773
Total business transactions with shareholders		0	77 500	0	16 053	93 553	124 325	217 879
Changes in subsidiary holdings								
Acquisitions of non-controlling interests not leading to change of control		0	0	0	49 376	49 376	-49 167	209
Equity 31 Dec 2017		2 258	466 843	-3 479	-167 129	298 492	71 410	369 902
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

ACCOUNTING POLICIES FOR CONSOLIDATED FINANCIAL STATEMENTS, AND NOTES

Basic information about the group

Suomen Malmijalostus -konserni on kaivos- ja Official registered name of the parent company is Suomen Malmijalostus Oy but the company also uses an auxiliary company name Finnish Minerals Group, which is mainly used in the Annual Accounts.

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) and the subsidiary Terrafame Ltd (Business ID 2695013-5), of which the parent company owns 77.0%.

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 Ltd.

Finnish Minerals Group's most important asset item is its subsidiary, Terrafame Ltd. Finnish Minerals Group and Terrafame are the companies forming Finnish Minerals Group ("Group companies"). 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 2018 were Keliber Oy (shareholding of 17.6%), Ferrovan Oy (shareholding of 16.0% based on convertible bond options) and Sotkamo Silver AB (shareholding of 2.05%).

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 Ltd 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 26 March 2019. 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 2018. 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 2017. 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

As of 1 January 2018, the Group has applied the following new and amended standards and interpretations:

IFRS 15 Revenue from Contracts with Customers

The new standard has replaced the previous IAS 18 and IAS 11 standards and the related interpretations. There are five steps to recognising revenue under IFRS 15. Applying IFRS 15, an entity recognises revenue to depict the transfer of promised goods or services to the customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Applying the standard has not had any impact on the amount or timing of the Group's revenue recognised. The standard has increased the disclosure requirements. The Group has applied the standard retroactively from the effective date. The principles for recognising revenue are described under "Revenue recognition".

Other amended standards or interpretations have not had any impact on the consolidated financial statements of Finnish Minerals Group. Terrafame Ltd started applying the IFRS 9 Financial Instruments standard in 2017, before its mandatory effective date.

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.

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 2018 or 31 December 2017. 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 (accounting by lessee)

Finance leases, which transfer to the Group substantially all the risks and benefits incidental to ownership of the leased item, are capitalised at the commencement of the lease at the fair value of the leased property or, if lower, at the present value of the minimum lease payments.

Lease payments are apportioned between finance charges and reduction of the lease liability, in accordance with the interest rate agreed in the leasing contract. Finance charges are recognised in the income statement.

Leased assets are depreciated over the useful life of the asset. However, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of the estimated useful life of the asset and the lease term.

During the fiscal years 2017 and 2018, the Group has had agreements classified as finance leases.

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.

An 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 in the period during which they are incurred.

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 2018 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 expenditure that is directly attributable to the acquisition, construction or production of the item.

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	10–15 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.

Intangible assets

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 that are physically attached to land are recognized 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% is made. The write-down increases annually by 25 percentage points, so the value of an item that has been in storage 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 production 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 2018 were valued at EUR 1.9 million at-cost on the basis of the acquisition cost. On 31 December 2017, finished products were valued according to the principle of net realisation value. Work in progress has been valued in the company's financial statements as of 2017 on a cost basis, as it was lower than the net realisable value. The value of work in progress on a cost basis was EUR 170.7 million on 31 December 2018.

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 through 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 2018 and 2017, 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, finance 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 company 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 company'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.

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 in the same 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 Ltd's balance sheet and that of the Group was EUR 158.4 million on 31 December 2018. 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 'proven' and 'probable' ore reserves, and 'measured' and 'indicated' 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 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.

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, 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.

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

Finnish Minerals Group has not yet applied the following, new or revised standards and interpretations already announced by the IASB. The Group will adopt them from the effective date of each standard and interpretation or, if the effective date is other than the first day of the financial year, from the beginning of the financial year following the effective date.

IFRS 16 – *Leases* (effective for annual reporting periods beginning on or after 1 January 2019): IFRS 16 replaces IAS 17 and the related interpretations. The standard requires lessors to recognise lease agreements in the balance sheet as a rental obligation and the associated right-of-use asset. Recognition in the balance sheet is much like IAS 17 accounting for finance leasing income. Balance-sheet recognition is subject to two exemptions related to short-term leases of up to 12 months and goods of a value of up to approximately USD 5 000. The accounting treatment of lessors will largely remain in line with the current IAS 17. The effects of IFRS 16 on the consolidated financial statements of Finnish Minerals Group are limited, but may become more important in the future. The Group will adopt IFRS 16 using the simplified procedure and therefore will not adjust the figures for the comparative period.

The accumulated effect of adopting IFRS 16 will be recognised in the opening balance sheet of 1 January 2019 under tangible fixed 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. In addition, depreciation of the right-of-use assets will be recognised in profit or loss.

In the context of adopting IFRS 16, Finnish Minerals Group will apply practical aids and account for lease agreements with lease terms expiring within 12 months (as of 1 January 2019) as short-term lease agreements and will not recognise the initial direct expenditure when valuating the right-of-use assets.

The Group estimates that the adoption of the standard will not have a significant impact on the amount of the lease liability and the corresponding right-of-use asset recognised on 1 January 2019. Finnish Minerals Group does not act as a lessor.

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 changes to standards are not estimated to have a material impact on the consolidated financial statements of Finnish Minerals Group.

1 NOTES

1.1 Net sales

	2018	2017
Breakdown by sector		
Metal	325 830	220 024
Total	325 830	220 024
Geographical breakdown		
Europe	324 353	186 526
Asia	401	30 778
United States	1 074	-248
Australia	2	2 969
Total	325 830	220 024

1.2 Employee benefit expenses and total depreciation

	2018	2017
Wages and salaries	31 886	31 516
Pension expenses	5 906	5 892
Other social security expenses	1 211	1 499
Total	39 003	38 908
The Group's average number of employees during the financial year	677	699
The Group's number of employees at the end of the financial year	678	656
Depreciation, amortisation and impairment charges total	**2018**	**2017**
Intangible rights	383	380
Other long-term expenditure	25	33
	408	413
Tangible assets		
Buildings	4 169	3 765
Machinery and equipment	19 877	13 059
Other tangible assets	6 741	3 905
	30 787	20 729
Total	31 195	21 142

1.3 Cost of goods sold

	2018	2017
Materials and services		
Raw materials and consumables		
Purchases during the financial year	142 263	125 001
Change in inventory	-3 883	2 739
	138 380	127 740
External services	73 699	66 451
Total	212 079	194 191
Change in inventory, products		
Change in inventory		
Change in inventory, Work in progress	-32 628	-87 906
Change in inventory, finished products	5 937	-7 219
Total	-26 691	-95 125
Personnel expenses		
Wages and salaries	26 489	26 943
Pension expenses	4 965	5 055
Other social security expenses	1 018	1 368
Total	32 472	33 366
Depreciation, amortisation and impairment charges		
Intangible rights	330	301
Tangible assets		
Buildings and structures	4 098	3 729
Machinery and equipment	19 824	13 036
Other tangible assets	6 730	3 893
Total	30 982	20 958
Other costs of goods sold	53 040	48 331
Total	**301 881**	**201 722**

1.4 Other operating income

	2018	2017
Revaluation of biological assets	1 476	57
Insurance claims	227	471
Proceeds from sale of tangible and intangible assets	1	6
Other fees and compensation, including sales of scrap metal and proceeds from tree felling	830	262
Total other operating income	**2 534**	**796**

1.5 Sales and marketing expenses

	2018	2017
Personnel expenses		
Wages and salaries	703	351
Pension expenses	133	66
Other social security expenses	30	12
Total	866	430
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	0	0
Total	0	0
Other expenses		
Sales and marketing misc. charges	494	189
Total	494	189
Total sales and marketing expenses	**1 360**	**619**

1.6 Administrative expenses

	2018	2017
Personnel expenses		
Wages and salaries	3 769	3 469
Pension expenses	634	630
Other social security expenses	126	94
Total	4 529	4 193
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	209	183
Total	209	183
Other expenses		
Other administrative expenses	12 160	14 686
Total	12 160	14 686
Auditors' fees		
Auditing	104	99
Tax advisory services	4	5
Other services	77	31
	184	**136**
Total administrative expenses	**17 082**	**19 198**

1.7 Other operating expenses

	2018	2017
Research and development costs		
Total research and development costs recognised as an expense	852	1 067
Personnel expenses		
Wages and salaries	522	609
Pension expenses	100	116
Other social security expenses	22	20
Total	644	745
Depreciation, amortisation and impairment charges		
Depreciation and amortisation	4	1
Total	4	1
Other expenses		
Other operating expenses	4 237	5 371
Total	4 237	5 371
Total other operating expenses	**5 737**	**7 184**

1.8 Finance income and finance cost

	2018	2017
Finance income		
Interest income from other deposits	170	75
Foreign exchange gains	1 064	11 439
Other finance income	632	820
Total finance income	**1 865**	**12 335**
Changes in fair value of financial assets at fair value		
Change in fair value, other investments	-4 441	0
Change in fair value, financial securities	-6 306	0
Total changes in fair value	**-10 747**	**0**
Finance expenses		
Other interest expenses	-6 671	-6 734
Foreign exchange losses	-4 210	-8 918
Other finance expenses	-4 193	-3 786
	-15 074	**-19 439**
Total finance income and finance cost	**-23 955**	**-7 104**

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 (prepayments and accrued income).

EUR 1.1 million of the exchange rate gains for the financial year and, correspondingly, EUR 8.9 million of the foreign exchange losses for the financial year 2017, relate to the valuation of cash at bank. Foreign exchange gains for the 2017 financial year include gains on the valuation of a foreign currency loan at EUR 11.2 million based on the exchange rate on the closing date of the financial statements.

Other finance expenses for the financial year 2018 include interest expenses of EUR 4.2 million (2017: EUR 3.7 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

	2018	2017
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	-498	-11
Income tax expense	-498	-11
The Finnish corporate tax rate in the financial year 2018 and the reference year was 20.0%.		
Deferred tax on the balance sheet	**-2 118**	**1 100**

1.10 Earnings per share

The basic earnings per share are calculated by dividing the profit attributable to equity holders of the Company by the weighted average number of ordinary shares in issue during the year.

	2018	2017
Profit/loss for the period attributable to owners of the parent	-19 914	-12 290
Weighted average number of shares during the period	496 208	460 808
Basic earnings per share, EUR/share	-40,13	-26,67

1.11 Business acquisitions and divestitures

The Group made no business acquisitions in the financial year 2018 or 2017.

1.12 Intangible assets

	Intangible rights	Other intangible assets	Investments in progress	Total
Acquisition cost 1 Jan 2017	1 837	19	0	1 856
Increase	32	125	338	494
Decrease	0	0	0	0
Transfers between items	0	0	0	0
Acquisition cost 31 Dec 2017	**1 868**	**144**	**338**	**2 350**
Accum. depreciation and write-downs 1 Jan 2017	-251	-11	0	-262
Accumulated depreciation on decreases	0	0	0	0
Depreciation for the year	-380	-33	0	-413
Accumulated depreciation 31 Dec 2017	**-631**	**-44**	**0**	**-676**
Carrying amount 31 Dec 2017	**1 237**	**100**	**338**	**1 674**
Acquisition cost 1 Jan 2018	1 868	144	338	2 350
Increase	44	0	154	198
Activated during the period	491	0	-491	0
Decrease	0	0	0	0
Transfers between items	0	0	0	0
Acquisition cost 31 Dec 2018	**2 404**	**144**	**0**	**2 548**
Accum.depreciation and write-downs 1 Jan 2018	-631	-44	0	-676
Accumulated depreciation on decreases	0	0	0	0
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**

1.13 Property, plant and equipment

	Land	Buildings	Machinery and equipment	Other tangible assets	Advance payments and acqui-sitions in progress	Total
Acquisition cost 1 Jan 2017	145	53 479	78 096	49 724	52 155	233 598
Increase	125	14 229	42 138	46 349	84 165	187 006
Decrease	0	0	-114	0	0	-114
Transfers between items	0	0	0	0	-90 370	-90 370
Acquisition cost 31 Dec 2017	**270**	**67 708**	**120 119**	**96 073**	**45 950**	**330 120**
Accumulated depreciation and write-down 1 Jan 2017	0	-4 122	-10 256	-3 271	0	-17 650
Accumulated depreciation on decreases and transfers	0	0	68	0	0	68
Depreciation for the year	0	-3 765	-13 059	-3 905	0	-20 729
Accumulated depreciation 31 Dec 2017	**0**	**-7 888**	**-23 247**	**-7 176**	**0**	**-38 311**
Carrying amount 31 Dec 2017	**270**	**59 820**	**96 872**	**88 897**	**45 950**	**291 809**
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	
Accumulated depreciation on decreases						0
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**

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

Machinery and equipment include assets acquired through finance leases, where the Group entity is a lessee. One finance lease agreement was transferred to Terrafame Ltd during the 2017 financial period. The asset subject to the agreement in question was recognised in property, plant and equipment for the first time in the financial year 2017, with accumulated depreciation of EUR 0.2 million being taken into account in the retained earnings for previous periods.

	31 Dec 2018	31 Dec 2017
Acquisition cost	4 538	4 402
Accumulated depreciation	2 886	1 510
Carrying amount 31 Dec	**1 652**	**2 892**

	Land	Buildings	Machinery and equipment	Other tangible assets	Advance payments and acquisitions in progress	Total
Finance leases Machinery and equipment						
Carrying amount 31 Dec 2017	**0**	**0**	**2 892**	**0**	**0**	**2 892**
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**

1.14 Biological assets

In connection with the business acquisition, Terrafame Ltd 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 2018 (time 25 years, interest rate 5%).

Biological assets	**31 Dec 2018**	**31 Dec 2017**
Value of growing stock	6 604	5 124
Value of seeding stands	108	111
	6 712	5 236
Total growing stock, m³	298 008	257 108
Total seeding stands, ha	331.8	342.5

Balance at 1 Jan 2017	**5 179**
Gains and losses on fair value measurement	57
Balance at 31 Dec 2017	**5 236**
Balance at 1 Jan 2018	**5 236**
Gains and losses on fair value measurement	1 476
Balance at 31 Dec 2018	**6 712**

1.15 Investments in other shares and participations

Non-current	**31 Dec 2018**	**31 Dec 2017**
Investments in other shares and participations	13 554	0
Balance at 31 Dec 2018	13 554	0

	Other shares and participations	**Total**
Carrying amount 31 Dec 2017	0	0
Acquisition cost 1 Jan 2018	0	0
Increase	17 994	17 994
Decrease	0	0
Transfers between items	0	0
Acquisition cost 31 Dec 2018	17 994	17 994
Accumulated impairment losses 1 Jan 2018	0	0
Decrease in fair value	-4 441	-4 441
Accumulated impairment losses 31 Dec 2018	-4 441	-4 441
Increase in fair value	0	0
Carrying amount 31 Dec 2018	**13 554**	**13 554**

	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	Approx. 2.1%	Book-entry shares	2 685 952	1 074
				13 554

1.16 Other receivables

Non-current	**31 Dec 2018**	**31 Dec 2017**
Other receivables		
Accounts receivable put options	8 776	12 931
Pledged assets	0	17 000
Other receivables	0	0
	8 776	**29 931**

At the beginning of financial year 2018, a pledge account of EUR 17.0 million relating to Terrafame Ltd's environmental impact was still included in Finnish Minerals Group's financial statements under Other receivables. This pledge was released during the financial year.

	Other receivables	**Total**
Carrying amount 31 Dec 2017	0	0
Acquisition cost 1 Jan 2018	0	0
Increase	6 306	6 306
Decrease	0	0
Transfers between items	0	0
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
Increase in fair value	0	0
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 2018	31 Dec 2017
Raw materials and consumables	26 642	22 759
Work in progress	170 654	138 026
Finished goods	1 900	7 837
	199 196	**168 622**

A computational depreciation entry on the value of the raw materials and consumables inventory has been made in accordance with a calculation based on the use of spare parts. Depreciation on obsolescent items and items whose turnover rate is low or zero was EUR 4.6 million on the balance sheet date of 31 December 2018, and EUR 5.7 million on 31 December 2017.

1.18 Trade receivables and other receivables

Current	31 Dec 2018	31 Dec 2017
Trade receivables	16 995	24 660
Prepayments and accrued income	9 483	7 512
Accounts receivable put options	10 945	11 740
Derivative contract receivables	4 155	4 155
Collateral	183	1 662
Other receivables	873	1 357
	42 634	**51 086**

Aging of trade receivables and items recognised as credit loss	31 Dec 2018	31 Dec 2017
Undue	16 994	22 726
Overdue	0	0
Under 30 days	1	1 832
30–60 days	0	17
61–90 days	0	0
More than 90 days	0	85
	16 995	**24 660**
Recognised impairment losses	0	23

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 2018	31 Dec 2017
USD	28 351	36 935
EUR	14 487	14 150
	42 838	**51 086**
Other receivables consist of the following items:		
Loan receivables	0	0
Value added tax receivables	873	1 357
	873	**1 357**

1.19 Cash and cash equivalents

	31 Dec 2018	31 Dec 2017
Cash in hand and at banks	173 559	144 990
	173 559	**144 990**

1.20 Notes on shareholders' equity

The parent company's share capital entered in the trade register on 31 December 2018 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 2018 or 2017.

	2018		**2017**	
Subscribed capital	Number of shares	Subscribed capital	Number of shares	Subscribed capital
1.1.	469 100	2 258	391 600	2 258
Issued shares	66 808	0	77 500	0
Subscribed capital 31 Dec	**535 908**	**2 258**	**469 100**	**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.

	2018		**2017**	
Invested unrestricted equity fund	Number of shares	Subscription price	Number of shares	Subscription price
1.1.	469 100		391 600	0
Issued shares	46 000	46 000	77 500	77 500
Contribution in kind	20 808	20 808	0	0
Invested unrestricted equity fund	**535 908**	**66 808**	**469 100**	**77 500**

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 may be issued under the authorisation.

Options and other special rights

The subscription period for the first tranche of the Group's subsidiary's options is from 10 February 2017 to 31 December 2022; for the second tranche it is 9 November 2017 to 31 December 2023; and for the third tranche it is 22 November 2018 to 31 December 2023. The options can be transferred to the permitted transferees. Both the direct and indirect pledging of options are prohibited. An option may be exercised in one tranche. The subscription price agreed for options is 10 per cent higher than the share subscription price at the time of implementation for arrangements made between 2017 and 2018.

Options and other special rights

	31 Dec 2018	31 Dec 2017
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	0
	1 055 241	**810 977**

Options in the first tranche relate to the loan facility arranged in the 2017 financial year. In the consolidated financial statements, these options have been valued at a fair value of EUR 36.66 per share and amortised as an interest expense until their realisation date.

Share of non-controlling interests

Non-controlling interests accounted for EUR 116.3 million of the Group's equity in the financial year 2018 (2017: EUR 71.4 million). This holding of the Group consists of financing arrangements made during the financial years 2017 and 2018, and it concerns the Group's subsidiary, Terrafame Ltd, for which the non-controlling interest was approximately 23.0 per cent on the balance sheet date (2017: 22.7 per cent).

1.21 Notes to hedging derivatives

	31 Dec 2018			31 Dec 2017			2018	2017
	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	176	529	-353	118	0	118	91 000	19 000
Currency options	198	693	-495	448	0	448	128 000	7 500
Metal derivatives							Tonnes	Tonnes
Nickel forwards	5 627	224	5 404	0	993	-993	3 200	2 850
Nickel options	0	0	0	2 183	2 550	-367	0	1 200
Zinc forwards	377	404	-27	0	555	-555	700	8 000
Zinc options	6 502	1 374	5 128	8 991	13 269	-4 278	27 300	38 400
Total derivatives	12 881	3 224	9 658	11 740	17 366	-5 627		
Deduct long-term derivatives								
Zinc derivatives	574	105	469	0	0	0		
Current	12 308	3 119	9 189	11 740	17 366	-5 627		

	31 Dec 2018	31 Dec 2017
Gross assets on the balance sheet (included in prepayments and accrued income)	10 945	11 740
Gross liabilities on the balance sheet (included in accruals and deferred income)	2 967	17 366

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 on 31 December 2018 is quite significant. The most significant are the dollar and zinc hedges for the projected sales in 2019. Approximately 50 per cent of the projected net cash flow for dollar in 2019 and approximately 40 per cent of zinc deliveries were hedged. It is also very important that approximately 90 per cent of the nickel and zinc deliveries taking place in late 2018, with a pricing period after the balance sheet date, were hedged.

1.22 Deferred tax assets and tax liabilities

Deferred taxes	**31 Dec 2018**	**31 Dec 2017**
On the balance sheet		
Derivatives		
Deferred tax asset	0	1 125
Deferred tax liability	-1 596	0
Biological assets		
Deferred tax liability	-320	-25
Finance lease		
Deferred tax liability	-203	0
Balance at 31 Dec	-2 118	1 100
Unrecognised deferred tax assets		
From confirmed profit/loss		
Deferred tax asset	33 325	37 595
Deferred depreciation		
Deferred tax asset	6 471	2 525
Balance at 31 Dec	39 796	40 121

The Finnish corporate tax rate in the financial year 2018 and the reference year was 20.0 per cent.

On 31 December 2018, the Terrafame companies had unrecognised deferred tax assets of approximately EUR 40 million, which consisted of estimated unconfirmed taxable income for the financial year 2018 (EUR -4.3 million), the taxable income for the financial year 2017 (EUR -0.5 million), the confirmed loss for the financial year 2016 (EUR 21.0 million), the confirmed loss for the financial year 2015 (EUR 17.2 million) and estimated deferred depreciations (EUR 6.4 million). The losses will expire in 2025–2028. 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 payable on rental and leasing agreements	**31 Dec 2018**	**31 Dec 2017**
Within one year	408	1 153
After one year but within five years	413	368
Total	**822**	**1 521**
Fixed assets serving as collateral for installment credit	**307**	**287**
Amount of debt		
Within one year	155	130
After one year but within five years	143	201
Total	**298**	**331**
Bank deposits	**150**	**18 650**
Total	**1 270**	**20 502**

Securities complying with environmental and mining permits	**Type of security**	**31 Dec 2018** Amount of security	**31 Dec 2017** Amount of security
Beneficiary			
Kainuu Centre for Economic Development, Transport and the Environment; securities in accordance with permit condition 117	Credit insurance	112 975	22 000
	Bank guarantee	0	85 000
Kainuu Centre for Economic Development, Transport and the Environment; securities in accordance with permit condition 13	Bank guarantee	0	6 929
Northern Finland Regional State Administrative Agency, security in accordance with permit condition 99	Bank guarantee	0	1 500
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		**114 916**	**117 370**
Other securities	Bank guarantee	953	830
Real estate investments' VAT refund liability		**5 366**	**7 376**
Business mortgages		**320 000**	**160 000**
Real estate mortgage		**1 200 079**	**0**
Mining certificate, Mining Register registration number 2819, mining concession	Pledge	**Yes**	**-**

For the financial year 2018, Terrafame Ltd has a pledge account for the benefit of Customs. Bank deposits in the financial year 2017 include Finnish Minerals Group's EUR 17.0 million and Terrafame Ltd's EUR 1.5 million pledge accounts for the arrangement of collateral for environmental and mining permits. These pledges were fully released during the financial year 2018.

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 Ltd'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 USD, the company's business operations involve currency risks.

In 2018, the Group had USD-denominated sales worth approximately EUR 325.8 million (2017: EUR 220.0 million). Any changes in the value of EUR/USD would have affected the Group's net sales and profitability by about 0.7 fold. The currency hedging for the year 2018 dilutes the impact of exchange rate variations.

Interest rate risk

At the date of closing of the accounts, the consolidated balance sheet showed EUR 93.9 million (2017: EUR 90.6 million) in interest-bearing liabilities. On the same date, the repayment period of interest-bearing liabilities was 3.2 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 2018. By the end of 31 December 2017, only minor credit losses had been recorded. Credit insurance has not been applied to secure trade receivables.

The age distribution of 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-to-assets ratio on 31 December 2018 was 59.7 per cent (31 December 2017: 53.5 per cent).

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 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
31 Dec 2017	**Carrying amount**	**Cash flow**	**0-6 mths**	**6 mths-1 yr**	**1–2 yrs**	**More than 2 yrs**
Interest-bearing liabilities	90 550	90 550	1 122	128	265	89 034
Accounts payable	43 994	43 994	43 994	0	0	0

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

Market risk

The Group's sales in 2018 amounted to EUR 325.8 million (2017: EUR 220.0 million). Selling prices are affected by world-wide 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 2018 by around 0.45 fold and changes in zinc prices by around 0.2 fold. Nickel and zinc hedges made for the year 2018, 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 2018**	**31 Dec 2017**
At beginning of year	159 412	162 078
Increase	0	0
Decrease	1 049	2 666
At end of year	158 363	159 412
Total non-current	**158 363**	**159 412**

Estimated cost of the rehabilitation provision		
Rehabilitation of primary and secondary heaps and gypsum pond area	127 780	128 729
Repair of damages resulting from gypsum pond leak in 2012	20 000	20 100
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	**158 363**	**159 412**

1.26 Interest-bearing and non-interest bearing liabilities

Non-current financial liabilities measured at amortised cost	**31 Dec 2018**	**31 Dec 2017**
Loans from financial institutions – Finance loan	92 991	88 781
Other payables – hire-purchase debt	143	201
Finance lease – IAS 17	364	317
Total	**93 499**	**89 299**

Current financial liabilities measured at amortised cost		
Other payables – hire-purchase debt	155	130
Finance lease – IAS 17	199	1 120
Total	**354**	**1 251**

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	**2018**	**2017**
Advances received	419	0
Accounts payable	47 552	43 994
Accruals and deferred income	14 481	29 470
Other payables	853	1 119
	63 304	**74 583**

Non-interest bearing liabilities by currency, EUR	**2018**	**2017**
USD	5 442	20 351
GBP	2	13
SEK	14	2
EUR	57 847	54 216
	63 304	**74 583**

During the financial years 2018 and 2017, derivative assets and liabilities are 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 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	Financials instruments used for					
Hedge accounting purposes								
Investments in shares and participations		13 554		13 554	13 554	1074		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**			

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 2017	**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	Financials instruments used for					
Hedge accounting purposes								
Investments in shares and participations								
Accounts receivable put options		12 931		12 931	12 931		12 931	
Derivatives			11 740	11 740	11 740		11 740	
Trade receivables	24 660			24 660	24 660			
Cash and cash equivalents	144 990			144 990	144 990	144 990		
Yhteensä	**169 650**	**12 931**	**11 740**	**194 321**	**194 321**			
Financial liabilities								
Loans from financial institutions	88 781			88 781	88 781		88 781	
Other payables – hire-purchase debt	331			331	331		331	
Finance lease liabilities	1437			1 437	1 437		1 437	
Accounts payable	43 994			43 994	43 994			
Derivatives			17 366	17 366	17 366		17 366	
Total	**134 543**	**0**	**17 366**	**151 909**	**151 909**			

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

2018	Shares and participations
At beginning of year	17 994
Total gains and losses	
In the income statement	
In finance income and finance 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 finance cost	-4 441
As adjustments to sales revenue	-

1.28 Adjustments to cash flows from operating activities

Unrealised foreign exchange gains and losses	**2018**	**2017**
Transfer of gains from sales of tangible assets to cash flows from investing activities	0	-18
Unrealised foreign exchange gains and losses	3 147	-2 338
Finance income and finance cost	8 157	6 989
Financial income from tangible assets, do not include payment	0	0
Other income and expenses that do not include payments	-1 049	-2 666
Other adjustments	10 767	6 761
	21 021	**8 727**

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.

Correspondingly, other adjustments of the comparative period include an adjustment of EUR 4.2 million to the fair value of the options. Under the item, short-term non-interest-bearing receivables, in 'Change in net working capital', the prepayment for options amounts to EUR 4.2 million.

The finance costs include an interest-rate adjustment for options totalling EUR 4.2 million (2017: EUR 3.7 million).

Reconciliation of net liabilities

	Non-current liabilities	**Current liabilities**	**Non-current lease liabilities**	**Current lease liabilities**	**Total liabilities from financial operations**
Net liabilities 1 Jan 2017	0	1 288	0	0	1 288
Cash flows	100 000	-957	0	-2 040	97 003
Date of acquisition	0	0	317	3 161	3 477
Exchange rate variations	-11 219	0	0	0	-11 219
Changes in fair value	0	0	0	0	0
Other changes that do not include payment	201	-201	0	0	0
Net liabilities 31 Dec 2017	88 982	130	317	1 120	90 550

	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
Changes in fair value	0	0	0	0	0
Other changes that do not include payment	-309	0	0	0	-309
Net liabilities 31 Dec 2018	93 135	155	364	199	93 853

1.29 Related party transactions

Business transactions with related parties	**31 Dec 2018**	**31 Dec 2017**
Net sales from goods and services		
Other related entities	325 953	212 839
Purchases of goods and services		
Other related entities	29 250	18 015
Open balances on sales and purchases of goods and services		
Trade receivables		
Other related entities	19 596	24 775
Accounts payable		
Other related entities	3 050	1 846
Loans received		
Other related entities	75 000	0

Executives' benefits	**31.12.2018**	**31.12.2017**
Salaries and other short-term benefits	1 609	1 713
Termination benefits	0	0
Post-employment benefits	0	0
Other long-term benefits	0	0
Share-based payments	0	0
	1 609	**1 713**

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 Ltd.

Wages and salaries	**31 Dec 2018**	**31 Dec 2017**
Parent company		
CEO	182	176
Members of the Board of Directors		
Janne Känkänen	32	41
Antti Kummu	3	0
Juha Majanen	17	15
Minna Pajumaa	17	15
Eeva Ruokonen	3	0
Subsidiaries		
CEO	365	341
Members of the Board of Directors		
Lauri Ratia	79	79
Jesus Fernandez	27	0
Emmanuel Henry	29	0
Matti Hietanen	0	0
Esa Lager	43	43
Riitta Mynttinen	29	0
Tuomo Mäkelä	43	43
Total remuneration of the Board of Directors	**869**	**753**

Finnish Minerals Group purchased expert services worth a total of EUR 40 000 during the financial year 2018 and services worth EUR 50,000 during the financial year 2017 from a company owned by the related parties of Lauri Ratia, Chairman of the Board of Terrafame Ltd. The services purchased during the financial year 2018 were related to advising in the preparations for the Finnish electric vehicle battery (EVB) value chain and are not affiliated with Terrafame, while the expert services purchased in 2017 were related to advising the parent company with respect to the financial and ownership arrangements of Terrafame Ltd. 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 2018 and 2017, the members and management of the Board of Directors of Finnish Minerals Group or Terrafame Ltd and their related parties do not own the company's shares.

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 Ltd'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**	**2018 Holdings (%)**	**2018 Share of votes (%)**	**2017 Holdings (%)**	**2017 Share of votes (%)**
Finnish Minerals Group – parent company	Finland				
Terrafame Ltd	Finland	77,0%	77,0%	77,3%	77,3%

During the financial year 2018, the Group's parent company offered services to the subsidiary Terrafame Ltd for a total of EUR 222 thousand (2017: EUR 458 thousand).

1.31 Events after the balance sheet date

The financial year of Finnish Minerals Group ended on 31 December 2018. The construction of Terrafame Ltd's battery chemicals plant, which was begun during the year under review, continued after the end of the financial year. A write-down of the convertible loans and associated options issued to Ferrovan Oy has been recorded in Finnish Minerals Group's financial statements. A decision to apply for voluntary liquidation was made at the extraordinary general meeting of Ferrovan Oy held on 21 March 2019.

PARENT COMPANY INCOME STATEMENT

(EUR 1 000) **Finnish Minerals Group**	**Note**	**2018**	**2017**
Net sales	2.1	222	458
Cost of goods sold		0	0
Gross profit		222	458
		0	0
Other operating income	2.2	227	420
Sales and marketing expenses		0	0
Administrative expenses	2.4	-1 931	-3 021
Research and development expenses	2.5	-429	-1 114
Other operating expenses		0	0
Operating profit/loss		-1 911	-3 257
Finance income and cost	2.6		
Other interest and finance income		250	249
Value impairment, investments held as non-current assets		-4 441	0
Value impairment, investments held as current assets		-6 306	0
Interest and other finance cost paid		-27	-10
		-10 524	238
Profit/loss before tax		-12 435	-3 019
Profit/loss for the period		**-12 435**	**-3 019**

PARENT COMPANY BALANCE SHEET

(EUR 1 000)	**Note**	**31 Dec 2018**	**31 Dec 2017**
ASSETS			
Non-current assets			
Amounts owed by Group companies	2.7	426 801	406 801
Investments in other shares and participations	2.8	13 554	0
Total non-current assets		**440 354**	**406 801**
Current assets			
Non-current receivables			
Other receivables	2.8	0	17 000
Current receivables			
Current receivables	2.9	313	422
Cash and cash equivalents	2.10	76 863	38 597
Total current assets		**77 175**	**56 019**
TOTAL ASSETS		**517 530**	**462 819**
LIABILITIES			
Equity	2.11		
Subscribed capital		2 258	2 258
Invested unrestricted equity fund		533 651	466 843
Profit/loss from previous periods		-6 680	-3 661
Profit/loss for the period		-12 435	-3 019
Total equity		**516 793**	**462 420**
Current liabilities			
Current liabilities	2.12	737	400
Total current liabilities		**737**	**400**
TOTAL LIABILITIES		**517 530**	**462 819**

PARENT COMPANY CASH FLOW STATEMENT

(EUR 1 000)	2018	2017
Cash flows from operating activities		
Profit/loss for the period	-12 435	-3 019
Adjustments to operating profit/loss	10 524	-238
Change in net working capital	489	-79
Interest paid	-27	-10
Interest received	180	249
Net cash flow from operating activities	**-1 269**	**-3 098**
Cash flow from investing activities		
Investments in other investments	-3 466	0
Pledge for subsidiaries	17 000	-17 000
Investments in subsidiaries	-20 000	-25 001
Net cash flow from investing activities	**-6 466**	**-42 001**
Cash flow from financing activities		
Subscription issue, share capital and invested unrestricted equity	46 000	77 500
Cash flow from financing activities	**46 000**	**77 500**
Change in cash and cash equivalents	**38 266**	**32 401**
Cash and cash equivalents at beginning of year	38 597	6 196
Cash and cash equivalents at end of year	**76 863**	**38 597**

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 2017. 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

	2018	2017
Intra-group sales	222	458

2.2 Other operating income

	2018	2017
Grants and subsidies received	227	420

2.3 Personnel expenses and number of employees

Personnel expenses	**2018**	**2017**
Wages and salaries	677	525
Pension costs	106	86
Other social security expenses	8	11
	791	**621**
Average number of employees		
Salaried employees	**8**	**5**
	8	**5**

2.4 Administrative expenses

Personnel expenses	**2018**	**2017**
Wages and salaries	504	382
Pension expenses	75	60
Other social security expenses	4	7
	582	**448**
Auditors' fees		
Auditing	21	19
Certificates and statements	0	0
Tax advisory services	4	4
Other services	27	17
	52	**40**
Research and development costs	0	0
Travel expenses	62	67
Rents	35	27
Experts' fees	0	52
Other legal and consulting services	1 071	2 294
Other administrative expenses	130	92
Total administrative expenses	**1 932**	**3 021**
Management salaries and fees		
CEO and Board members	253	247

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

	2018	2017
Total research and development costs recognised as an expense	429	1 114

2.6 Finance income and finance cost

	2018	2017
Other interest and finance income		
From Group companies	80	173
From other companies	170	75
Value impairment, investments held as non-current assets	-4 441	0
Value impairment, investments held as current assets	-6 306	0
Interest and other finance cost paid		
To other companies	-27	-10
	-10 524	**238**

2.7 Investments in subsidiaries

Shares in Group companies	
Carrying amount 31 Dec 2017	406 801
Acquisition cost 1 Jan 2018	406 801
Increase	20 000
Acquisition cost 31 Dec 2018	426 801
Carrying amount 31 Dec 2018	426 801

Group companies		**31 Dec 2018**	**31 Dec 2017**
Terrafame Ltd, Sotkamo, Finland	**Parent company holdings**	77,0%	77,3%

2.8 Investments in other shares and participations

	Holdings in associated companies	**Receiv-ables from associated companies**	**Other shares and participa-tions**	**Other receivables**	**Total**
Carrying amount 31 Dec 2017	0	0	0	17 000	17 000
Acquisition cost 1 Jan 2018	0	0	0	17 000	17 000
Increase	0	0	17 994	6 306	24 300
Decrease	0	0	0	17 000	17 000
Transfers between items	0	0	0	0	0
Acquisition cost 31 Dec 2018	0	0	17 994	6 306	24 300
Accumulated impairment losses 1 Jan 2018	0	0	0	0	0
Impairment losses	0	0	-4 441	-6 306	-10 747
Accumulated impairment losses 31 Dec 2018	0	0	0	0	-10 747
Gain on revaluation	0	0	0	0	0
Carrying amount 31 Dec 2018	0	0	13 554	0	13 554

At the beginning of financial year 2018, a pledge account relating to Terrafame Ltd's environmental impact was still included in Finnish Minerals Group's financial statements under Other receivables. This pledge was released during the financial year.

	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	around 2,1%	Book-entry shares	2 685 952	1 074
				13 554

"Other holdings" do not include ownership of joint ventures or associated companies, since the company's voting power in them is less than 20% and the company has no considerable influence over the management of the holdings' business and finance.

2.9 Current receivables

	31 Dec 2018	31 Dec 2017
Receivables from Group companies	112	128
Rent guarantees	12	12
VAT receivable	33	58
Tax account receivable	29	17
Prepayments and accrued income	126	206
Total receivables	**313**	**422**

During the financial year 2019, the company's rent guarantee will be increased by 23.2 thousand euros, to 35.2 thousand euros.

2.10 Cash and cash equivalents

	31 Dec 2018	31 Dec 2017
Cash and cash in bank	76 863	38 597

2.11 Equity

	31 Dec 2018	31 Dec 2017
Subscribed capital 1 Jan	2 258	2 258
Issued shares	0	0
Subscribed capital 31 Dec	2 258	2 258
Total restricted equity	2 258	2 258
Reserve for invested unrestricted equity 1 Jan	466 843	389 343
Issued shares	66 808	77 500
Reserve for invested unrestricted equity 31 Dec	533 651	466 843
Profit/loss from previous periods	-6 680	-3 661
Profit/loss for the period	-12 435	-3 019
Total unrestricted equity	514 535	460 162
Total equity	516 793	462 420
Calculation of distributable funds		
Reserve for invested unrestricted equity	533 651	466 843
Profit/loss for the previous period	-6 680	-3 661
Profit/loss for the period	-12 435	-3 019
	514 535	**460 162**

2.12 Current debt

	31 Dec 2018	31 Dec 2017
Amounts owed to Group companies:		
Accounts payable	0	32
Advances received	419	0
Accounts payable	190	205
Other liabilities – withholding tax debt and social security contribution liabilities	29	16
Accrued expenses and deferred income – wages and salaries with social security expenses	99	147
	737	**400**

2.13 Other notes

Contingent liabilities and other liabilities	31 Dec 2018	31 Dec 2017
Amounts due on rental and leasing agreements		
Within one year	91	13
After one year but within five years	12	0
Total	103	13
Bank deposits	0	17 000
Total	**103**	**17 013**

In the financial year 2017, the company had pledged debt in the amount of EUR 17.0 million allocated to the arrangement of guarantees in accordance with the environmental permits of Terrafame Ltd. This pledge was released in full during the period under review.

The company has approximately EUR 1.6 million in unrecognised deferred tax assets arising from the confirmed loss for 2015 (EUR 0.2 million), the confirmed loss for 2016 (EUR 0.5 million), and the losses to be confirmed in the tax assessment for the financial year 2017 (EUR 0.6 million) and financial year 2018 (EUR 0.3 million).

KEY FIGURES

	2018	2017
Net sales	EUR 0,2 million	EUR 0,5 million
EBITDA	EUR -1,9 million	EUR -3,3 million
Operating profit/loss	EUR -1,9 million	EUR -3,3 million
Operating profit, %	-860,5%	-711,7%
Equity-to-assets ratio	99,9%	99,9%
Total assets	EUR 517,5 million	EUR 462,8 million
Wages and salaries	EUR 0,5 million	EUR 0,4 million
Average number of employees	8 persons	5 persons
Depreciation and amortisation	0	0

$$\text{Equity-to-assets ratio,\%} = \frac{100 \times \text{Equity}}{\text{Total assets – advances received}}$$

Signatures to the financial statements

In Sotkamo, 26 March 2019

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

Auditor's confirmation

A report on the audit has been issued today.

In Sotkamo, 27 March 2019

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	E-format
E-invoices (purchase)	E-format
Travel and other bills of cost,	
Memo voucher	E-format
Payroll accounting documentation	E-format
Bank account transactions	E-format
VAT-calculations	E-format
Tax return forms	E-format

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