

# Financial Review 2019

Including Board of Directors' Review  
and Financial Statements

March 4, 2020

**Terrafame**



YEAR 2019 IN BRIEF

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Terrafame Ltd is a Finnish multi-metal company founded in 2015, with a mine and metals production plant located in Sotkamo. The company's products in 2019 were nickel-cobalt as well as zinc and copper sulphides, which are used e.g. as raw materials for EV batteries, corrosion protection and copper cables.

The company's bioleaching based production process is unique and its carbon footprint is clearly lower compared to traditional nickel production technologies. Terrafame is currently building one of the world's largest production lines for battery chemicals, which will move the company forward in the value chain, from a manufacturer of metal intermediates to a producer of battery-grade chemicals for electric vehicle batteries. In 2019, Terrafame's net sales totalled EUR 310 million and there were approximately 1,500 people working at the company's industrial site, of which partner company employees accounted for approximately half.

|  |   |   |
|--|---|---|
| <b>Net sales</b><br><b>310.4 M€</b>                                    | <b>EBITDA</b><br><b>32.0 M€</b>               | <b>EBITDA-%</b><br><b>10.3 %</b>                    |
| <b>Operating result</b><br><b>-5.6 M€</b>                              | <b>Equity ratio, %</b><br><b>46.7 %</b>       | <b>Own personnel,<br/>at year end</b><br><b>754</b> |
| <b>All personnel at the site,<br/>on average apprx.</b><br><b>1500</b> | <b>LTIFR,<br/>own personnel</b><br><b>9.6</b> | <b>LTIFR,<br/>all at the site</b><br><b>14.2</b>    |

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Nickel, tn

**27.468**

Zinc, tn

**55.222**

Total mining  
volume, Mt

**32.3**

Nickel production increased while zinc production decreased. The production volume ratio of zinc to nickel is influenced by ore mineralogy and their dissolution ratio in bioleaching. At the start-up of production, significantly more zinc was produced in relation to the normal production ratio.

The total production volumes were somewhat below the annual target levels, which were set at 30,000 tonnes of nickel and 60,000 tonnes of zinc. This was particularly due to the production losses caused by the repair measures in the bioleaching area and stoppages during the fourth quarter.

Net sales decreased by 4.7 percent from 2018.

Despite this, EBITDA reached the year 2018 level and the EBITDA-% was slightly higher than in 2018.

Occupational safety has been the source of increased attention on the industrial site, and active efforts on safety measures will continue.

The construction works for the battery chemicals plant progressed as planned in 2019, and the process equipment installations and recruitments for the production organisation were launched as well.

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The annual nickel production increased to 27,468 (27,377) tonnes. Zinc production decreased by 10.4 per cent to 55,222 (61,608) tonnes. The production volume ratio of zinc to nickel is influenced by ore mineralogy and their dissolution ratio in bioleaching. At the start-up of production, significantly more zinc was produced in relation to the normal production ratio. The total production volumes were slightly below the annual target levels, which were set at 30,000 tonnes of nickel and 60,000 tonnes of zinc. This was particularly due to the loss of production resulting from repair measures in the bioleaching area as well as the scheduled stoppage of the metals recovery plant and the unscheduled stoppage of the hydrogen sulphide plant in the fourth quarter.

Terrafame's net sales decreased by 4.7 per cent in 2019, to EUR 310.4 (325.8) million. However, we are pleased that, despite the decline in net sales, the EBITDA for the year reached the 2018 level and amounted to EUR 32.0 (32.8) million.

Strong nickel price fluctuations continued throughout the year. The uncertainty of the global economy kept the price development of nickel down during the first half of the year. In the third quarter, the price of nickel increased sharply, and that was when we achieved the largest quarterly net sales in the company's history and had an excellent EBITDA as well. Towards the end of the year, the market price of nickel started declining again.

In 2019, we continued our determined efforts to further stabilise the production process and to achieve the production volume target levels on a more permanent basis. Our strategic spearhead project – the construction of the battery chemicals plant – also progressed well. Once completed, our new plant will be one of the world's largest production units for nickel sulphate used in electric vehicle batteries. We will also start producing cobalt sulphate used in electric vehicle batteries. The battery chemicals plant will move us forward in the value chain and into the rapidly growing battery chemicals market as a manufacturer of specialty chemicals. The plant's process equipment installations and establishment of a production organisation are progressing and the commercial production of battery chemicals will be started during the first half of 2021.

In early February the Finnish government decided to grant a uranium extraction permit to Terrafame. This was a positive decision for our business, but we estimate that it will take approximately 2 years until the permit has legal force. After that, the process of getting the uranium extraction plant ready for use including recruitment and training of the personnel will take approximately one year. We estimate that when operating, the uranium plant will employ approximately 30 persons.

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Terrafame's operating culture is based on the values defined at the beginning of the company's operations: safety – commitment – efficiency. Safety is at the core of our operations. In 2019, we placed more emphasis on safe working methods, and we will continue to invest in active safety measures. The company's ramp-up has put strong demands on our organisation as a whole, and the personnel have shown that they are committed to achieving the goals. The transition to the manufacture of battery chemicals confirms our commitment as a company to combat climate change. The new demanding market challenges us all to do our best so that Terrafame will succeed. Our key strategic business goal is to be in the most cost-effective quartile of the world's nickel producers. To achieve this goal, we will continue our dedicated and systematic efforts to improve our operational excellence.

In connection with the strategy round in autumn, we summarised Terrafame's purpose statement as follows: *Enhancing low-carbon mobility with responsible battery chemicals*. Together with all our employees, we want to turn Terrafame into a strong industrial brand that displays our company's deep roots in Kainuu as well as its operational strengths: the significant nickel resources of the Sotkamo mine, our unique integrated production process from the open pit to battery chemicals, the low carbon footprint of our production, and our responsible and traceable European supply chain as well as our skilled staff.

I would like to thank all of our stakeholders for the past year, and I wish you all the best for the year 2020 and the beginning of a new decade!



**Joni Lukkaroinen**

CEO

**Terrafame Ltd**

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Terrafame entered its fifth year of operations in the autumn of 2019. The start of the ramp-up in 2015 was challenging. Terrafame's nickel production is a unique integrated process, which can only be fully managed with multi-disciplinary skills and know-how. On the one hand, production is widely composed of heavy-duty industrial activities, but on the other, the process requires precise controls where even the smallest details count.

Finding the right balance for the different parts of the processes has required a lot of time and patience. Especially during the company's early days, people from outside doubted whether the company would succeed in the first place. But already in 2017, I had the pleasure to conclude in my annual greeting to our stakeholders that I was 'very happy that 2016 was a year where we proved that our processes and our organisation function well and the management and all employees were committed to complete Terrafame's ramp-up successfully.' We continue to improve the performance of our processes.

Now, at the beginning of 2020 and a new decade, we can turn our focus to future considerations: the bioleaching process is functioning as expected, our systematic work has brought environmental issues under control, and we are preparing to take a leap forward in the metals refining value chain to become a manufacturer of battery chemicals.

Concerns about climate change, in particular, the levels of CO<sub>2</sub> emissions caused by the traffic are increasing the demand for electric vehicles. The transition to electric vehicles is also accelerating due to new regulations. The European Commission has imposed obligations on car manufacturers to markedly reduce the CO<sub>2</sub> emissions generated by vehicles. In Finland, the government has set a goal to achieve a ten-fold increase in the number of electric cars by 2030.

Approximately 2.2 million electric vehicles were sold worldwide in 2019, and the number of electric vehicles sold is expected to grow to over 20 million by 2030. With the battery technology that is mainly used currently, the nickel sulphate capacity of Terrafame's battery chemicals plant scheduled to start up in 2021, is sufficient for about one million electric vehicles per year. Its cobalt sulphate capacity will be sufficient for about 300,000 electric vehicles per year. We are very pleased with the progress of the battery chemicals plant project. We are convinced that the completion of the plant will have a marked positive effect on the company's valuation.

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In 2019, the high volatility of nickel prices and the unexpected liner problem in the primary heap leach area limited our production and had an effect on net sales. However, EBITDA-% grew slightly from 2018, which was positive. Despite optimistic outlook for the future, we must concentrate on key issues: the efficiency of production and work safety, which go hand in hand.

Cost-efficiency has been in the core of Terrafame's strategy from the very beginning. We are moving up in the value chain, but metals' world market prices continue to have a significant impact on the company's financial performance. Our goal is clear: 'to be in the lowest cost quartile of the world's nickel producers.'

On 6 February 2020, the Finnish Government decided to grant a uranium extraction permit to Terrafame. The permit application for uranium extraction was submitted pursuant to the Nuclear Energy Act (990/1987) on 30 October 2017. Terrafame already has the necessary chemicals and environmental permits. The commissioning and start-up of the uranium extraction plant will take about a year, starting when the permit issued by the government becomes final and legally binding. The use of the uranium extraction plant will also open up new development opportunities, especially for the recovery of rare earth elements (REE) during the coming years.

Terrafame's operations have evolved well over the past four years, and the confidence of the general public in our company has grown. I would like to thank the company's management, all our employees and partner companies as well as our key stakeholders. The challenging ramp-up and investing in the battery chemicals plant has been in the Board of Directors' agenda for quite a while. I would like to thank my colleagues on the Board of Directors. Safety is at the heart of Terrafame's values and remains a priority also during the year that just started.

Thank you for the past year and all the best for the new decade!



**Lauri Ratia**

Chairman of the Board

**Terrafame Ltd**

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#### Electric vehicle and battery markets

Global EV sales were approximately 2,2 million units in 2019. Although EV sales fell in China towards end of the year, mainly reflecting changes in subsidies, China still represented more than a half of the global EV sales. Whereas EV sales were sluggish in China towards the end of the year, the whole year sales were up 35 per cent in Europe year-on-year.

Average pack sizes across all EV classes rose to a sales weighted average of 57 kWh from 53 kWh at the beginning of the year. The global battery demand in 2019 was up 17 per cent compared with 2018 at approximately 118 GWh. Together with increasing average pack sizes also the amount of nickel in the batteries has been increasing. E.g. the market share of NCA batteries increased from 22 per cent at the end of 2018 to 27 percent at the end of 2019 and the market share of NCM 811 batteries, that were launched at the market during 2019, was 5 per cent of all battery categories at the end of 2019.

#### Nickel and zinc

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

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

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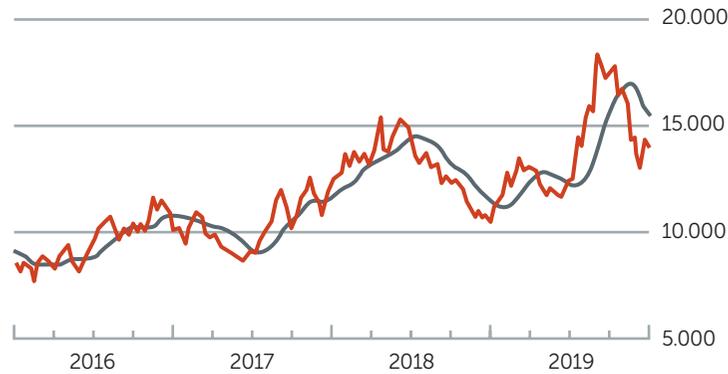
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## Nickel price development (USD/t)

1 Jan 2016 – 31 Dec 2019



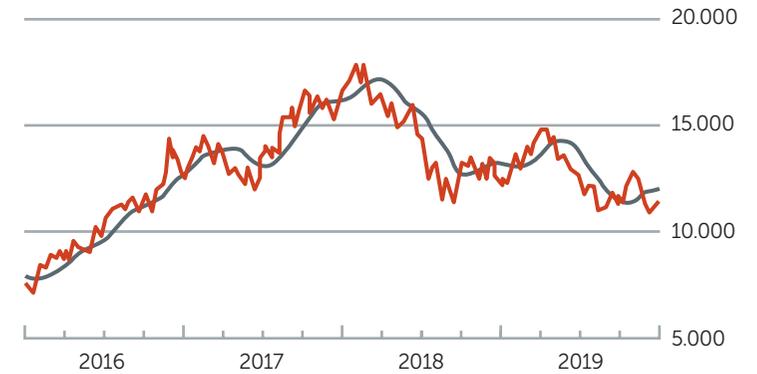
The total combined nickel stocks of the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) stood at 188,097 (221,659) tonnes at the end of 2019, corresponding to demand of approximately 4 (5) weeks. The stock levels grew during the fourth quarter of 2019 for the first time since the first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

## Exchange rate

The US dollar continued to strengthen against the euro towards the end of 2019. The average EUR/USD exchange rate for October–December 1.1 whereas in July–September 2019, it was 1.11. The average EUR/USD exchange rate for the year 2019 was 1.12 whereas in 2018, it was 1.18.

## Zinc price development (USD/t)

1 Jan 2016 – 31 Dec 2019



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In March 2019, damage was detected in the liner structure of block 2 of the primary leaching area. Repair measures to construct a new liner structure over the existing structure were immediately initiated. In the primary leaching area, the stacking of ore was at a standstill between 18 March and 20 April. After that, the repairs to the base structure have progressed as planned in the production area at the same pace with heap reclaiming and stacking of new ore.

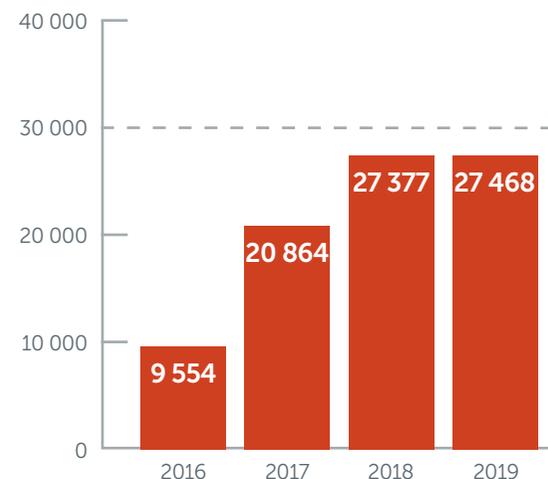
In 2019, the total mining volume of Terrafame's open pit was 32.3 (42.2) million tonnes. Ore mining was halted between 18 March and 20 April 2019 due to the repairs to the primary leaching area's water-tight structures, making the total mining volume lower as compared to 2018.

## Net sales and financial performance

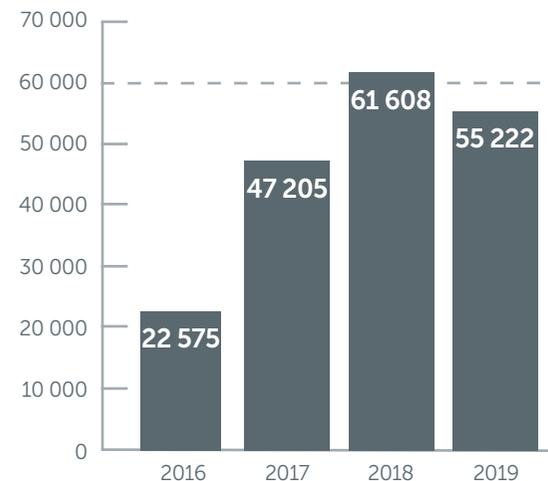
Net sales for 2019 decreased by 4.7 per cent to EUR 310.4 (325.8) million. The net sales were lower than in 2018 due to the loss of production resulting from the repair measures in the bioleaching area as well as the scheduled and unscheduled production stoppages at the metals recovery plant.

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

## Nickel production, tonnes



## Zinc production, tonnes



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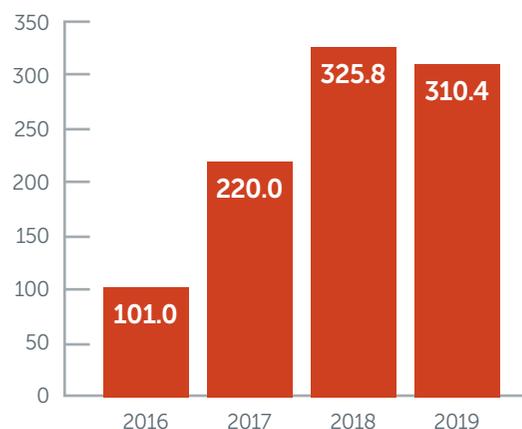
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The EBITDA for the year was at the 2018 level, i.e. EUR 32.0 (32.8) million.

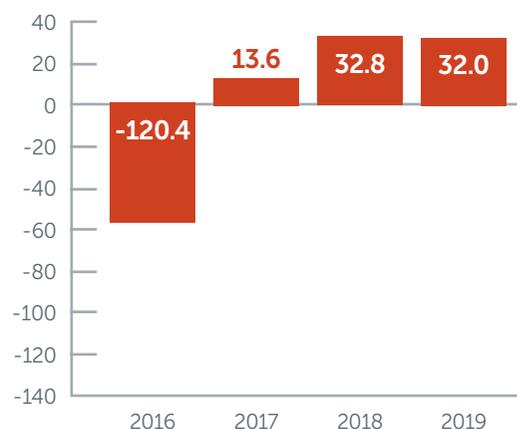
In 2019, the company's depreciation totalled EUR 37.6 (29.8) million and operating result amounted to EUR -5.6 (3.0) million. During the year preparations for the start-up of the battery chemicals plant were started. These as well as costs from the apprenticeship training programme lowered the operating result.

The company's net financial items amounted to EUR -9.6 (-9.2) million, and result for the period was EUR -15.2 (-6.2) million.

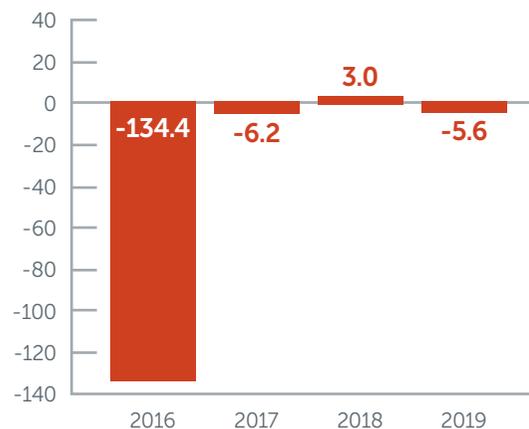
### Net sales, EUR million



### EBITDA, EUR million



### Operating profit/loss, EUR million



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## Cash flow and financial position

In 2019, cash flow from operating activities was EUR 10.6 (5.1) million, of which change in networking capital comprised EUR -15.7 (-20.6) million. Cash flow from investment activities was EUR -105.8 (-81.1) million. Cash flow from investments was increased by significant construction efforts in the battery chemicals plant project.

At the end of 2019, the company's cash and cash equivalents totalled EUR 61.9 (96.7) million.

Terrafame's balance sheet total on 31 December 2019 was EUR 749.5 (681.6) million. Year-end inventories totalled EUR 218.2 (199.2) million. The company classifies its inventories into three groups: raw materials and consumables, work in progress, and finished products. The value of raw material and spare part inventories at the end of the financial period was EUR 25.0 (26.6) million. The value of work in progress was EUR 186.2 (170.7) million, and the value of the finished goods inventory was EUR 6.9 (1.9) million. The valuation principles for inventory items are presented in more detail in the Accounting principles, in section Inventories on page 46.

Trade receivables totalled approximately EUR 15.2 (17.0) million at the end of the financial period. Other receivables totalled approximately EUR 0.1 (1.0) million. Prepaid expenses and accrued income totalled approximately EUR 13.8 (20.3) million, the most significant of which were derivative receivables amounting to approximately EUR 6.4 (10.9) million due to hedging operations.

Shareholders' equity on 31 December 2019 was EUR 349.8 (365.6) million. The total amount of debt was EUR 242.4 (157.6) million. In addition to this the balance sheet includes a rehabilitation provision for mine closure and environmental clean-up costs amounting to EUR 157.4 (158.4) million. More detailed information on the rehabilitation provision is provided in Accounting principles, in section Rehabilitation provision for mine closure and environmental clean-up costs on page 49.

Terrafame's equity ratio at the end of the financial period was 46.7 (53.6) percent, and net gearing was 31.7 (-0.9) percent.

The formulas for calculating the figures and the key figures are presented on page 34.

## Equity and liability, EUR million



## Capital expenditure

Capital expenditure is reviewed at Terrafame in two groups: investments in improving productivity and capacity, and investments in sustaining production.

| Capital expenditure, MEUR                          | 1-12/2019    | 1-12/2018   | Change, %   |
|--|--------------|-------------|-------------|
| Investments in sustaining production               | 42.1         | 28.1        | 49.8        |
| Investments in improving productivity and capacity | 88.5         | 53.4        | 65.7        |
| <b>Total capital expenditure</b>                   | <b>130.6</b> | <b>81.5</b> | <b>60.2</b> |

Capital expenditure during 2019 totalled EUR 130.6 (81.5) million. Of this amount, EUR 88.5 (53.4) million were used to improve productivity and increase capacity, while sustaining capital expenditure amounted to EUR 42.1 (28.1) million.

The key investment targets for improving productivity and increasing capacity were related to the construction of the battery chemicals plant, scheduled to commence in 2021, and its main equipment procurement.

The construction works for the battery chemicals plant progressed as planned in 2019, and process equipment installations were launched in the fourth quarter.

The most significant capital expenditures in sustaining production concerned the purchases of spare parts for mining equipment and the ore crushing line, the modification of the hydrogen sulphide plant, and the repair measures in the bioleaching area.

## Currency and commodity hedge transactions

During the financial period 2019, cash flow hedging against the weakening of the dollar and decline in metal prices continued in line with the company's hedging policy. The company used hedge accounting. Additional information on hedging is given in note 2.8 to the financial statements on page 59.

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Terrafame has one series of shares. At the end of 2019, the company had 3,705,164 shares, EUR 2.0 million in share capital, and EUR 349.8 million in shareholders' equity.

On 31 December 2019, Suomen Malmijalostus Oy ('Finnish Minerals Group', 'FMG') held 71.8 per cent, Galena funds 27.6 per cent and Sampo 0.6 per cent of Terrafame shares. Actions that impacted the holdings are as follows:

|   | Galena 2 | Galena 3 | Sampo  | FMG       | Trafigura | Total     |
|---|----------|----------|--------|-----------|-----------|-----------|
| <b>Shareholding 31 Dec 2018</b>         | 14.4 %   | 8.2 %    | 0.3 %  | 77.0 %    | 0.2 %     | 100.0 %   |
| 31 Dec 2018                             | 474,549  | 268,691  | 8,539  | 2,535,921 | 6,081     | 3,293,781 |
| <b>Changes in shares in the period</b>  |          |          |        |           |           |           |
| Equity registrations                    |          | 268,691  |        | 124,626   |           | 393,317   |
| Share transfer                          | 6,081    |          |        |           | -6,081    | 0         |
| Interest and arrangement fees in shares |          | 5,257    | 12,809 |           |           | 18,066    |
| 31 Dec 2019                             | 480,630  | 542,639  | 21,348 | 2,660,547 | 0         | 3,705,164 |
| <b>Shareholding 31 Dec 2019</b>         | 13.0 %   | 14.6 %   | 0.6 %  | 71.8 %    | 0.0%      | 100.0 %   |

After the equity investments in the battery chemicals plant, Finnish Minerals Group's holding will fall to approximately 69.2 per cent and Galena's holding will rise to approximately 30.6 per cent. In the future, Finnish Minerals Group's holding may fall to 50.1 per cent 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 45.0 per cent of Terrafame shares and Sampo approximately 5.0 per cent.

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## Financing arrangements

Finnish Minerals Group has financed Terrafame throughout its operating history with approximately EUR 456.8 million in total, of which EUR 30 million was not used at 31 December 2019. In addition, Terrafame has received in equity financing worth approximately 191.2 million in euros from the Galena Fund, part of Trafigura Group, of which EUR 30 million was not used at 31 December. During the financial period, no equity financing was received. Terrafame has also received in debt financing worth approximately 182.3 million in euros from Trafigura and worth approximately 46.0 million in euros from Sampo. At the end of the financial period debt financing of USD 72.5 million from Trafigura and USD 7.5 million from Sampo were unused. The contribution of private financiers therefore is approximately EUR 419.5 million in total. Items based on other currencies have been converted into euros at the rate of the end of 2019. The amounts presented in the table include all financial items, in other words, also any unused investment commitments.

|                         | Equity financing | Debt financing | Total financing |
|-------------------------|------------------|----------------|-----------------|
| Finnish Minerals Group  | 456.8            |                | 456.8           |
| Galena Asset Management | 191.2            |                | 191.2           |
| Trafigura               |                  | 182.3          | 182.3           |
| Sampo Group             |                  | 46.0           | 46.0            |
| <b>Total</b>            | <b>648.0</b>     | <b>228.3</b>   | <b>876.3</b>    |

## Related party transactions

During the financial period 2019, the company had a EUR 32.5 (58.5) million counter-guarantee granted by the State for arranging collateral in accordance with environmental permits. Legal and other administrative services were bought for a total of EUR 0.4 million and administrative services for R&D projects for a total of EUR 0.2 million from Finnish Minerals Group.

The sales of nickel cobalt sulphide and zinc sulphide to Trafigura Ventures V B.V. company amounted to EUR 322.9 (305.5) million during the financial period.

The financing arrangements realised with the related-party companies Finnish Minerals Group, Trafigura Ventures V B.V. and Galena funds are presented in the 'Financing arrangements' section of the annual review.

All business transactions between Terrafame and its related parties conformed to accepted market practices.

A more detailed description of related party transactions is given in note 5 to the financial statements.

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## Governance

As a non-listed company, Terrafame observes, as applicable, the Securities Market Association's Corporate Governance Code in force. The Corporate Governance Statement 2019 is published as a separate report but simultaneously with the Board of Directors' report and is available at [www.terrafame.fi](http://www.terrafame.fi).

## Annual General Meeting

The Annual General Meeting of 2019 was held on 21 March. The AGM confirmed the financial statements for 2018, decided on the disposal of the result in accordance with the Board's proposal, and discharged the Board members and CEO from liability.

The composition of seven Board members was confirmed at the AGM. The members of the Board are Lauri Ratia, Esa Lager, Tuomo Mäkelä, Matti Hietanen, Jesus Fernandez, Emmanuel Henry and Riitta Mynttinen. Lauri Ratia was elected Chair of the Board and Matti Hietanen as Vice Chair of the Board.

Elected as the company's auditor is the authorised auditing firm KPMG Oy Ab, with Antti Kääriäinen, APA, as principal auditor.

## Management Team

The members of Terrafame's Management Team at the end of 2019 were:

|                         |   |
|-------------------------|---|
| <b>Joni Lukkaroinen</b> | Chief Executive Officer                             |
| <b>Antti Arpalahti</b>  | Chief Production Officer                            |
| <b>Kristian Granit</b>  | Chief Refining Officer, as of 1 October 2019        |
| <b>Veli-Matti Hilla</b> | Chief Sustainability Officer                        |
| <b>Janne Palosaari</b>  | Chief Commercial Officer                            |
| <b>Petri Parjanen</b>   | Chief HR Officer                                    |
| <b>Sanna Päiväniemi</b> | Chief Communications Officer, as of 1 February 2019 |
| <b>Matti Rautiainen</b> | Chief Maintenance Officer                           |
| <b>Ville Sirviö</b>     | Chief Financial Officer                             |
| <b>Reijo Uusitalo</b>   | Chief Mining Officer                                |

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## Statement of non-financial information

This statement has been drawn up in accordance with Chapter 3a of the Finnish Accounting Act 1336/1997, which is based on Directive 2014/95/EU of the European Parliament and of the Council. The disclosure of non-financial information is optional for Terrafame.

In addition to the topics required by the Finnish Accounting Act, the statement on non-financial information includes a description of safety management at Terrafame and the company's tax contribution in accordance with the guidance issued by the Government Ownership Steering Department on 1 October 2014.

### Responsibility management

The Board of Directors of Terrafame Ltd is responsible for the organisation and integration of corporate responsibility management to Terrafame's business and adopting Terrafame's operating principles.

Terrafame's values – safety, commitment and efficiency – are reflected in all operations. Terrafame is committed to delivering safely and sustainably produced, high-quality products to its customers. This promise is an integral part of the company's objectives.

Terrafame operates fully in accordance with the laws and regulations issued by the authorities. In addition, all Terrafame employees and all partners operating in the industrial site must act in compliance with the principles of the sustainability policy adopted by the company's Board of Directors. The policy implementation is supported by Terrafame's certified management systems (ISO 9001, ISO 45001 and ISO 14001) as well as more detailed operating guidelines.

Operations within the industrial site must be safe for both the company's own employees and those of its partners in all circumstances and situations. Safety matters must be taken into account in the work tasks carried out on Terrafame's industrial and mining sites in particular in jobs involving the handling of demanding processes, chemicals, metal ore, and large machines and equipment. Occupational safety risks relate especially to maintenance and to construction works.

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With respect to the environment, Terrafame is committed to operating sustainably and in accordance with the environmental permits in force. The company is also committed to continuously improving its environmental performance, managing all operational risks, and reducing its environmental impact. The objective is to use natural resources efficiently and strive to minimise the environmental impact of its operations. The best possible and most energy-efficient technological solutions are chosen in order to minimise emissions.

Terrafame's operations shall be responsible and transparent. We communicate with our employees, partners, neighbours and stakeholders openly and honestly about our operations and their impacts.

Terrafame's objective is to ensure that the manufactured products are clean and usable. The methods used in the production chain are demonstrably more environmentally friendly compared to many conventional methods, because they consume less energy and generate less carbon dioxide and nutrient emissions. Production methods are continuously being made more efficient. The objective is to improve financial performance, lower the carbon footprint, reduce energy consumption and mitigate environmental impact.

Terrafame participates in the activities of the Finnish Network for Sustainable Mining through the Finnish Mining Association (FinnMin), and is committed to conducting its operations in accordance with the Finnish Towards Sustainable Mining (TSM) Standard.

From the viewpoint of responsibility, it is essential to minimise the environmental impact of Terrafame's operations so as to not cause any significant adverse effects on the nearby residents or the surrounding nature. At the beginning of the process, i.e. mining operations, it is essential to minimise the effects of noise, dust and vibration, while during bioleaching, leach cycle management is essential. In the recovery of metals, using chemicals safely and managing the chemical processes is essential. As regards emission control, it is essential to steer the process so that emissions to water and air will be as low as possible.

In the spring of 2020, the company will publish a separate responsibility report in which more detailed information will be provided on the environmental impact of the company's operations, for example. The report will also include Terrafame's sustainability goals for the coming years.

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## Responsibility-related risk management

Terrafame complies with the risk management policy adopted by the Board of Directors.

The key safety, process, environmental and operational business risks are updated annually, and the results and tasks are discussed by the company's Management Team and Board of Directors. Every three years, the company's environmental, safety and process risk assessment is comprehensively updated, covering thousands of individual risk items. A comprehensive updating of the risk assessment was initiated during 2019. The key risks identified in the risk assessment are reduced, for example, by making technical improvements, through investments, or developing the competence of employees.

## Description of the business model

The starting points of Terrafame's business operations are cost-efficiency and accountability. The company's products in 2019 were nickel-cobalt sulphides as well as zinc and copper sulphides, and its ore reserves enable production for dozens of years. Terrafame's integrated production process includes mining operations at the open pit, ore handling, bioleaching and metals recovery, which are all done at the same industrial site in Sotkamo. Integrated operations also enable the efficient use of the by-product streams generated in production processes. Terrafame's bioleaching-based production process is unique, and its carbon footprint is significantly lower than in conventional nickel production technologies. The ability to make use of an extensive network of partners plays a key role in the company's operating model.

Terrafame is currently building a battery chemicals plant which, after its commissioning and start-up in 2021, will further process the company's current main product – nickel-cobalt sulphide – into battery-grade chemicals for use in manufacturing electric vehicle batteries.

For its customers, Terrafame offers a transparent and traceable European supply chain. Through its own responsible production, the company contributes to reducing the life cycle impact of its customers' products.

The market areas for Terrafame's business are mainly in Asia and Europe.

Enhancing low-carbon mobility  
with responsible battery chemicals

End-use areas for our products include  
batteries for EVs, electric components  
and corrosion protection.



### IMPACT

Economic value-added - Committed personnel - Safe working environment - Solid customer experience



TRACEABLE SUPPLY CHAIN, LOW CARBON FOOTPRINT

INTEGRATED AND ENERGY EFFICIENT PRODUCTION

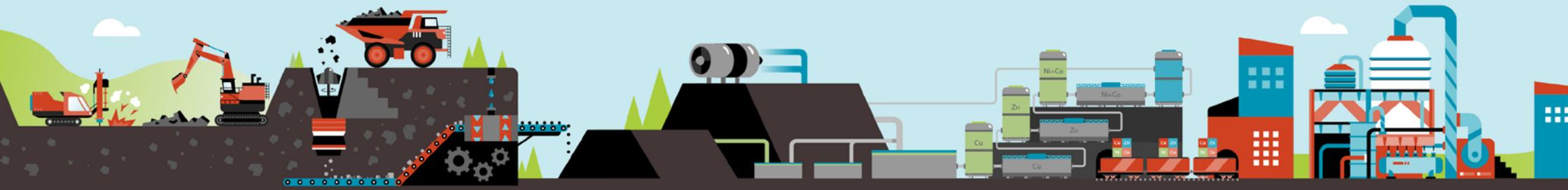
Open pit

Materials handling

Bioleaching

Metals recovery

Battery chemicals plant 2021



RESOURCES Largest nickel ore reserves in Europe – Skilled personnel – Wide partner company network

VALUES Safety – Commitment – Efficiency

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## Supply chain

Terrafame's integrated production chain is a unique: the entire production process from ore excavation to metals recovery – and in the future, also the manufacturing of battery chemicals – are done on the same industrial site. External partner companies have a key role to play in production. Production also involves significant material purchases, such as process chemicals and fuels. The company is increasingly shifting its operations to a partnership-based model.

Terrafame requires all its partners to commit to high-quality operations, safety and continuous improvement of effectiveness. Partners who stand out with their responsible operations are invited to participate in tendering repeatedly. Partner companies are evaluated based on basic information and long-term partnerships are developed. Best partners will be growing and developing together with Terrafame.

In 2019, on average around 70 partner companies with approximately 735 employees in total operated regularly in Terrafame's industrial site. In addition, services and materials were acquired from about 1,000 suppliers, the majority of which are based in Finland and other European Union Member States. Terrafame's total purchases in 2019 amounted to approximately EUR 391 million. Most of the purchases were for materials related to the production process, services and purchases relating to the construction project of the battery chemicals plant.

The main risks relate to any measures or omissions arising in the selection of partners and in the supply chain that are in violation of the company policies and, in addition to the risk of sanctions and reputation risk, may result in financial losses. The most significant role of risks is attributable to the company's purchasing organisations and management. Where possible, Terrafame seeks to identify any ethical risks attributable to its business partners before establishing a partnership with them.

Terrafame requires all its partners and subcontractors to comply with the company's sustainability policy and principles. In addition, suppliers undertake to ensure that their employees comply with Terrafame's internal instructions and rules regarding health, safety, and access to the site. Suppliers and everyone acting on their behalf are also required to comply with the legislation in force regarding health and safety. Suppliers and their subcontractors undertake to comply with all the applicable national and international provisions on ethical and responsible business, such as the prevention of corruption and corrupt practices.

Terrafame evaluates the partner companies' activities by conducting audits regularly.

No violations related to corruption or corrupt practices were detected or reported during the year.

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## Environment

Terrafame's objective is continuous improvement in environmental safety and low environmental load. In practice, this is reflected, among others, in the fact that the sulphate load in 2019 was clearly less than the quota for emissions to water specified in the environmental permit. Only 41 percent or 6,632 tonnes of the sulphate quota was used. A good performance level was achieved because the process was run in a closed loop for most of the year saw. In 2019, 4.5 (2.5) million cubic meters of purified water was released from the industrial site. The discharge pipe of Lake Nuasjärvi was in operation from April to mid-July, and the release of water was restarted in late August. In addition to this, the so called old route for discharge waters from Latosuo to Kuusijoki was used from March to June. The chemical concentrations of purified water released from the site remained below permit levels during the year.

Terrafame's operations involve environmental risks, the most significant of which are related to managing the leach cycle in bioleaching, water management and the management of chemicals. During the year 2019, one of the environmental risks associated with leach cycle management materialized when damages were found in the liner structure in the primary leaching area. Damages were found in the plastic membrane and the protective structure above it, but not in the bentonite mat below the membrane. The membrane and the bentonite mat together form a water-tight sealing structure. Higher metal contents were detected in the water running below the liner structure but the contaminated water was returned to the leaching cycled through protective pumping. Based on the examination of the damage, no wider impact outside the primary leaching area was caused to groundwater. The company immediately launched the installation of a new sealing structure above the old structure to remedy the situation. The condition of the old structure was monitored in the primary leaching area as the ore reclaiming progressed and the new structure was installed where needed. The repairs to the structure will continue in 2020.

In 2019, 17 environmental incidents occurred and were reported to the supervisory authorities, i.e. the Kainuu Centre for Economic Development, Transport and the Environment (ELY Centre). Most of the environmental incidents were exceptional situations related to the leach cycle or water management. Terrafame has a low threshold for reporting incidents.

The permitting process on Terrafame's application for the renewal of the master permit is pending at the Northern Finland Regional State Administrative Agency (RSAA). The application was submitted in August 2017, and it was supplemented in July 2018. During 2019, the process progressed to the public hearing phase, and Terrafame expects that the permit decision will be made in 2020.

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

In December 2019, the Vaasa Administrative Court (VAC) issued two decisions concerning Terrafame's permitting processes. The first decision concerned Terrafame's KL2 waste rock area: the VAC changed the permit into a temporary one until a final or enforceable decision is made on the master permit. In practice, this means linking a separate permit for the waste rock area to the master permit. The second decision made by the VAC concerned the final disposal of the water treatment sludge in the geotubes located near the open pit. Following an appeal, the VAC annulled the RSAA's previous decision in which the final disposal of water treatment sludge in geotubes was permitted. Terrafame has already launched the relevant EIA procedure and planning. After these have been completed, an application for a permit for the final disposal of the old water treatment sludges generated around the mining site when the previous operator was still in charge will be submitted again to the RSAA.

In 2019, a study was launched to calculate the carbon footprint of nickel sulphate. The study is carried out by an international expert company, and its results will be verified by an independent external expert. It is already known that the carbon footprint of Terrafame's current main product – nickel sulphide – is clearly lower compared to traditional nickel production technologies. The results will be published after the study is complete sometime during the spring of 2020.

Terrafame's objective is to improve the company's energy efficiency and reduce the emissions from energy production. In 2019, the company's total energy use was 2,300.2 (2,138.0) TJ, of which the share of electricity was 62 percent. Terrafame concluded a contract in 2019 on the implementation of a renewable energy-based power plant for the upcoming battery chemicals plant. The new 10 MW solid fuel energy plant will use renewable fuels to produce steam and heat energy for the manufacture of battery chemicals and other needs in the industrial site. In addition, a partner company is developing the energy production infrastructure of the plant area and its energy efficiency as a whole. At the beginning of 2020, Terrafame announced that it will start producing process steam from the waste energy streams of hydrogen plants.

With regard to the Finnish Towards Sustainable Mining (TSM) Standard, Terrafame assessed its performance in 2019 using four tools: health and safety, water management, tailings management and community outreach.

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## Social and HR affairs and respect for human rights

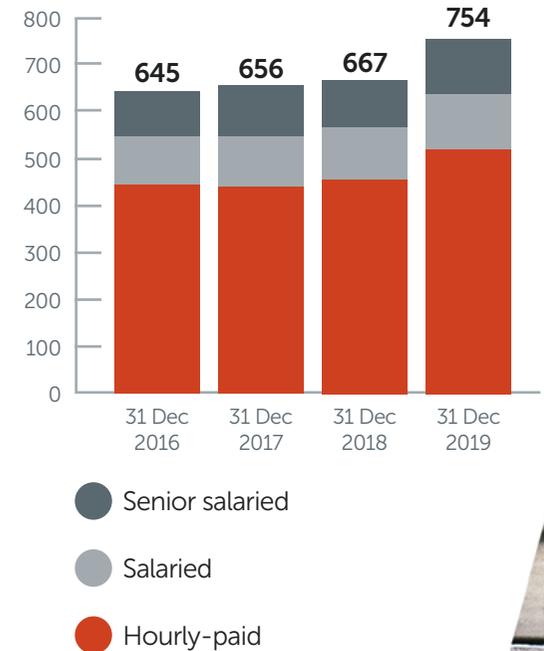
Nearly 1,500 people were regularly employed at Terrafame's industrial site during 2019. At the end of the year, Terrafame employed 754 (667) people, of which 77 (17) with a temporary contract. The company gave summer jobs to more than 70 people. In addition to the company's own employees, in average 735 people employed by its partner companies worked in the industrial site.

The total number of personnel increased by 13 per cent compared to 2018. The increase was especially influenced by the apprenticeship training initiated in the spring of 2019. Of the increased amount, 49 were participants in the apprenticeship training. With the operations expanding, the number of employees has increased by 63 percent since Terrafame started operations in 2015.

The priorities set in the company's personnel strategy are capacity building and competence development, skilled managerial work, and the building of effective intracompany cooperation. Major efforts and resources were allocated to the professional development of employees in 2019. During the year, about 70 Terrafame employees participated in education leading to a vocational qualification in maintenance, process engineering or electrical engineering, or in education leading to a specialist vocational qualification in technology while working. The training of ODR teams (Operator Driven Reliability) which was initiated in 2017 ended in the spring, and the incorporation of competences in production and maintenance was initiated in the departments with the aim of ensuring the usability of production lines. Other training opportunities included managerial coaching, workplace instructor training and training courses on themes such as occupational safety, chemical safety and the safe use of machines and equipment, as well as internal events for managerial staff related to the company's values. The time spent in training courses registered with the employer was 4.2 (3.4) days per person. The time spent in training by supervisors was 4.3 (4.5) days per person. The training and internal job rotation have strengthened people's professional skills and enabled offering suitable development paths for personnel.

Reaching out to skilled personnel and developing the recruitment process were important throughout the year. The availability and retention of skilled personnel are also key factors in personnel risks.

## Terrafame personnel



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The internal and external recruitment of experienced process and maintenance professionals for building a production organisation for the new battery chemicals plant commenced in late 2019. The total personnel of the plant will be more than 100 employees in the first half of 2021, increasing to approximately 150 once the plant is fully operational.

To support recruitment, Terrafame strengthens its local industrial expertise by cooperating with educational institutions. Spring 2019 saw the beginning of cooperation with Kajaani University of Applied Sciences KAMK to create a study programme for specialising in process engineering. In the autumn, applications were invited from engineers to participate in retraining and upgrading of qualifications leading to a Bachelor's degree in electrical and automation engineering. The company also launched a two-year apprenticeship training leading to a vocational qualification in process engineering, to which 50 people in total were selected in 2019. All in all, in addition to the people participating in the apprenticeship training and summer workers, Terrafame recruited more than 100 people to both new positions and existing positions vacant due to turnover. Extensive recruitment will also continue in the coming year in order to secure human resources for the battery chemicals plant.

The PeoplePower® index, which describes the overall results of the personnel survey carried out at Terrafame in September, was 65.5 (65.1), which is a little higher than the result of the 2018 survey. The result was mid-range in the technology industry reference group. In addition to the various departments' own targets for development, it was decided at company level to focus not only on strengthening the job introduction processes of skilled workers and supervisors, but also on developing inter-departmental cooperation and clarifying the division of responsibilities between functions.

Employee sick leave accounted for an average of 5.0 (4.3) percent of theoretical regular working hours.

Terrafame offers a wide range of work tasks and working conditions, which also brings requirements for measures to maintain work capacity and well-being at work and combating the related risks. A wide range of occupational health services are utilised at the company. The monitoring of various exposures and risks to working capacity is systematic and continuous. Early support and replacement work models were actively applied. Workplace and ergonomic surveys were targeted at regular intervals throughout the year at different task areas. To maintain mental and physical alertness, the company offers a sports and cultural benefit as well as subsidised meals at the workplace to its personnel.

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In its human resources management, Terrafame complies with national rules and regulations as well as international conventions on human rights and labour markets. The company respects the freedom of association and abides by legally binding collective agreements. Employee participation and consultation have been organised in accordance with national rules and regulations. The company has adopted an equality plan, which is updated periodically. Terrafame promotes equal opportunities and equal employment and career development in the spirit of the Act on Equality between Women and Men and in compliance with Terrafame's Equality Plan. Terrafame has updated its processes, policies and guidelines on the processing of personal data to comply with the EU General Data Protection Regulation (GDPR).

## Occupational and process safety

Safety is one of the core values at Terrafame, and the development of a safety culture has been one of the main priorities since the company was established. The company's management is committed to safety work and safety is also strongly promoted by the company's Management Team and Board of Directors. Terrafame has a safety bonus, which applies to all personnel and is used to reward for good safety performance.

In Terrafame's operations, the most significant occupational safety risks are associated with maintenance operations, construction works, large machinery and the use of chemicals. However, most injuries are sustained during normal installation work or as a result of slipping and falling in the yard, for example.

The year 2019 saw the safety campaign "Don't get hurt" with a total of 15 safety-related themes. Various safety-themed trainings were also organised. However, there were occupational safety challenges throughout the year, especially in the construction site of the battery chemicals plant, where the employees for the partner companies in charge of construction suffered altogether 6 lost-time injuries.

Terrafame's employees suffered 11 (8) lost-time injuries in 2019. The rolling 12-month lost-time injury frequency rate (LTIFR), or number of accidents resulting in absence per one million person-hours, was 9.6 (7.4).

The LTIFR for production and maintenance partners was 17.5.

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Terrafame found the LTIFR of companies operating in the battery chemicals plant – 33 – to be very high. For this reason, more attention was paid to accidents in cooperation with the contractors.

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

Strong efforts are being made to ensure hygiene at work. For example, all personnel are subject to regular occupational hygiene measurements once a year, and inspection and counselling visits are made to the 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. Terrafame also requires its partner companies operating in the industrial site to organise regular biomonitoring in the same manner that is used to carry out the measurements on Terrafame's own personnel.

The risk assessment procedures related to process safety were also updated during 2019. The greatest process safety risks are attributable to the hydrogen sulphide and hydrogen plants and the use of chemicals. From the viewpoint of process safety, it is important that processes are run smoothly without any unforeseen ramp-ups or shutdowns. In 2019, damages requiring repair measures were observed in one of the hydrogen sulphide plants when the condition of the plant and equipment was inspected. In November, there was a small fire in the plant area, which the industrial site's own firefighters were able to put out. The fire and short-term power outages during November also caused unplanned breaks in production.

Terrafame takes the various aspects of information security into account when developing its systems. The need for data processing is assessed on a case-by-case basis in preparation for both technical and administrative measures, and solutions are selected and operations developed in order to ensure that the high information security requirements are met. Various technical methods for security risk management are being applied, including firewalls, email scanning, anti-virus protection and multi-factor authentication. In addition, the personnel are kept informed and urged to be careful and maintain a 'healthy distrust' with regard to opening links and attachments.

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## Tax contribution

Terrafame's commitment to accountability also extends to tax matters. Terrafame has an important social duty and a regional role to play, especially in the Kainuu region. The company only operates in Finland and does not, therefore, pay taxes in other countries.

Tax reporting is based on the guidance on tax reporting issued on 1 October 2014 by the Government Ownership Steering Department of the Prime Minister's Office. The report excludes mandatory insurance premiums that are included in salary costs. These insurance premiums, which are directly related to salaries, are dealt with as direct salary costs, due to the nature of these kinds of insurance. The company does not report small amounts of value-added tax included in foreign travel and training costs.

Terrafame started the ramp-up of production in 2015, and 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 related to the companies' operations. In addition, the company has paid taxes related to the acquisition and ownership of assets, as normal.

## Tax categories of Terrafame Ltd in 2019 and 2018

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| Taxes paid. EUR 1.000                     | 2019          | 2018    |
|---|---------------|---------|
| <b>Direct taxes paid</b>                  | <b>829</b>    | 921     |
| Income taxes, operating at a loss         | 0             | 0       |
| Asset transfer taxes                      | 0             | 43      |
| Property tax                              | 454           | 454     |
| Employer's health insurance contributions | 257           | 277     |
| Parafiscal charges                        | 118           | 146     |
| <b>Indirect taxes paid</b>                | <b>5,597</b>  | 4,919   |
| Electricity taxes, net                    | 576           | 314     |
| Electricity taxes                         | 2,819         | 2,606   |
| Electricity taxes, return                 | -2,243        | -2,292  |
| Insurance premium tax                     | 465           | 316     |
| Fuel taxes, net                           | 4,553         | 4,282   |
| Fuel taxes                                | 5,298         | 4,978   |
| Fuel taxes, return                        | -745          | -696    |
| Waste tax                                 | 3             | 7       |
| <b>Taxes collected and accounted for</b>  | <b>18,175</b> | 14,340  |
| Tax withheld in advance                   | 7,798         | 7,649   |
| Value-added tax, net                      | 10,377        | 6,691   |
| Value-added tax, sales                    | 85,072        | 78,299  |
| Value-added tax, purchases                | -74,695       | -71,607 |
| <b>Total</b>                              | <b>24,601</b> | 20,180  |
| Ratio of tax payments to net sales        | 7.93 %        | 6.19 %  |

On 31 December 2019, the company had unrecognised deferred tax assets of approximately EUR 30.2 million, which consist of the estimated taxable result for the financial year 2019 (EUR 2.4 million) and the taxable result for the year 2018 (EUR 3.6 million), the taxable result for the financial year 2017 (EUR 1.1 million), the confirmed loss for the financial year 2016 (EUR -20.4 million), and the confirmed loss for the financial year 2015 (EUR -16.9 million).

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The company's key strategic goal has been clear from the start of operations: the company aims to be in the most cost-effective quartile of the world's nickel producers. The ramp-up of production has gone smoothly and the company is now set to continue its dedicated and systematic efforts to improve its operational excellence.

Terrafame's strategic direction was outlined in autumn 2018. At the time, the decision was made to invest in a battery chemicals plant. Once completed, the plant will use the metal recovery plant's current main product – nickel-cobalt sulphide – as its raw material. When the company starts to refine the intermediate currently sold as a raw material to metal refining companies, it will move forward in the metal refining value chain to become a manufacturer of specialty chemicals. The new plant is one of the world's largest production units for nickel sulphate used in electric vehicle batteries.

For Terrafame as a company, moving forward in the refining chain also means repositioning itself in the battery chemicals market. The aim is to turn Terrafame into a strong industrial brand that displays the company's deep roots in Kainuu as well as its operational strengths: the significant nickel resources of the Sotkamo mine, the unique integrated production process from the open pit to battery chemicals, the low carbon footprint of the production, the sustainable and traceable European supply chain as well as the skilled staff.

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Terrafame develops its processes mainly in connection with usual business activities and the development measures qualify as normal business expenses.

Research of the bioleaching process using microbiological and mineralogical techniques continued in 2019 with the aim of maximising the output. In addition, opportunities to optimise, inter alia, agglomeration, aeration and irrigation were developed in the bioleaching heaps. Terrafame is also involved in two EU projects (Nemo and SO<sub>4</sub> control), the objective of which is to enable the use of sulphurous ore fractions and metallic solutions. The projects are developing new methods for boosting the efficiency of existing processes and creating uses for the side streams generated in mines.

Surface structure trials were continued at the secondary leaching area and at the gypsum ponds in order to study various ways of covering these areas in the future.

A three-year trial related to waste rock was launched in autumn 2017, and the work also continued in the summer of 2019. The objective of the trial is to obtain information that can be used in the development and monitoring of the base structures of waste rock areas. Another aim is to examine the opportunities to benefit financially from the low concentrations of valuable minerals in waste rock.

Process research work was carried out alongside the planning of the battery chemicals plant in order to confirm the plant's design criteria and dimensions. Terrafame is also involved in the BATCircle project coordinated by Aalto University, aimed at promoting the use of indigenous mineral resources, developing metal refining processes for the needs of the battery industry, and increasing the recycling of materials in cooperation with mining sector companies and research institutes.

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The Finnish Government decided on 6 February 2020, to grant a uranium extraction permit to Terrafame. The company submitted the permit application for uranium extraction under the Nuclear Energy Act (990/1987) to the Finnish Government on 30 October 2017. Terrafame already has the necessary chemicals permit and environmental permit. The process of getting the uranium extraction plant ready for use will take approximately one year, during which time the plant's organisation will also be built. However, as the Government decision is subject to appeal at the Supreme Administrative Court of Finland, Terrafame estimates it will take approximately 2 years until the permit has legal force.

In December 2019 Terrafame launched the neutralising process in order to purify and reduce the process solution. The neutralising process increases the sulphate content in the purified water and because of this it is estimated that the sulphate concentration limit will be exceeded from February to April. Exceeding the monthly limit for the sulphate load is likely in April, but it is estimated that the limit will not be exceeded from February to March. Due to all this it is estimated that during 2020, the sulphate load in the water released from the area will increase compared to 2019, but the load will stay clearly under the quota set for the yearly emissions to water. The neutralising process was launched because the second half of 2019 was extremely rainy in Kainuu. In addition to this, due to high amounts of snow in Kainuu, the meltwaters caused by several mild periods during the exceptional winter have increased the amount of water in the process.

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## Estimate of major risks and uncertainties

Terrafame complies with the risk management policy adopted by the Board of Directors. Efforts are made to identify risks, their impact on company business and operations is assessed, and risk management measures are planned as required. Key operational business risks were also assessed in 2019.

The company's operations are affected by various generic risks of the mining industry, including the risks of the impact of environmental permits, other permits, taxes and fees on company expenses. Key business risks include 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.

The key risks in Terrafame's production operations are related to occupation safety and the environmental safety of the process. The key risks identified in the risk assessment are reduced, for example, by making technical improvements, investing and developing the competence of employees.

## Estimate of future developments

Since the end of the review period, the price of nickel in the London Metal Exchange (LME) has remained at the USD 13,000 per tonne level. Nonetheless, the fluctuation of prices has continued to be strong.

The process equipment installation work at the battery chemicals plant is progressing and the commercial production of battery chemicals will commence in early 2021.

Terrafame will continue to take measures to improve its safety culture, production and cost efficiency.

## Board of Directors' proposal for the disposal of the result

Terrafame Ltd's result for the financial period for 2019 shows a loss of EUR 15,207,562.45. On 31 December 2019, Terrafame's distributable equity totalled EUR 347,748,179.15. The Board proposes that the loss be transferred to the retained earnings/loss account and that no dividend be paid.

## Key figures and formulas for calculating the figures

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| Scope of operations             | 2019         | 2018  | 2017  | 2016   |
|---------------------------------|--------------|-------|-------|--------|
| Net sales, MEUR                 | <b>310.4</b> | 325.8 | 220.0 | 101.0  |
| Balance sheet total, MEUR       | <b>749.5</b> | 681.6 | 618.5 | 370.7  |
| Total capital expenditure, MEUR | <b>130.6</b> | 81.5  | 92.7  | 84.3   |
| as % of net sales               | <b>42.1</b>  | 25.0  | 42.1  | 83.2   |
| Average number of personnel     | <b>722</b>   | 669   | 694   | 626    |
| Profitability                   |              |       |       |        |
| EBITDA, MEUR                    | <b>32.0</b>  | 32.8  | 13.6  | -120.6 |
| EBITDA-%                        | <b>10.3</b>  | 10.1  | 6.2   | n.a.   |
| EBIT                            | <b>-5.6</b>  | 3.0   | -6.2  | -134.5 |
| EBIT-%                          | <b>n.a.</b>  | 0.9   | n.a.  | n.a.   |
| Net profit                      | <b>-15.2</b> | -6.2  | -9.6  | -124.9 |
| Solvency                        |              |       |       |        |
| Equity ratio, %                 | <b>46.7</b>  | 53.6  | 47.8  | 44.6   |
| Net gearing, %                  | <b>31.7</b>  | -0.9  | -5.8  | -26.3  |

Equity ratio:

$(\text{Equity} + \text{minority interest}) * 100 / \text{Balance sheet total} - \text{short-term and long-term advance payments received}$

Net gearing:

$(\text{Interest bearing debt} - \text{cash funds}) * 100 / \text{Equity} + \text{general provisions}$

Terrafame has adopted the IFRS 16 Leases standard as permitted by section 5:5b of the Finnish Accounting Act and by the IAS Regulation (EU) in its financial accounting effective 1 January 2019, using the simplified approach. The cumulative impact of the implementation of the standard has been recognized on the balance sheet and the comparative figures have not been restated. The comparative figures regarding lease liabilities are presented according to the Finnish Accounting Act.

## Financial Statements 1 January – 31 December 2019

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### Balance sheet

#### Assets

| Non-current assets              | Note | Dec 31, 2019   | Dec 31, 2018 |
|---------------------------------|------|----------------|--------------|
| Intangible assets               | 2.1  | 1,079          | 1,464        |
| Tangible assets                 | 2.2  | 438,999        | 345,919      |
| <b>Non-current assets total</b> |      | <b>440,078</b> | 347,382      |
| <b>Current assets</b>           |      |                |              |
| Inventories                     | 2.3  | 218,157        | 199,196      |
| <b>Long-term receivables</b>    |      |                |              |
| Deferred tax assets             | 2.4  | 227            | 0            |
| <b>Short-term receivables</b>   |      |                |              |
| Amounts owed by group companies | 2.5  | 177            | 26           |
| Trade receivables               |      | 15,066         | 16,995       |
| Other receivables               |      | 173            | 982          |
| Prepayments and accrued income  | 2.6  | 13,751         | 20,302       |
| Cash and cash equivalents       |      | 61,896         | 96,696       |
| <b>Current assets total</b>     |      | <b>309,448</b> | 334,198      |
| <b>Assets, total</b>            |      | <b>749,526</b> | 681,580      |

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## Equity and liabilities

| Equity, EUR 1000                    | Note | Dec 31, 2019    | Dec 31, 2018 |
|-------------------------------------|------|-----------------|--------------|
| Subscribed capital                  | 2.7  | <b>2,000</b>    | 2,000        |
| <b>Other reserves</b>               |      |                 |              |
| Invested unrestricted equity        |      | <b>596,297</b>  | 589,677      |
| Fair value reserve                  | 2.8  | <b>-909</b>     | 6,382        |
| Retained earnings (loss)            |      | <b>-232,433</b> | -226,261     |
| Loss of the financial year          |      | <b>-15,208</b>  | -6,171       |
| <b>Equity total</b>                 |      | <b>349,748</b>  | 365,627      |
| <b>Provisions</b>                   | 2.9  | <b>157,398</b>  | 158,363      |
| <b>Long term liabilities</b>        |      |                 |              |
| Loans from credit institutions      | 2.10 | <b>140,857</b>  | 93,135       |
| Deferred tax liabilities            | 2.11 | <b>0</b>        | 1,596        |
| <b>Long term liabilities total</b>  |      | <b>140,857</b>  | 94,730       |
| <b>Short term liabilities</b>       |      |                 |              |
| Amounts owed to group companies     | 2.12 | <b>281</b>      | 112          |
| Loans from credit institutions      | 2.13 | <b>31,931</b>   | 155          |
| Trade payables                      |      | <b>49,922</b>   | 47,387       |
| Other liabilities                   |      | <b>2,674</b>    | 825          |
| Accruals and deferred income        | 2.14 | <b>16,715</b>   | 14,381       |
| <b>Short term liabilities total</b> |      | <b>101,523</b>  | 62,861       |
| <b>Liabilities total</b>            |      | <b>242,380</b>  | 157,591      |
| <b>Equity and liabilities total</b> |      | <b>749,526</b>  | 681,580      |

## Income statement

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| Net sales, EUR 1000                        | Note | 2019            | 2018     |
|--|------|-----------------|----------|
| <b>Net sales</b>                           | 3.1  | <b>310,426</b>  | 325,830  |
| Cost of goods sold                         | 3.2  | <b>-291,941</b> | -301,550 |
| Gross profit                               |      | <b>18,485</b>   | 24,280   |
| Sales and marketing expenses               | 3.3  | <b>-1,391</b>   | -1,360   |
| Administrative expenses                    | 3.4  | <b>-17,621</b>  | -15,373  |
| Other operating revenues                   |      | <b>1,338</b>    | 831      |
| Other operating expenses                   | 3.5  | <b>-6,437</b>   | -5,388   |
| <b>Operating profit/loss</b>               |      | <b>-5,625</b>   | 2,991    |
| <b>Financial income and expenses</b>       | 3.6  |                 |          |
| Interest income and other financial income |      | <b>1,155</b>    | 1,696    |
| Interest and other finance expenses        |      | <b>-10,737</b>  | -10,857  |
| Financial income and expenses              |      | <b>-9,582</b>   | -9,162   |
| <b>Profit/Loss before tax</b>              |      | <b>-15,208</b>  | -6,171   |
| <b>Profit/Loss for the financial year</b>  |      | <b>-15,208</b>  | -6,171   |

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| Cash flow from operating activities   | 2019            | 2018           |
|---|-----------------|----------------|
| Result for the financial period   | -15,208         | -6,171         |
| <b>Adjustments:</b>   |                 |                |
| Depreciation and amortisation   | 37,622          | 29,819         |
| Unrealised foreign exchange gains and losses                                | 1,297           | 3,147          |
| Other income and expenses, non-cash items                                   | -965            | -1,049         |
| Financial income and expenses   | 8,285           | 4,225          |
| Other adjustments   | -172            | 20             |
| <b>Cash flow before change in net working capital</b>                       | <b>30,859</b>   | <b>29,990</b>  |
| <b>Change in net working capital:</b>                                       |                 |                |
| Change in trade and other receivables; increase (-) / decrease (+)          | 4,558           | 7,569          |
| Change in inventories; increase (-) / decrease (+)                          | -18,961         | -30,574        |
| Change in trade payables and other liabilities; increase (-) / decrease (+) | -1,332          | 2,361          |
| <b>Cash flow before financial items and income tax</b>                      | <b>15,124</b>   | <b>9,347</b>   |
| Interest paid and other financial expenses                                  | -5,145          | -4,857         |
| Interest received, operational  | 664             | 5632           |
| <b>Cash flow from operating activities (A)</b>                              | <b>10,644</b>   | <b>5,121</b>   |
| <b>Cash flow from investing activities:</b>                                 |                 |                |
| Investments in tangible and intangible assets                               | -118,571        | -81,120        |
| Proceeds from sale of tangible and intangible assets                        | 12,725          | 1              |
| <b>Cash flow from investing activities (B)</b>                              | <b>-105,846</b> | <b>-81,119</b> |

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| Cash flow from financing activities   | 2019           | 2018           |
|---|----------------|----------------|
| Paid increase in equity   | 0              | 65,271         |
| Proceeds from long-term borrowings  | 62,947         | 0              |
| Repayment of long-term borrowings   | -28,619        | 0              |
| Proceeds from short-term borrowings   | 28,619         | 0              |
| Repayment of short-term borrowings  | -203           | -33            |
| Repayment of short-term lease liabilities                                     | -2,551         | 0              |
| Interest and other financing costs paid                                       | 0              | 0              |
| Direct taxes paid   | 0              | 0              |
| <b>Cash flow from financing activities (C)</b>                                | <b>60,192</b>  | <b>65,237</b>  |
| <b>Impact of exchange rate changes on the amount of foreign currency cash</b> | <b>210</b>     | <b>1,064</b>   |
| <b>Change in cash and cash equivalents; increase (+) / decrease (-)</b>       | <b>-35,010</b> | <b>-10,760</b> |
| <b>Cash and cash equivalents at the beginning of the period</b>               | <b>96,696</b>  | <b>106,392</b> |
| <b>Cash and cash equivalents at the end of the period</b>                     | <b>61,896</b>  | <b>96,696</b>  |

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## 1. Accounting principles

Terrafame Ltd is domiciled in Sotkamo, Finland. Terrafame is a group company of Finnish Minerals Group, whose parent company is Suomen Malmijalostus Oy, Helsinki, Finland. Copies of the consolidated financial statements are available at the office of Finnish Minerals Group, and they can be viewed on the company's website at [www.mineralsgroup.fi](http://www.mineralsgroup.fi). Terrafame Ltd's financial statements are available at [www.terrafame.com](http://www.terrafame.com).

### Basis of preparation

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

### Translation of items denominated in foreign currencies

Transactions in foreign currencies are entered in euros at the rates prevailing at the transaction date or average rates provided by central banks. Foreign currency-denominated receivables and liabilities have been translated into euros 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.

### Revenue recognition

Revenue is recognised from a sale when evidence of an arrangement exists, the title has been transferred to the customer, the price is determinable, and collection of the sales price is reasonably assured. Revenue is recognised net of sales-related foreign exchange gains and losses and any applicable sales taxes. Most sales are priced in US dollars. The time of revenue recognition is determined on the basis of the terms of delivery used.

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A large proportion of the company's production is sold under long-term contracts, but sales revenue is only recognised on individual sales when persuasive evidence exists that all of the following criteria have been met:

- all material risks and rewards of ownership have been transferred to the buyer;
- there is no continuing managerial involvement to the degree usually associated with ownership or effective control over goods sold;
- the amount of revenue can be reliably determined;
- the costs incurred or to be incurred in respect of the sale can be reliably determined; and
- the flow of future economic benefits to the seller is probable.

Upon delivery, a preliminary invoice is drawn up based on preliminary analysis and measurement results and the market prices of the month preceding the month of delivery. Preliminary invoices are entered as sales. The final analysis and measurement results are normally obtained within a few months. Any preliminary invoices are adjusted based on 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.

With regard to preliminary invoices for which final analysis and measurement results have not yet been obtained, the sales prices and euro-denominated valuations are adjusted 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. Such write-downs were not made in the financial statements of 31 December 2019. The metal hedges for metal tonnes sold have been taken into account in the valuation of sales.

## Pension obligations

The company has pension schemes in accordance with local conditions and practices. These are arranged with an external insurance company. Pension costs are entered as expenses in the year in which they occur.

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## Borrowing costs

Starting from the financial period of 2019 Terrafame capitalises interest costs relating to significant investment projects in accordance with the Section 4:5.2-3 of the Finnish Accounting Act. Borrowing costs for the comparison period are recognised as expenses in the period during which they are incurred.

## Deferred tax assets and liabilities

Deferred tax assets and liabilities are calculated on temporary differences between the book value and taxable value, using the tax rates enacted by 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. Deferred tax assets or tax liabilities with respect to the fair values of derivative contracts have been recognised in the company's balance sheet. Deferred tax assets and liabilities recognised according to adaptations of Section 5:5b of the Finnish Accounting Act are presented in the notes to the income statement.

## Tangible assets

Tangible assets have been recognised in the balance sheet at cost, less planned depreciation. Non-current tangible assets include, among other things, buildings, infrastructure, machinery and equipment used in mining and metal recovery operations, laboratory equipment, vehicles, roads, power lines and structures for environmental protection. Acquisition cost includes expenditure that is directly attributable to the acquisition, construction or production of the item.

Non-current assets bought from the bankruptcy estate of Talvivaara Sotkamo Ltd on 15 August 2015 have been amortised in accordance with the original depreciation plan by applying the normal planned depreciation periods, with the exception that a write-down of approximately EUR 76 million was made on the acquired tangible assets: the net expenditure of acquired tangible assets as at 15 August 2015 was approximately EUR 202.6 million, on which a write-down of EUR 76 million was made, and the acquired tangible assets were entered in the company's balance sheet in the amount of EUR 126.6 million.

Spare parts with a useful life of more than one year have been recognised in non-current assets as of the 2017 financial statements. On 31 December 2019, their value totalled EUR 14.5 million.

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Where parts of an item of tangible assets have different useful lives, they are accounted for as separate items.

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

|   |             |
|---|-------------|
| Roads and power lines                   | 25 years    |
| Buildings and structures                | 10–40 years |
| Leaching heap base structures           | 10–30 years |
| Machinery and equipment                 | 4–25 years  |
| Furniture, fixtures and fittings        | 5–10 years  |
| Vehicles                                | 5–10 years  |
| Fixed asset spare parts                 | 3 years     |
| Structures for environmental protection | 25 years    |

Net expenditures are reassessed in connection with each financial statement. The reassessment is based on the company'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 book value and are recognised within other operating income or expenses, respectively, in the income statement.

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## Implementation of the IFRS 16 Leases standard

Terrafame has applied the IFRS 16 Leases standard as permitted by section 5:5b of the Finnish Accounting Act and by the IAS Regulation (EU) in its financial accounting starting from 1 January 2019, using the simplified approach. The cumulative effect of the new standard is shown on the balance sheet and the comparative figures have not been restated. The comparative figures regarding leases are presented according to the Finnish Accounting Act.

The standard requires that all leases be recognized on the lessee's balance sheet. As a lessee, the company is required to recognize a right-of-use asset representing its right to use the underlying leased asset and, correspondingly, a lease liability representing its obligation to make lease payments, in its balance sheet. The right-of-use asset is depreciated in accordance with a depreciation schedule determined on the basis of the lease term or useful life of the asset. Interest on a lease liability is presented in finance expenses.

The company applies the standard's exemption to the assets of short-term leases and leases of low-value and these are not recognized as right-of-use assets and lease liabilities on the balance sheet. As a result, the payments associated with such leases are recognized as an expense in the income statement on a straight-line basis over the lease term. From the lessor's point of view, lease agreements are still divided into two categories: finance leases and other leases. The company has not concluded any significant agreements as a lessor. These agreements are classified according to IFRS 16 as other leases.

As a result of the adoption of the standard, the company has recognized right-of-use assets on its balance sheet under machinery and equipment on the basis of lease liabilities concerning vehicles and mobile mining equipment.

The value of right-of-use assets recognized under machinery and equipment on 1 January 2019, is EUR 0.8 million and the value of related lease liabilities is EUR 0.6 million. On 31 December 2018, the value of lease and leasing liabilities was EUR 0.7 million. The difference in the lease liabilities compared to lease and leasing exposures of the comparison year is mainly due to the fact that the company has, in the transition, applied the exemption for short-term leases and low-value assets for relief. The weighted interest average used in the calculations was 3.3%.

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The implementation of IFRS 16 has a low impact on the presentation of the cash flow statement. The cash flow from operating activities before financial items and taxes is improving because instead of lease, in accordance with IFRS 16, the payments relating to decreasing lease liabilities are presented in the cash flow and the associated interest payments are presented similarly to other interest payments. In 2018, the lease payments were presented in full in the cash flow from operating activities before financial items and taxes.

## Impact of IFRS 16 on the financial period 2019

### Balance sheet

Interest-bearing debt of the opening balance increased to EUR 0.6 million

Increases in the right-of-use assets for the period EUR 17.0 million

### Income statement

Positive impact on operating profit EUR 2.7 million

(Planned depreciation EUR 1.7 million)

Finance expenses EUR 0.4 million

### Cash flow statement

Impact on cash flow from operating activities EUR 2,6 million (before financial items and taxes)

Impact on cash flow from financing operations EUR -2,6 million

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## Other intangible assets

Other intangible assets are recognised in the balance sheet at cost, less planned depreciation. Other intangible assets mainly comprise IT applications and geodata supporting the company's business operations, which are amortised over 3–5 years.

## Research and development expenditure

Research expenditure is recognised as an expense as incurred. The company has not capitalised development expenditure during the financial period 2019 or earlier.

## Inventories

The company 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 percent is made. The write-down increases 25 percentage points annually, 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.

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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 finished product inventory of 31 December 2019 was valued at EUR 6.9 million at-cost on the basis of the acquisition cost. 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 186.2 million on 31 December 2019.

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.

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## Derivatives and hedge accounting

### Derivatives

The derivatives used by the company were acquired for hedging purposes, and hedge accounting has been applied to them. Any unrealised change in the value of derivatives that are considered effective hedges are recognised, in accordance with Section 5:2a of the Finnish Accounting Act, at fair value in the balance sheet's fair value reserve as per the valuation report for the last day of the reporting period. The fair values of derivatives are based on valuations of external counterparties.

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 in accordance with Section 5:2a of the Finnish Accounting Act to all hedging instruments it holds. 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.

### 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 in the fair value 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.

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## Provisions

Provisions are recognised when the company 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.

A provision is made for mine closure costs and legal claims on the following conditions: the obligation relates to a closed or prior financial period, its materialisation is deemed certain or likely upon preparation of financial statements, the corresponding income is neither certain nor likely, the obligation is based on law or commitment to third parties, and the obligation can be identified but its precise amount or time of realisation is not known.

## 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, open pits 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.

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Restoration costs have been estimated in accordance with the cost level at the date of closure of the accounts.

The bioleaching method used by Terrafame is of such a nature that the process cannot be stopped abruptly at the end of operations. In order to ensure environmental safety, bioleaching must be continued until most of the metals have been recovered at the metals production plant. Also, the safe management of solution circulation requires a phased ending. Mining and ore crushing will be terminated after the closure decision.

The shutdown of bioleaching and metals recovery processes is expected to last approximately three to four years. During the first two years, primary phase leaching will be terminated, and primary leaching ore will be transferred to the secondary heap in accordance with permit requirements. In the first two years, the metals production plant will normally be operated on hydrogen sulphide precipitation, and the resulting metals will be sold. During this time, detailed closure plans will be drawn up, and regulatory processes required for closure will be initiated.

After the third year, bioleaching will still be operational in secondary leaching, and when the metal concentrations of the solution decrease, the metals production plant will transfer to sodium hydrogen sulphide precipitation, which will continue to produce small amounts of product for sale. This phase is estimated to last from one to two years, after which the bioleaching and the operations of the metals production plant will be discontinued, and the dilute solutions formed will be treated either at the central water treatment plant or by any other suitable purification method.

An environmental provision for the closure of the mine of EUR 157,4 million has been set to cover the closure costs for thirty years from the date the actual closure measures commence. The environmental provision covers, for example, closure of bioleaching areas, necessary soil rehabilitation measures, solution and water management, and environmental monitoring. It is estimated that the central water treatment plant will be used for around ten years, after which lighter purification methods will be adopted. The company assesses the amount of the environmental provision annually. The assumption is that a decision on the closure of mining operations would have been made at the balance sheet date.

## 2. Notes to the balance sheet

### 2.1. Intangible assets

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|  | Intangible rights | Other capitalized long-term expenditures | Investments in progress | Total        |
|--|-------------------|--|-------------------------|--------------|
| <b>Carrying amount at 31 December 2018</b> | <b>1,389</b>      | <b>75</b>                                | <b>0</b>                | <b>1,464</b> |

|   |       |     |    |              |
|---|-------|-----|----|--------------|
| Gross carrying amount at 1 January 2019   | 2,404 | 144 | 0  | <b>2,548</b> |
| Increase                                  | 14    | 0   | 92 | <b>107</b>   |
| Capitalisation for the year               | 0     | 0   | 0  | <b>0</b>     |
| Gross carrying amount at 31 December 2019 | 2,418 | 144 | 92 | <b>2,654</b> |

| Accumulated amortisation and impairment losses |       |    |   |              |
|--|-------|----|---|--------------|
| 1 January 2019                                 | 1,015 | 69 | 0 | <b>1,084</b> |
| Amortisation for the year                      | 466   | 25 | 0 | <b>491</b>   |

| Accumulated amortisation and impairment losses |            |           |           |              |
|--|------------|-----------|-----------|--------------|
| 31 December 2019                               | 1,481      | 94        | 0         | <b>1,575</b> |
| <b>Carrying amount at 31 December 2019</b>     | <b>937</b> | <b>50</b> | <b>92</b> | <b>1,079</b> |

## 2.2 Tangible assets

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|   | Land         | Buildings     | Machinery and equipment | Other tangible assets | Construction in progress | Total          |
|---|--------------|---------------|-------------------------|-----------------------|--------------------------|----------------|
| <b>Carrying amount at 31 Dec 2018</b>                         | <b>1,399</b> | <b>58,653</b> | <b>113,241</b>          | <b>145,816</b>        | <b>26,810</b>            | <b>345,919</b> |
| Gross carrying amount at 1 Jan 2019                           | 1,399        | 70,672        | 153,414                 | 159,768               | 26,810                   | <b>412,063</b> |
| Increase  | 10           | 0             | 9,300                   | 0                     | 115,893                  | <b>125,202</b> |
| Capitalisation for the year                                   | 0            | 159           | 9,408                   | 21,828                | -31,395                  | <b>0</b>       |
| Transfers   | 0            | -5,965        | 0                       | 5,965                 | 0                        | <b>0</b>       |
| Decrease  | 0            | 0             | -14,208                 | 0                     | 0                        | <b>-14,208</b> |
| <b>Gross carrying amount at 31 Dec 2019</b>                   | <b>1,409</b> | <b>64,866</b> | <b>157,915</b>          | <b>187,560</b>        | <b>111,308</b>           | <b>523,058</b> |
| Accumulated amortisation and impairment losses at 1 Jan 2019  | 0            | 12,019        | 40,174                  | 13,952                | 0                        | <b>66,144</b>  |
| Decrease  | 0            | -445          | 0                       | 445                   | 0                        | <b>0</b>       |
| Amortisation for the year                                     | 0            | 4,078         | 20,844                  | 10,512                | 0                        | <b>35,435</b>  |
| Depreciation for reductions                                   | 0            | 0             | -1,655                  | 0                     | 0                        | <b>-1,655</b>  |
| Accumulated amortisation and impairment losses at 31 Dec 2019 | 0            | 15,652        | 59,363                  | 24,910                | 0                        | <b>99,924</b>  |
| <b>Carrying amount at 31 Dec 2019</b>                         | <b>1,409</b> | <b>49,215</b> | <b>98,552</b>           | <b>162,650</b>        | <b>111,308</b>           | <b>423,134</b> |

## 2.2 Tangible assets

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|  | Machinery and<br>equipment<br>Right-of-use assets | Total         |
|--|---|---------------|
| Gross carrying amount<br>at 1 Jan 2019                           | 785   | <b>785</b>    |
| Increase   | 17,014  | <b>17,014</b> |
| Decrease   | 0   | <b>0</b>      |
| <b>Gross carrying amount<br/>at 31 Dec 2019</b>                  | <b>17,799</b>                                     | <b>17,799</b> |
| Accumulated amortisation and<br>impairment losses at 1 Jan 2019  | 237   | <b>237</b>    |
| Decrease   | 0   | <b>0</b>      |
| Amortisation for the year  | 1,697   | <b>1,697</b>  |
| Depreciation for reductions                                      | 0   | <b>0</b>      |
| Accumulated amortisation and<br>impairment losses at 31 Dec 2019 | 1,934   | <b>1,934</b>  |
| <b>Carrying amount<br/>at 31 Dec 2019</b>                        | <b>15,865</b>                                     | <b>15,865</b> |

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## IFRS 16 Leases standard notes

| Maturity analyses                           | 2019          |
|---|---------------|
| No later than 1 year                        | <b>3,360</b>  |
| Later than 1 year and no later than 5 years | <b>11,887</b> |
| Over 5 years                                | <b>0</b>      |
| <b>Carrying amount at 31 December 2019</b>  | <b>15,248</b> |

| Items recognised in profit or loss                              |              |
|---|--------------|
| Lease expenses  | <b>33</b>    |
| Lease expenses  | <b>3,284</b> |
| Depreciation by item class                                      | <b>1,697</b> |
| Interest losses from leasing liabilities                        | <b>370</b>   |
| Above Leasing costs are included in<br>Other operating expenses |              |

| Items booked in Cash flow statement  |              |
|--------------------------------------|--------------|
| Payments from lease agreements total | <b>5,868</b> |

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## 2.3 Inventories

|                               | Dec 31, 2019   | Dec 31, 2018   |
|-------------------------------|----------------|----------------|
| Raw materials and consumables | <b>25,016</b>  | 26,642         |
| Work in progress              | <b>186,237</b> | 170,654        |
| Finished goods                | <b>6,904</b>   | 1,900          |
| <b>Total</b>                  | <b>218,157</b> | <b>199,196</b> |

The value of raw materials and consumables on 31 December 2019 includes a provision of EUR 6,407 thousand for slow-moving inventory, which reduces the value of inventory. The corresponding provision on 31 December 2018 was EUR 4,553 thousand. Furthermore, at the time of carrying out inventory for the financial period 2018, an obsolescence provision of EUR 1,260 thousand was made for the raw materials and consumables inventory, which also reduced the value of inventory. In the financial period 2019, this provision was taken into account in the inventory values.

## 2.4 Deferred tax assets

|                            | Dec 31, 2019 | Dec 31, 2018 |
|----------------------------|--------------|--------------|
| <b>Deferred tax assets</b> | <b>227</b>   | <b>0</b>     |

According to estimates, the company has approximately EUR 150.8 million of confirmed and to-be-confirmed losses, and approximately EUR 45.9 million of deferred depreciation. Deferred tax assets or tax liabilities for derivatives have been recognised in the company's balance sheet.

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## 2.5 Amounts owed by Group companies

|                        | Dec 31, 2019 | Dec 31, 2018 |
|------------------------|--------------|--------------|
| Finnish Minerals Group | <b>177</b>   | 26           |
| <b>Total</b>           | <b>177</b>   | 26           |

## 2.6 Prepayments and accrued income

|                                      | Dec 31, 2019  | Dec 31, 2018 |
|--------------------------------------|---------------|--------------|
| Other prepayments and accrued income | <b>7,387</b>  | 9,357        |
| Derivative receivables               | <b>6,364</b>  | 10,945       |
| <b>Total</b>                         | <b>13,751</b> | 20,302       |

## 2.7 Equity

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|  | Dec 31, 2019    | Dec 31, 2018    |
|--|-----------------|-----------------|
| Subscribed capital at the beginning of the period            | <b>2,000</b>    | 2,000           |
| <b>Subscribed capital at the end of the period</b>           | <b>2,000</b>    | <b>2,000</b>    |
| Fair value reserve at the beginning of the period            | <b>6,382</b>    | -4,501          |
| Increase   | <b>133,993</b>  | 91,452          |
| Decrease   | <b>141,284</b>  | 80,568          |
| <b>Fair value reserve at the end of the period</b>           | <b>-909</b>     | <b>6,382</b>    |
| Invested unrestricted equity at the beginning of the period  | <b>589,677</b>  | 524,406         |
| Investment in invested unrestricted equity                   | <b>6,620</b>    | 65,271          |
| <b>Invested unrestricted equity at the end of the period</b> | <b>596,297</b>  | <b>589,677</b>  |
| Retained earnings at the beginning of the period             | <b>-232,433</b> | -226,261        |
| Retained earnings at the end of the period                   | <b>-232,433</b> | -226,261        |
| <b>Loss for the period</b>                                   | <b>-15,208</b>  | <b>-6,171</b>   |
| <b>Retained earnings</b>                                     | <b>-247,640</b> | <b>-232,433</b> |
| <b>Total equity</b>  | <b>349,748</b>  | <b>365,627</b>  |

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## 2.7 Equity

| Restricted equity at the end of the period | Dec 31, 2019 | Dec 31, 2018 |
|--|--------------|--------------|
| Subscribed capital                         | <b>2,000</b> | 2,000        |
| Fair value reserve                         | <b>-909</b>  | 6,382        |
| <b>At the end of the period</b>            | <b>1,091</b> | <b>8,382</b> |

| Distributable equity at the end of the period | Dec 31, 2019    | Dec 31, 2018   |
|---|-----------------|----------------|
| Retained earnings                             | <b>-232,433</b> | -226,261       |
| Loss for the period                           | <b>-15,208</b>  | -6,171         |
| Fair value reserve                            | <b>-909</b>     | 0              |
| Invested unrestricted equity                  | <b>596,297</b>  | 589,677        |
| <b>At the end of the period</b>               | <b>347,748</b>  | <b>357,244</b> |

The fair value reserve comprises the market value of derivatives covered by hedge accounting.

## 2.8 Notes to hedging derivatives

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| Currency and interest rate derivatives | Dec 31, 2019 |                     |             | Dec 31, 2018 |                     |      | 2019                | 2018                |
|--|--------------|---------------------|-------------|--------------|---------------------|------|---------------------|---------------------|
|  | Positive     | Fair value Negative | Net         | Positive     | Fair value Negative | Net  | Notional amount USD | Notional amount USD |
| Foreign exchange forwards              | 565          | 1,358               | <b>-793</b> | 176          | 529                 | -353 | 177,000             | 91,000              |
| Currency options                       | 0            | 0                   | <b>0</b>    | 198          | 693                 | -495 | 0                   | 128,000             |

| Metal derivatives        |              |              |               |               |              |              | Tonnes | Tonnes |
|--------------------------|--------------|--------------|---------------|---------------|--------------|--------------|--------|--------|
| Nickel forward contracts | 1,904        | 5,876        | <b>-3,972</b> | 5,627         | 224          | 5,404        | 8,600  | 3,200  |
| Nickel options           | 0            | 0            | <b>0</b>      | 0             | 0            | 0            | 0      | 0      |
| Zinc forward contracts   | 3,649        | 0            | <b>3,649</b>  | 377           | 404          | -27          | 17,800 | 700    |
| Zinc options             | 601          | 601          | <b>0</b>      | 6,502         | 1,374        | 5,128        | 0      | 27,300 |
| <b>Derivatives total</b> | <b>6,719</b> | <b>7,835</b> | <b>-1,117</b> | <b>12,881</b> | <b>3,224</b> | <b>9,658</b> |        |        |

| Long-term derivatives  |       |       |               |        |       |       |
|------------------------|-------|-------|---------------|--------|-------|-------|
| Zinc derivatives       | 0     | 0     | <b>0</b>      | 574    | 105   | 469   |
| Short-term derivatives | 6,719 | 7,835 | <b>-1,117</b> | 12,308 | 3,119 | 9,189 |

|                                     |              |               |
|-------------------------------------|--------------|---------------|
| <b>Balance assets, gross amount</b> | <b>6,364</b> | <b>10,945</b> |
|-------------------------------------|--------------|---------------|

|  |              |              |
|--|--------------|--------------|
| <b>Balance liabilities, gross amount</b> | <b>7,500</b> | <b>2,967</b> |
|--|--------------|--------------|

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

The importance of hedging instruments to the company's financial position and projected profitability for the next 12 months was high on 31 December 2019. The company had set up a cash flow hedge against a weakening US dollar with a hedging rate of approximately 50 percent of its projected estimated USD denominated net cash flow. Similarly, a hedging rate of approximately 70 percent was also applied to set up a hedge against falling nickel prices for the company's projected nickel deliveries for the following year utilising derivatives and fixed-term sales agreements. For planned zinc deliveries company has set up a hedge with a hedging rate of approximately 25 percent. In addition, in line with its hedging policy, the company had set up hedges for almost all of its nickel and zinc deliveries, which had been completed and reported under sales already earlier. As a result, the change in market prices after the closing of the accounts has hardly no effect on the deliveries reported as sales for the financial period 2019.

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## 2.9 Obligatory provisions

| Long-term Rehabilitation provision | Dec 31, 2019   | Dec 31, 2018   |
|------------------------------------|----------------|----------------|
| At the beginning of the period     | <b>158,363</b> | 159,412        |
| Increase                           | <b>0</b>       | 0              |
| Decrease                           | <b>965</b>     | 1,049          |
| At the end of the period           | <b>157,398</b> | 158,363        |
| <b>Long-term total</b>             | <b>157,398</b> | <b>158,363</b> |

| Estimated cost of the rehabilitation provision  | Dec 31, 2019   | Dec 31, 2018   |
|---|----------------|----------------|
| Rehabilitation of primary and secondary heaps, waste rock fields and gypsum pond area | <b>126,815</b> | 127,780        |
| Repairing of gypsum pond leak damage 2012   | <b>20,000</b>  | 20,000         |
| Rehabilitation and fencing of the open pit area                                       | <b>2,583</b>   | 2,583          |
| Environmental monitoring of the mining area after finishing rehabilitation            | <b>8,000</b>   | 8,000          |
| <b>Estimated rehabilitation costs total</b>   | <b>157,398</b> | <b>158,363</b> |

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## 2.10 Long-term loans from credit institutions

| Installment credit              | Dec 31, 2019   | Dec 31, 2018  |
|---------------------------------|----------------|---------------|
| At the beginning of the period  | <b>143</b>     | 201           |
| Increase                        | <b>355</b>     | 251           |
| Decrease                        | <b>-185</b>    | -309          |
| <b>At the end of the period</b> | <b>313</b>     | <b>143</b>    |
| <b>Leasing liabilities</b>      |                |               |
| At the beginning of the period  | <b>0</b>       | 0             |
| Increase                        | <b>14,525</b>  | 0             |
| Decrease                        | <b>-2,638</b>  | 0             |
| <b>At the end of the period</b> | <b>11,887</b>  | <b>0</b>      |
| <b>Long-term loans I</b>        |                |               |
| At the beginning of the period  | <b>92,991</b>  | 88,781        |
| Increase                        | <b>0</b>       | 0             |
| Decrease                        | <b>-28,434</b> | 0             |
| Valuation                       | <b>1,788</b>   | 4,210         |
| <b>At the end of the period</b> | <b>66,345</b>  | <b>92,991</b> |
| <b>Long-term loans II</b>       |                |               |
| At the beginning of the period  | <b>0</b>       | 0             |
| Increase                        | <b>62,592</b>  | 0             |
| Decrease                        | <b>0</b>       | 0             |
| Valuation                       | <b>-281</b>    | 0             |
| <b>At the end of the period</b> | <b>62,311</b>  | <b>0</b>      |
| <b>Long-term loans total</b>    | <b>140,857</b> | <b>93,135</b> |

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## Option and other special rights

| pcs  | Dec 31, 2019     | Dec 31, 2018     |
|--|------------------|------------------|
| Batch 1<br>Maximum number of shares to be issued | <b>566,712</b>   | 566,712          |
| Batch 2<br>Maximum number of shares to be issued | <b>244,265</b>   | 244,265          |
| Batch 3<br>Maximum number of shares to be issued | <b>244,264</b>   | 244,264          |
| Batch 4<br>Maximum number of shares to be issued | <b>140,190</b>   | 0                |
| Batch 5<br>Maximum number of shares to be issued | <b>93,460</b>    | 0                |
| <b>At the end of the period</b>                  | <b>1 288,891</b> | <b>1 055,241</b> |

The subscription period for the first lot is 10 February 2017–31 December 2022, for the second lot 9 November 2017–31 December 2023, and for the third lot 22 November 2018 – 31 December 2023.

New lots were granted during the financial period 2019. The subscription period for the lot four is 10 May 2019 – 31 December 2023 and for the lot five 17 July 2019 – 31 December 2023.

The options can be transferred to the permitted transferees. Both the direct and indirect pledging of options are prohibited. The subscription price agreed for the option lots 1-3 is 10 percent higher and for the lots 4-5 15 percent higher than the subscription price at the time of the closing of the financing arrangements implemented in 2017 and 2018.

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## 2.11 Deferred tax liabilities

|                          | Dec 31, 2019 | Dec 31, 2018 |
|--------------------------|--------------|--------------|
| Deferred tax liabilities | 0            | 1596         |

## 2.12 Specifications of Group liabilities

| Short-term liabilities to group companies | Dec 31, 2019 | Dec 31, 2018 |
|---|--------------|--------------|
| Trade payables                            |              |              |
| Finnish Minerals Group                    | 281          | 112          |
| <b>Total</b>                              | <b>281</b>   | <b>112</b>   |

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## 2.13 Short-term loans from financial institutions

| Instalment credit               | Dec 31, 2019 | Dec 31, 2018 |
|---------------------------------|--------------|--------------|
| At the beginning of the period  | <b>155</b>   | 130          |
| Increase                        | <b>185</b>   | 168          |
| Decrease                        | <b>-203</b>  | -143         |
| <b>At the end of the period</b> | <b>137</b>   | <b>155</b>   |

| Leasing liabilities             |               |          |
|---------------------------------|---------------|----------|
| At the beginning of the period  | <b>0</b>      | 0        |
| Increase                        | <b>5,912</b>  | 0        |
| Decrease                        | <b>-2,551</b> | 0        |
| <b>At the end of the period</b> | <b>3,360</b>  | <b>0</b> |

| Short-term loans                |               |          |
|---------------------------------|---------------|----------|
| At the beginning of the period  | <b>0</b>      | 0        |
| Increase                        | <b>30,000</b> | 0        |
| Decrease                        | <b>0</b>      | 0        |
| Valuation                       | <b>-1,566</b> | 0        |
| <b>At the end of the period</b> | <b>28,434</b> | <b>0</b> |

|   |               |            |
|---|---------------|------------|
| <b>Short-term loans from financial institutions total</b> | <b>31,931</b> | <b>155</b> |
|---|---------------|------------|

## 2.14 Current liabilities/Accruals and deferred income

|   | Dec 31, 2019  | Dec 31, 2018  |
|---|---------------|---------------|
| Interests                                     | <b>2 100</b>  | 1 790         |
| Salaries, fees and other personnel expenses   | <b>6 082</b>  | 5 609         |
| Other accrued liabilities and deferred income | <b>1 032</b>  | 4 015         |
| Derivative liabilities                        | <b>7 500</b>  | 2 967         |
| <b>Total</b>                                  | <b>16 715</b> | <b>14 381</b> |

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## 3. Notes to the income statement

### 3.1 Net sales

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| Industry distribution | 2019           | 2018           |
|-----------------------|----------------|----------------|
| Metal                 | <b>310,426</b> | 325,830        |
| <b>Total</b>          | <b>310,426</b> | <b>325,830</b> |

| Geographical distribution | 2019           | 2018           |
|---------------------------|----------------|----------------|
| Europe                    | <b>310,184</b> | 324,353        |
| Asia                      | <b>0</b>       | 401            |
| United States             | <b>242</b>     | 1,074          |
| Australia                 | <b>0</b>       | 2              |
| <b>Total</b>              | <b>310,426</b> | <b>325,830</b> |

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## 3.2 Cost of goods sold

| Raw materials and consumables        | 2019            | 2018     |
|--------------------------------------|-----------------|----------|
| Purchases during the financial year  | <b>-119,045</b> | -142,263 |
| Change in stocks                     | <b>-1,625</b>   | 3,883    |
| Raw materials and consumables, total | <b>-120,671</b> | -138,380 |
| External services                    | <b>-66,344</b>  | -73,699  |
| <b>Total</b>                         | <b>-187,015</b> | -212,079 |
| <b>Change in Inventory</b>           |                 |          |
| Change in Work in progress           | <b>15,583</b>   | 32,628   |
| Change in Finished goods             | <b>5,004</b>    | -5,937   |
| <b>Total</b>                         | <b>20,587</b>   | 26,691   |
| <b>Personnel expenses</b>            |                 |          |
| Wages and salaries                   | <b>-27,806</b>  | -26,489  |
| Pensions expenses                    | <b>-5,155</b>   | -4,965   |
| Other personnel expenses             | <b>-857</b>     | -1,018   |
| <b>Total</b>                         | <b>-33,818</b>  | -32,472  |
| <b>Depreciation</b>                  |                 |          |
| Depreciations                        | <b>-37,100</b>  | -29,606  |
| <b>Total</b>                         | <b>-37,100</b>  | -29,606  |
| <b>Other expenses</b>                |                 |          |
| Other Cost of goods sold expenses    | <b>-54,595</b>  | -54,085  |
| <b>Total</b>                         | <b>-54,595</b>  | -54,085  |
| <b>Cost of goods sold total</b>      | <b>-291,941</b> | -301,550 |

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## 3.3 Sales and marketing expenses

| Personnel expenses       | 2019        | 2018 |
|--------------------------|-------------|------|
| Wages and salaries       | <b>-806</b> | -703 |
| Pensions expenses        | <b>-147</b> | -133 |
| Other personnel expenses | <b>-25</b>  | -30  |
| <b>Total</b>             | <b>-979</b> | -866 |

| Depreciation | 2019     | 2018 |
|--------------|----------|------|
| Depreciation | <b>0</b> | 0    |
| <b>Total</b> | <b>0</b> | 0    |

| Other expenses                     | 2019        | 2018 |
|------------------------------------|-------------|------|
| Other Sales and Marketing expenses | <b>-412</b> | -494 |
| <b>Total</b>                       | <b>-412</b> | -494 |

|   |               |        |
|---|---------------|--------|
| <b>Sales and Marketing expenses total</b> | <b>-1,391</b> | -1,360 |
|---|---------------|--------|

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## 3.4 Administrative expenses

| Personnel expenses       | 2019          | 2018   |
|--------------------------|---------------|--------|
| Wages and salaries       | <b>-3,938</b> | -3,265 |
| Pensions expenses        | <b>-712</b>   | -559   |
| Other personnel expenses | <b>-140</b>   | -123   |
| <b>Total</b>             | <b>-4,790</b> | -3,947 |

| Depreciation | 2019        | 2018 |
|--------------|-------------|------|
| Depreciation | <b>-277</b> | -209 |
| <b>Total</b> | <b>-277</b> | -209 |

| Other expenses                | 2019           | 2018    |
|-------------------------------|----------------|---------|
| Other Administrative expenses | <b>-12,443</b> | -11,085 |
| <b>Total</b>                  | <b>-12,443</b> | -11,085 |

| Auditors' remunerations  | 2019        | 2018 |
|--------------------------|-------------|------|
| Audit                    | <b>-91</b>  | -82  |
| Certificates and reports | <b>0</b>    | 0    |
| Tax consultancy          | <b>0</b>    | 0    |
| Other services           | <b>-19</b>  | -50  |
| <b>Total</b>             | <b>-110</b> | -132 |

|                                      |                |         |
|--------------------------------------|----------------|---------|
| <b>Administrative expenses total</b> | <b>-17,621</b> | -15,373 |
|--------------------------------------|----------------|---------|

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## 3.5 Other operating expenses

| Personnel expenses       | 2019        | 2018 |
|--------------------------|-------------|------|
| Wages and salaries       | <b>-653</b> | -522 |
| Pensions expenses        | <b>-120</b> | -100 |
| Other personnel expenses | <b>-20</b>  | -22  |
| <b>Total</b>             | <b>-793</b> | -644 |

| Depreciation | 2019        | 2018 |
|--------------|-------------|------|
| Depreciation | <b>-215</b> | -4   |
| <b>Total</b> | <b>-215</b> | -4   |

| Other operating expenses | 2019          | 2018   |
|--------------------------|---------------|--------|
| Other operating expenses | <b>-5,428</b> | -4,740 |
| <b>Total</b>             | <b>-5,428</b> | -4,740 |

|                                       |               |        |
|---------------------------------------|---------------|--------|
| <b>Other operating expenses total</b> | <b>-6,437</b> | -5,388 |
|---------------------------------------|---------------|--------|

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## Personnel expenses total

| Personnel expenses       | 2019           | 2018    |
|--------------------------|----------------|---------|
| Wages and salaries       | <b>-34,107</b> | -31,209 |
| Pensions expenses        | <b>-6,300</b>  | -5,800  |
| Other personnel expenses | <b>-1,071</b>  | -1,203  |
| <b>Total</b>             | <b>-41,478</b> | -38,212 |

|   |             |      |
|---|-------------|------|
| <b>Wages and fees for Members of Board of Directors</b> | <b>-292</b> | -250 |
|---|-------------|------|

| Average number of company personnel |            |     |
|-------------------------------------|------------|-----|
| Salaries and senior salaried        | <b>223</b> | 209 |
| Blue-collar                         | <b>499</b> | 460 |
| <b>Total</b>                        | <b>722</b> | 669 |

## Depreciation, amortisation and impairment charges total

|  | 2019           | 2018    |
|--|----------------|---------|
| Intangible assets  | <b>-466</b>    | -383    |
| Other capitalised long-term expenditure                  | <b>-25</b>     | -25     |
|  | <b>-491</b>    | -408    |
| Tangible assets  |                |         |
| Buildings  | <b>-4,078</b>  | -4,169  |
| Machinery and equipment depreciation                     | <b>-20,844</b> | -18,502 |
| Machinery and equipment depreciation right-of-use assets | <b>-1,697</b>  | 0       |
| Other tangible assets depreciation                       | <b>-10,512</b> | -6,741  |
|  | <b>-37,131</b> | -29,411 |
| <b>Total</b>   | <b>-37,622</b> | -29,819 |

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## 3.6 Finance income and finance cost

| Financial income   | 2019         | 2018  |
|--|--------------|-------|
| Other interest and financial income                              | <b>1 155</b> | 1 696 |
| <b>Total</b>   | <b>1 155</b> | 1 696 |
| Other interest and financial income include exchange rate profit | <b>541</b>   | 1 064 |

Finance income for the financial period include interest income of approximately EUR 614 thousand and interest gains of EUR 50 thousand. Of the unrealised foreign exchange gains on finance income, EUR 491 thousand consists of the valuation of FX denominated loans and financial assets using the exchange rate at the balance sheet date. Correspondingly, of the comparative period's foreign exchange gains, EUR 1,064 thousand derives from the valuation of financial assets.

| Finance expenses  | 2019           | 2018    |
|---|----------------|---------|
| Other interest and financial income                                 | <b>-10,737</b> | -10,857 |
| <b>Finance expenses total</b>                                       | <b>-10,737</b> | -10,857 |
| Financial expenses to others include exchange rate losses           | <b>-1,901</b>  | -4,210  |
| Financial expenses include interest losses from leasing liabilities | <b>-370</b>    | 0       |

|  |               |        |
|--|---------------|--------|
| <b>Financial income and expenses total</b> | <b>-9,582</b> | -9,162 |
|--|---------------|--------|

The finance expenses for the financial period include EUR 8,836 thousand of interest and finance expenses and EUR 1,788 thousand of unrealised exchange rate losses related to the valuation of foreign currency loans at the exchange rate of the balance sheet date. The finance expenses for the comparative period include EUR 6,644 thousand of interest expenses and EUR 4,210 thousand of unrealised exchange rate losses on the valuation of FX denominated loans.

## 4. Notes to the commitments

Contingent and off-balance sheet liabilities

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| Amounts payable on rental and leasing agreements          | 31.12.2019   | 31.12.2018 |
|---|--------------|------------|
| No later than 1 year                                      | <b>434</b>   | <b>317</b> |
| Later than 1 year and no later than 5 years               | <b>890</b>   | <b>401</b> |
| <b>Total</b>  | <b>1,324</b> | <b>718</b> |
| Other liabilities   |              |            |
| Fixed assets serving as collateral for installment credit | <b>425</b>   | <b>307</b> |
| <b>Installment credit</b>                                 |              |            |
| No later than 1 year                                      | <b>137</b>   | <b>155</b> |
| Later than 1 year and no later than 5 years               | <b>313</b>   | <b>143</b> |
| <b>Total</b>  | <b>450</b>   | <b>298</b> |
| Bank deposit  | <b>150</b>   | <b>150</b> |

## Securities complying with environmental and mining permits

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|  |                  | Dec 31, 2019             | Dec 31, 2018             |
|--|------------------|--------------------------|--------------------------|
| Beneficiary  | Type of security | Amount of security total | Amount of security total |
| Kainuu Centre of Economic Development, Transport and the Environment;                  | Credit insurance | <b>122,030</b>           | <b>112,975</b>           |
| Security in accordance with permit decision no. 52/2013/1                              | Bank guarantee   | <b>1,500</b>             | <b>1,500</b>             |
| Security in accordance with permit decision no. 43/2014/2                              | Bank guarantee   | <b>6</b>                 | <b>6</b>                 |
| Security in accordance with permit decision no. 43/2015/1                              | Bank guarantee   | <b>100</b>               | <b>100</b>               |
| Security in accordance with permit decision no. 3/2017/1                               | Bank guarantee   | <b>50</b>                | <b>50</b>                |
| Security in accordance with permit decision no. 76/2017/1                              | Bank guarantee   | <b>100</b>               | <b>100</b>               |
| Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819 | Bank guarantee   | <b>100</b>               | <b>100</b>               |
| Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819 | Bank guarantee   | <b>35</b>                | <b>35</b>                |
| Decision of the Finnish Safety and Chemicals Agency Tukes, 30 June 2014, KaivNro: 2819 | Bank guarantee   | <b>50</b>                | <b>50</b>                |
| <b>Total</b>   |                  | <b>123,971</b>           | <b>114,916</b>           |
| Other securities   | Bank guarantee   | <b>2,453</b>             | <b>953</b>               |
| Real estate investments' VAT refund liability  |                  | <b>3,644</b>             | <b>5,366</b>             |
| Company mortgages  |                  | <b>320,000</b>           | <b>320,000</b>           |
| Real Estate Mortgage   |                  | <b>1,200,079</b>         | <b>1,200,079</b>         |
|  | Pledged          | <b>yes</b>               | <b>yes</b>               |

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## 5. Related party transactions

The key related parties of Terrafame Ltd include Suomen Malmijalostus Oy, 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 Board, CEO and Management Team members of the company, persons responsible for Terrafame Ltd's commercial agreements, and immediate family members of persons referred to here, as well as entities over which they or their immediate family members have control. Terrafame's related parties also include entities in which the Government of Finland exercises control or considerable influence. Terrafame has applied an exemption pursuant to which it only reports significant transactions with Government-related companies.

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

All business transactions between Terrafame Ltd and its related parties were market-conform.

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## Business transactions with related parties

| Goods and services sold      | 31.12.2019     | 31.12.2018 |
|------------------------------|----------------|------------|
| Associate and joint ventures |                |            |
| Other related party ventures | <b>338 086</b> | 325 953    |
| Ventures total               | <b>338 086</b> | 325 953    |
| <b>Total</b>                 | <b>338 086</b> | 325 953    |

| Goods ad services purchased  |               |        |
|------------------------------|---------------|--------|
| Other related party ventures | <b>32 120</b> | 29 250 |
| Ventures total               | <b>32 120</b> | 29 250 |
| <b>Total</b>                 | <b>32 120</b> | 29 250 |

| Credits                      |                |        |
|------------------------------|----------------|--------|
| Other related party ventures | <b>121 733</b> | 75 000 |
| Ventures total               | <b>121 733</b> | 75 000 |
| <b>Total</b>                 | <b>121 733</b> | 75 000 |

## Board of Directors' proposal for the measures to be taken owing to the loss for the financial period

Terrafame Ltd's result for the financial period shows a loss of EUR 15,207,562.45. The Board of Directors proposes to the Annual General Meeting that no dividend be distributed, and that the loss be retained in shareholders' equity.

In Sotkamo, February 20, 2020

### Lauri Ratia

Chairman of the Board

### Matti Hietanen

### Esa Lager

### Tuomo Mäkelä

### Jesus Fernandez

### Emmanuel Henry

### Riitta Mynttinen

### Joni Lukkaroinen

CEO

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## Auditor's confirmation

A report on the audit has been issued today.

In Sotkamo, February 24, 2020

KPMG Oy Ab

Authorised Public Accountants

**Antti Kääriäinen**

APA

## Auditor's Report

To the Annual General Meeting of Terrafame Oy

### Report on the Audit of the Financial Statements

#### Opinion

We have audited the financial statements of Terrafame Oy (business identity code 2695013-5) for the year ended 31 December 2019. The financial statements comprise the balance sheet, income statement, cash flow statement and notes.

In our opinion, the financial statements give a true and fair view of the company's financial performance and financial position in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements.

#### Basis for Opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the Auditor's Responsibilities for the Audit of Financial Statements section of our report. We are independent of the company in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director are responsible for the preparation of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the Managing Director are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the company or cease operations, or there is no realistic alternative but to do so.

## Auditor's Responsibilities for the Audit of Financial Statements

Our objectives are to obtain reasonable assurance on whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

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- Conclude on the appropriateness of the Board of Directors' and the Managing Director's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

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## Other Reporting Requirements

### Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises information included in the report of the Board of Directors. Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the information included in the report of the Board of Directors and, in doing so, consider whether the information included in the report of the Board of Directors is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. Our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the report of the Board of Directors is consistent with the information in the financial statements and the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement in the information included in the report of the Board of Directors, we are required to report this fact. We have nothing to report in this regard.

Sotkamo, Finland, 24 February 2020

**Antti Kääriäinen**

Authorized Public Accountant

The background of the slide features a close-up, black and white photograph of industrial machinery, likely a printing press or a similar manufacturing process. The machinery consists of various metal components, including rollers, gears, and structural frames. The lighting is dramatic, highlighting the textures and metallic surfaces of the equipment. The image is partially obscured by a large white diagonal shape that frames the central text.

# **Terrafame**

## **Financial Review**

**2019**

March 4, 2020