

## Terrafame's net sales in 2021 increased to EUR 378.4 million - The ramp-up of the battery chemicals plant continues

(The financial information presented about Terrafame Ltd in this bulletin consists of unaudited FAS figures. The figures in brackets refer to the corresponding period of the previous year unless otherwise stated.)

### October-December 2021 in brief

- Ramp-up of the battery chemicals plant continued and net sales of the battery chemicals business were EUR 17.4 (0) million.
- Net sales of the metal intermediates business were EUR 99.4 (103.7) million. Decrease in the net sales was mainly due to increasing internal sales to the battery chemicals plant.
- The average price of nickel on the London Metal Exchange was 19,821 (15,930) USD/t, which is 24% higher than in the comparison period and the nickel sulphate premium (SPOT China) on LME price was USD 2,264 (1,908) per nickel tonne in average.
- The average price of zinc on the London Metal Exchange was 3,364 (2,628) USD/t, with an increase of 28% year-on-year.
- The average EUR/USD exchange rate for the fourth quarter was 1.14 (1.19 in the fourth quarter of 2020).
- Total net sales were EUR 116.8 (103.7) million, which is 12.6% higher than in the comparison period.
- Terrafame increased the environmental provision in the Financial Statements for 2021 from EUR 159.1 million to EUR 232 million. The increase had a non-recurring negative impact of EUR -72.9 million on the financial result for the year 2021. The change in the environmental provision did not impact the cash flow.
- EBITDA excluding non-recurring items (change in the environmental provision) was EUR 12.9 (17.7) million, or 11.0% (17.1) of net sales. The impact of the battery chemicals business on EBITDA was around EUR -8 million. EBITDA after non-recurring items was EUR -60.0 (17.7) million.
- The operating result excluding non-recurring items (change in the environmental provision) was EUR -2.3 (6.8) million. The operating result after non-recurring items was EUR -75.3 (6.8) million.
- Free cash flow from operating activities was EUR 26,5 (39.7) million.

### 2021 in brief

- The production ramp-up of the battery chemicals plant began in June and net sales of the battery chemicals business were EUR 27.1 (0) million.
- Net sales of the metal intermediates business were EUR 351.3 (338.3) million.
- The average price of nickel on the London Metal Exchange was 18,469 (13,789) USD/t, which is 34% higher than in the comparison period and the nickel sulphate premium (SPOT China) on LME price was USD 2,979 (1,086) per nickel tonne in average.
- The average price of zinc on the London Metal Exchange in the review period was 3,006 (2,267) USD/t, with an increase of 33% year-on-year.
- Total net sales were EUR 378.4 (338.3) million, representing an increase of 11.8% year-on-year. The increase in net sales was limited by the impact of metal price hedging, particularly during the second half of the year.
- The negative impact of the increased provision on the operating result for 2021 is EUR -72,9 million. The change in the environmental provision did not impact the cash flow.

- EBITDA excluding non-recurring items (change in the environmental provision) was EUR 24.2 (23.8) million, or 6.4% (7.0) of net sales. The impact of the battery chemicals business on EBITDA was around EUR 20 million. EBITDA after non-recurring items was EUR -48.8 (23.8) million.
- The operating result excluding non-recurring items (change in the environmental provision) was EUR -22.4 (-16.9) million. The operating result after non-recurring items was EUR -95.3 (-16.9) million.
- Free cash flow from operating activities was EUR -43.2 (13.8) million.
- The combined rolling 12-month lost-time injury frequency rate (LTIFR) of Terrafame and all its partners was 8.9 (9.8).

## Financial and production key figures

	2021 Q4	2020 Q4	Change, %	2021	2020	Change, %
<b>Financial figures</b>						
Net sales, EUR million	116,8	103.7	12.6%	378.4	338.3	11.8%
Battery chemicals business	17.4	-	n.a.	27.1	-	n.a.
Metal intermediates business	99.4	103.7	-4.1%	351.3	338.3	3.8%
EBITDA, EUR million <sup>(1)</sup>	-60-0	17.7	n.a.	-48.8	23.8	n.a.
EBITDA, excl. non-recurring items, EUR million <sup>(1)</sup>	12-9	17.7	-27.1%	24.2	23.8	1.7%
Operating result, EUR million <sup>(1)</sup>	-75.3	6.8	n.a.	-95.3	-16.9	n.a.
Operating result, excl. non-recurring items, EUR million <sup>(1)</sup>	-2.3	6.8	n.a.	-22.4	-16.9	n.a.
Work in progress, EUR million	204-0	190.2	7.3%	204.0	190.2	7.3%
Free cash flow, EUR million <sup>(2)</sup>	26-5	39.7	-33.3%	-43.2	13.8	n.a.
Capital expenditure, total, EUR million <sup>(3)</sup>	17-0	53.1	-68.0%	117.9	201.8	-41.6%
Sustaining capex, EUR million	11.4	8.3	37.3%	60.3	39.5	52.7%
Development and growth capex, EUR million	5.6	44.8	-87.5%	57.6	162.3	-64.5%
Equity, EUR million	384,8	442.1	-13.0%	384.8	442.1	-13.0%
Total assets, EUR million	1,006.7	918.5	9.6%	1,006.7	918.5	9.6%

1) The ramp-up of the battery chemicals plant had a negative impact of around EUR -20 million on EBITDA and the operating result excl. non-recurring items in 2021.

2) Free cash flow from operating activities after sustaining capital expenditure = EBITDA - change in net working capital - sustaining capital expenditure.

3) Division of investments between categories was amended retroactively for 1-9/2021. The impact of the amendment on the free cash flow of January - September 2021 was EUR -15,5 million.

## Joni Lukkaroinen, CEO of Terrafame:

"The year 2021 at Terrafame was the year when the battery chemicals plant operations were started. The construction of the plant, which took almost three years, was completed in summer 2021, and the ramp-up of the production began. The market situation was good for the completion of new capacity. The sales of electric vehicles doubled in 2021, compared with 2020, and a total of more than 6.5 (3.2) million electric vehicles were sold worldwide. More than half of these were sold in China, which continues to lead the way in the EV market but also in Europe, the sales of passenger cars and light commercial vehicles increased by almost 70% from 2020, totalling around 2.2 (1.3) million units.

With the start-up of its battery chemicals plant, the company was changed to a producer of special chemicals. Terrafame's strategy was also further specified. Terrafame's strategic goal is to enhance low-carbon mobility with responsible battery chemicals. Sustainability, traceability, a small carbon footprint and reliable deliveries in the supply chain are the core strengths of our strategy.

During the ramp-up phase, net sales from battery chemicals business operations amounted to EUR 27.1 (0) million during the second half of 2021. Net sales from metal intermediates business totalled EUR 351.3 (338.3) million. Total net sales were EUR 378.4 (338.3) million in 2021, with an increase of 11.8% year-on-year. The increase in net sales was limited by the impact of metal price hedging, particularly during the second half of the year.

In late 2021, we decided to increase the environmental provision on the balance sheet from EUR 159.1 million to EUR 232 million. The decision was based on an outlook that the permit authorities will change the grounds for the environmental guarantee included in the environmental permit to reflect the separate permit decision issued earlier in 2021 concerning our primary leaching area, meaning a significant increase in the guarantee level. We are expecting to receive a permit decision during March 2022.

The increase in the environmental provision had a significant impact on the result, and our EBITDA decreased to EUR -48.8 (23.8) million during 2021. EBITDA without the change in the environmental provision was EUR 24.2 (23.8) million, or 6.4% (7.0) of net sales. The ramp-up of the battery chemicals plant had a negative impact of around EUR -20 million on EBITDA.

Terrafame's battery chemicals production is fully integrated to its own mining operations and metal processing, in which the key strategic goal is for the company to be among the world's top quartile of nickel producers in terms of cost-effectiveness. In terms of the company's future, its metal intermediates business must also be efficient and profitable. In January 2022, we initiated a cost savings programme, which aims at EUR 10 million annual savings and improving cost competitiveness and profitability of the company. As an outcome of the negotiations, it has been decided that 65 person-years will be reduced on production-related and financial grounds and due to the reorganisation of operations. Out of these, 42 will be termination of employment contracts.

The continuous improvement programme, which started in late 2020, has begun to be reflected in our safety performance, especially among our own personnel, whose accident frequency rate (LTIFR) was 5.5 (8.3) per million hours worked. Development of our partner companies' safety culture has not been satisfactory, which is why we are continuing to pay special attention to the development of their safety culture."

## Market environment

### Electric vehicle and battery markets

The global sales of electric vehicles has continued to be strong. In total more than 6.5 (3.2) million electric vehicles were sold globally in 2021. The amount of sold EVs doubled compared with 2020. The comparison figure for 2020 is affected by the decrease in production volumes caused by the coronavirus pandemic.

The sales of electric vehicles continued strong in China, where the sales of passenger cars and light duty vehicles in 2021 increased by 136% compared with 2020 and reached in total 3.2 EVs. The sales of EVs almost doubled also in the United States and Canada. In Europe, the sales of passenger cars and light duty vehicles totalled around 2.2 (1.3) EVs, which is almost 70% more than in 2020.

Including all electric vehicle categories, the sales-weighted average pack size was 45.3 kWh (46.6 kWh) in 2021. The market share of nickel-rich NCM 811 batteries increased to around 18% in 2021 from around 8% in 2020. The market share of NCM 622 batteries was around 24% in 2021 (around 36% in January–August 2020). The market share of NCM 712 batteries, which were introduced in the summer of 2020, was around 3% in December 2021.

## Nickel and zinc

The prices of base metals on the London Metal Exchange (LME) in the review period were markedly higher than in the corresponding period of 2020.

In 2021 the nickel sulphate premium (SPOT China) on LME price was USD 2,979 (1,086) per nickel tonne in average. In the fourth quarter of 2021 the nickel sulphate premium was USD 2,264 (1,908) per nickel tonne in average.

The average market price of nickel in 2021 was 18,469 (13,789) USD/t, which is 34% higher than in the previous year. The average market price of nickel in the fourth quarter of 2021 was 19,821 (15,930) USD/t, which is 24% higher than in the comparison period and the highest quarterly quotation since the first quarter of 2012. The price of nickel increased by 3.6% from the third quarter of 2021 (19,125).

The average market price of zinc in 2021 was 3,006 (2,267) USD/t, which is 33% higher than in the corresponding period of 2020. The average market price of zinc in the fourth quarter 2021 was 3,364 (2,628) USD/t, which is 28% higher than in the comparison period and the highest quotation since the first quarter of 2018. The price of zinc increased by 13% from the third quarter of 2021 (2,991).

The total combined nickel stocks of the London Metal Exchange (LME) and the Shanghai Futures Exchange (SHFE) stood at 106,313 tonnes at the end of 2021. The stocks decreased significantly, compared with the end of 2020 (266,091). The decrease in stock levels was particularly strong during the second half of 2021. The stock level at the end of the year corresponds to demand for around 2 (6) weeks. Zinc stocks stood at 257,919 tonnes at the end of 2021, corresponding to demand for around 1 week (1). Stock levels increased somewhat from the end of 2020 (231,154), but decreased slightly from the end of the third quarter of 2021 (261,177).

## Currency exchange rate

The average EUR/USD exchange rate for the fourth quarter of 2021 was 1.14 (1.19 in the fourth quarter of 2020). The EUR/USD rate strengthened during the fourth quarter compared with the third quarter of 2021 (1.18). The EUR/USD rate was 1.17 in the third quarter of 2020.

## Production

Nickel production was 28,582 (28,740) tonnes, representing a decrease of 0.6% year-on-year. Zinc production was 54,353 (55,100) tonnes, with a decrease of 1.4% year-on-year. Production levels of nickel and zinc remained at the same level as in 2020. The production ramp-up of the battery chemicals plant began in June.

In the fourth quarter, nickel production was 7,976 (8,600) tonnes, representing a decrease of 7.3% year-on-year. Nickel production had been particularly strong in the fourth quarter of 2020. Zinc production was 15,193 (15,037) tonnes, with an increase of 1.0% year-on-year. Ramp-up of the battery chemicals plant continued in the fourth quarter.

## Net sales and financial performance

Net sales were EUR 378.4 (338.3) million in 2021, representing an increase of 11.8% year-on-year. The increase in net sales was limited by the impact of metal price hedging, particularly during the second half of the year.

The ramp-up of the new battery chemicals plant began in June, followed by the deliveries of the first product batches to customers' product approval processes. The battery chemicals plant project of the company as well as the launch of the battery chemicals business was delayed from the original schedule due to the coronavirus pandemic.

In 2021, net sales of the battery chemicals business were EUR 27.1 million and net sales of the metal intermediates business were EUR 351.3 million. In 2020, total net sales were gathered from the metal intermediates business.

Total net sales in the fourth quarter were EUR 116.8 (103.7) million, representing an increase of 12.6% year-on-year. The increase in net sales was limited by the impact of metal price hedging.

In the fourth quarter, net sales for the battery chemicals business were EUR 17.4 million and net sales of the metal intermediates business were EUR 99.4 million. In the fourth quarter of 2020, total net sales were gathered from the metal intermediates business.

Terrafame increased the environmental provision in the Financial Statements for 2021 from EUR 159.1 million to EUR 232 million. The increase had a non-recurring negative impact of EUR -72.9 million on the financial result for the year 2021. The change in the environmental provision did not have an impact on the cash flow.

EBITDA excluding non-recurring items was EUR 24.2 (23.8) million in 2021, or 6.4% (7.0) of net sales. The impact of the battery chemicals business on EBITDA excluding non-recurring items was around EUR -20 million. Reported EBITDA for the financial year 2021 was EUR -48.8 (23.8) million.

In the fourth quarter, EBITDA excluding non-recurring items was EUR 12.9 (17.7) million, or 11.0% (17.1) of net sales. The impact of the battery chemicals business on EBITDA excluding non-recurring items was around EUR -8 million. Reported EBITDA in the fourth quarter was EUR -60.0 (17.7) million.

The operating result excluding non-recurring items was EUR -22.4 (-16.9) million. The reported operating result for the financial year 2021 was EUR -95.3 (-16.9) million.

In the fourth quarter, the operating result excluding non-recurring items was EUR -2.3 (6.8) million. The reported operating result for the fourth quarter was EUR -75.3 (6.8) million.

In 2021, free cash flow from operating activities\* was EUR -43.2 (13.8) million.

In the fourth quarter, free cash flow from operating activities\* was EUR 26.5 (39.7) million.

\* Free cash flow from operating activities after sustaining capital expenditure = EBITDA – change in net working capital – sustaining capital expenditure.

## Capital expenditure

Terrafame examines capital expenditure in two categories: investments in productivity improvement and capacity growth and investments in sustaining production.

Capital expenditure, EUR million	2021	2020	Change, %
Sustaining capital expenditure	60.3	39.5	52.7
Investments in productivity improvement and capacity growth	57.6	162.3	-64.5
<b>Total capital expenditure</b>	<b>117.9</b>	<b>201.8</b>	<b>-41.6</b>

Capital expenditure totalled EUR 117.9 (201.8) million in 2021. Of this total, EUR 57.6 (162.3) million was used to improve productivity and increase capacity, and EUR 60.3 (39.5) million was used to sustain production.

The investments in capacity growth in 2021 were related to the construction of the battery chemicals plant and the extension of sections 2 and 3 of the primary leaching area by 150 metres. The ramp-up of production at the battery chemicals plant started in June.

The most significant investment projects related to sustaining production were the expansion of the Kuusilampi open pit, construction of a new section of the waste rock area, the purchase of spare parts for mining equipment and the ore crushing lines, and the increase of the pond capacity related to bioleaching and water management.

## Financing arrangements

In 2021, Terrafame drew out a total instalment of around EUR 92 million of the equity financing (EUR 115 million in total) negotiated with Finnish Minerals Group and Galena in August 2020. After these withdrawals, Terrafame has used the entire financing package.

The amounts presented in the following table cover all the financial items received by Terrafame from its shareholders during its time of operation, as well as debt financing items converted into equity.

	Equity financing	Converted equity	Debt financing	Total financing
<b>Finnish Minerals Group</b>	537.3			537.3
<b>Galena Asset Management</b>	225.7			225.7
<b>Trafigura</b>		20.2	160.6	180.8
<b>Sampo Group</b>		6.8	38.8	45.6
<b>Total</b>	763.0	27.0	199.4	989.4

Currency-denominated items have been translated into euros using the rate prevailing on the closing date of the review period.

In September 2021, Terrafame signed a USD 90 million unsecured financing arrangement with an international bank. The four-year arrangement involves an instalment-free period of 12 months. Due to the start of battery chemicals production and sales, the company estimates that its working capital requirements will increase by around EUR 100 million. The signed financing arrangement is according to plan and an important step to finance the growth of working capital. By the end of 2021, a total of USD 20 million was drawn out within the arrangement.

The company also refinanced its environmental guarantee with an international insurance syndicate in September. The agreement is for four years, totalling EUR 161 million and it covers the collateral required by the existing environmental permit.

## Shares and shareholders

Terrafame has one series of shares. At the end of 2021, the company had 4,988,040 shares. Its share capital was EUR 2.0 million, and its shareholders' equity was EUR 348.8 (442.1) million.

On 31 December 2021, Suomen Malmijalostus Oy ('Finnish Minerals Group', 'FMG') owned 67.1%, Galena Funds owned 31.1% and Sampo plc owned 1.8% of Terrafame. Share arrangements carried out during 2021 are presented in the following table:

	Galena 2	Galena 3	Galena 4	Sampo	FMG	Trafigura	Total
<b>Holding 31 December 2020</b>	14.1 %	17.2 %	0.0 %	1.9 %	66.8 %	0.0 %	100.0 %
<b>31 December 2020</b>	602,952	733,233	0	79,422	2,847,556	0	4,263,163
<b>Changes in the number of shares during the financial year:</b>							
<b>Equity funding</b>	0	0	215,181	0	501,686	0	
<b>Share transfer</b>							
<b>Payment of interest and arrangement fees in shares</b>	0	0	0	8,010	0	0	
<b>31 December 2021</b>	602,952	733,233	215,181	87,432	3,349,242	0	4,988,040
<b>Holding 31 December 2021</b>	12.1 %	14.7 %	4.3 %	1.8 %	67.1 %	0.0 %	100.0 %

Finnish Minerals Group's holding may decrease to no lower than 50.1% in the future, if Trafigura, Galena and Sampo exercise their option rights and the interest on the loans is paid in shares. In such a case, the holding of Galena and Trafigura would be around 45.0%, and that of Sampo would be around 5.0%.

## Personnel and partner network

Nearly 1,800 people were regularly employed on Terrafame's industrial site during 2021. Terrafame had 879 (870) employees at the end of the review period. At the end of the year, the battery chemicals plant and its support functions (such as laboratory and logistics) employed altogether 157 persons. Through the two-year apprenticeship training programme leading to a vocational qualification in the process industry and organised by Terrafame in cooperation with Kainuu Vocational College and Educational Consortium OSAO, Terrafame employed 23 persons at the end of the year. In the summer, the company provided around 80 people with a summer job.

An average of 883 (1,166) people employed by contractors and subcontractors worked on the industrial site during the review period (FTE). The reduction in the number of external personnel was mainly due to a decrease in the number of people working for the battery chemicals plant construction project. In 2021, the battery chemicals plant construction project involved up to 368 (534) employees (FTE).

## Sustainability

Sustainability is an integral part of Terrafame's business operations. The company is committed to the UN Global Compact principles in its operations. The company also respects the ILO Declaration on Fundamental Principles and Rights at Work in its operations. In addition, Terrafame's employees and partners, as well as its suppliers of services and materials, must comply with its Code of Conduct and the principles of its sustainability policy. Policy implementation is supported by Terrafame's certified management system (ISO 9001, ISO 45001 and ISO 14001) and more detailed operating guidelines.

### Sustainability programme

Terrafame's strategic goal is to enhance low-carbon mobility with responsible battery chemicals.

Terrafame's sustainability work is guided by its sustainability programme, which began in 2020 and sets ambitious numerical and qualitative targets for operational development for 2020–2024. The themes and targets of the sustainability programme are linked to the UN Sustainable Development Goals as far as applicable. The implementation of the sustainability programme is monitored annually in the Sustainability Review which is available on the company's website at [www.terrafame.com](http://www.terrafame.com) > [Terrafame Ltd > Responsibility](#). The Sustainability Review also presents key figures related to the company's sustainability themes, including climate-related emission indicators (Scope 1, Scope 2, Scope 3). The next Sustainability Review will be published in the summer of 2022.

Terrafame is committed to compliance with the operating principles of the Finnish Network for Sustainable Mining. Terrafame has carried out self-assessments in accordance with the Finnish Towards Sustainable Mining (TSM) Standard since 2017. In late 2021, the company conducted a third-party verification of its TSM self-assessment. The verified results were in line with the company's self-assessment. The system applies a five-step scale (C-B-A-AA-AAA, where C = complies with the regulations, and AAA = shows excellence). On that scale, the most important aspects of the company's environmental safety (dam safety and water management) are at a good level (A).

### ***Competence development***

Highly competent employees are a key resource for Terrafame.

In 2021, the focuses of employees' competence development included the operation and maintenance of the battery chemicals plant and the development of the company's safety and management culture, as well as production reliability skills. The annual personal performance and development appraisals were conducted during the first half of the year.

The company's personnel strategy focuses on capacity building, competence development and skilful supervisory work, as well as on building effective internal cooperation across the company.

In 2021, the company continued to invest in personnel development. The new battery chemicals plant provided employees with opportunities for job rotation and career development. In addition to recruitment, employees were hired through apprenticeship training programmes. The employees of the battery chemicals plant were provided with intensive training to support the safe and efficient start-up of the plant.

Terrafame encourages its employees to develop their knowledge and skills through training. During the year, 174 employees studied alongside work to complete vocational qualifications in the process industry, the automotive industry, maintenance and the electrical and automation sector, as well as special vocational qualifications in production supervision. Other training activities also continued at a solid level, although less face-to-face training was provided than before because of the coronavirus situation. In addition to vocational training, extensive training was provided in occupational safety, chemicals and first aid, for example. Supervisory work was also further developed through training and coaching. The total amount of training provided was 6.1 (3.1) days per person. The total amount of supervisory training was 1 (1.5) days per person.

### ***Cooperation with educational institutions***

Terrafame has had three apprenticeship training groups aiming for a vocational qualification in the process industry. Two of these groups completed their studies as planned during 2021. The total number of graduates was 44, most of whom continue to work for the company under employment relationships that are valid until further notice. A total of 23 students are participating in the apprenticeship training programme in the group that started in the spring of 2020. Apprenticeship training enables Terrafame not only to train new skilled personnel, but also to further develop the professional skills of its existing employees.

Cooperation with educational institutions was continued to ensure the availability of highly competent people. Close cooperation was continued especially with Kainuu Vocational College and Kajaani University of Applied Sciences. The most significant results of the cooperation include the regional reinforcement of training in electrical and automation engineering and the process industry, for example. The concrete forms of cooperation include practical training, summer jobs, theses and teacher visits.

### ***Operating culture development***

In 2021, the most significant investment in the development of the company's operating culture was the ROTI project, which focuses on developing the safety and management culture and production reliability. The project strengthens a culture of continuous improvement through learning, inclusion and a systematic approach. All employees – supervisors and production staff in particular – participated in the project in practice through safety discussions and safety and shift meetings, for example.

Safety and the well-being of our employees are important continuous themes in our operations. In 2021, because of the coronavirus pandemic, we continued to focus on health security in particular. In developing well-being at work, our focuses included supporting the working capacity of our highly experienced employees, developing supervisory work and maintaining recreational activities. The company offers extensive occupational healthcare services. Various exposures and working capacity risks are monitored systematically and continuously. Early support and alternative work models were actively applied in 2021. Workplace and ergonomics studies were targeted at the various task areas throughout the year. Employees' sickness absences accounted for an average of 4.3 (4.8) % of the theoretical regular working hours. To maintain mental and physical well-being, the company provides its employees with sporting and cultural benefits, as well as subsidised meals at work.

### ***Partners***

An average of around 150 long-term partner companies operated on Terrafame's industrial site during 2021.

Terrafame requires all its providers of services and suppliers of materials to operate on the basis of respect for human rights principles and values. Its partners also comply with its Code of Conduct, which determines the general responsibilities and obligations to be followed on the industrial site. These are further specified by the company's policies and guidelines. Partners are expected to share the company's values, and to be committed to high-quality operations, safety and continuous improvement of efficiency. In addition, all partners, service providers and subcontractors must comply with Terrafame's sustainability policy. The Code of Conduct and the sustainability policy are available on the company's website at [www.terrafame.com](http://www.terrafame.com) > Terrafame Ltd > Responsibility.

Terrafame assesses the operations of its partner companies through regular audits and evaluations conducted during the contract period, after the completion of work and when selecting new partners through competitive bidding. A total of 8 (3) supplier audits were carried out in 2021. In addition, a total of 16 supplier audits were conducted during the year using the tool introduced in June 2020. During 2021, four separate partner meetings were held to discuss the company's operating principles, the principles of the UN Global Compact initiative and the zero tolerance rules adopted by the company as part of its enhanced safety work in 2020. Representatives from more than 100 partner companies were present at the partner meetings. This also includes the contractors related to the construction project of the battery chemicals plant.

### ***Safety at work***

Safety is one of the core values at Terrafame, and the continuous development of a safety culture has been one of the main priorities since the company was established. 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. We aim for zero accidents.

<b>Occupational safety indicators, 12-month LTIFR1</b>	<b>2021</b>	<b>2020</b>	<b>Change, %</b>
Accident frequency rate, Terrafame employees	5.5	8.3	-33.7
Accident frequency rate, partner companies	11.8	10.6	11.3
Total accident frequency rate on the industrial site	8.9	9.8	-9.2

The ROTI project, which started in late 2020, has begun to be reflected in the company's safety performance. Accidents involving Terrafame's employees decreased markedly during 2021. Our partner companies' performance has not been satisfactory, which is why we have paid special attention to the development of their safety culture. In late 2021, the safety bonus for Terrafame's employees was restructured so that it also takes account of accidents involving partner companies' employees. This change encourages all our employees to address any unsafe ways of working in their area, including cases that concern an employee of a partner company. The revised safety bonus was introduced at the beginning of 2022. We closely monitor our partners' occupational safety performance, and we have also established separate incentive and sanction systems for them.

### ***The environment and environmental permits***

Terrafame seeks to continuously improve its environmental performance and reduce its environmental impact.

#### **Environmental monitoring**

Terrafame monitors the state of the environment on the industrial site in accordance with the permit decisions and the monitoring programme approved by the authorities. Our annual environmental monitoring reports are available in Finnish on the company's website [www.terrafame.fi](http://www.terrafame.fi) > [Ympäristö > Ympäristövaikutukset ja -tarkkailu > Ympäristötarkkailuraportit](#). The reports for 2021 are expected to become available in March 2022.

Sulphate loading of natural waterways is one of the most significant environmental impacts of Terrafame's production. The metal and sulphate concentrations of discharge waters, as well as sulphate loading, were in line with the environmental permit conditions in 2021. In September, there was one deviation related to the release of discharge waters which was reported to the local authorities and resolved immediately.

The company has developed its operations in such a way that sulphate is recycled more effectively back into the process. The goal is to recycle 100% of the sulphate that ends up in water treatment from the production process back into the solution circulation. The two-line run model that was introduced at the centralised water treatment plant in 2020 enables the more efficient separation of collected waters. Only low-sulphate collection waters, to the extent that they are not used as raw water, are treated and directed out of the area.

<b>Key indicators related to discharge waters</b>	<b>Actual 2021</b>	<b>Actual 2020</b>
Purified discharge waters, Mm <sup>3</sup>	8.86	7.94
Sulphate in discharge waters, tonnes (permitted quota 16,300 t)	14,492	13,067

Sulphate from process back into the solvent circulation, % (target 100%)	100	70
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Terrafame will report its key indicators related to environmental emissions in the summer of 2022 on its website at [www.terrafame.com](http://www.terrafame.com) > Terrafame Ltd > Reporting > Sustainability Review.

### Permits

On 20 January 2021, the Regional State Administrative Agency for Northern Finland granted an environmental permit to Terrafame for its battery chemicals plant.

On 22 June 2021, the Supreme Administrative Court issued its decision on the environmental permit for Terrafame's KL2 waste rock area. With its decision, the Supreme Administrative Court rejected the appeals filed against the decision issued by the Vaasa Administrative Court on 16 December 2019, meaning that the decision of the Vaasa Administrative Court remains valid. The environmental permit for the KL2 waste rock area is valid until the case concerning Terrafame's main permit has been resolved by means of a final or executable decision.

On 24 June 2021, the Supreme Administrative Court issued its decision on the uranium recovery permit granted by the government to Terrafame on 6 February 2020. The Supreme Administrative Court confirmed the permit granted by the government. The company filed a permit application for uranium recovery under the Nuclear Energy Act (990/1987) to the Finnish Government on 30 October 2017.

On 2 July 2021, the Regional State Administrative Agency for Northern Finland granted an environmental permit to Terrafame for the extension of the primary leaching area. The production use of the primary leaching area was expanded by 150 metres in sections 2 and 3 during the summer of 2021.

Terrafame has a permit process in progress with regard to the renewal of its master permit with the Regional State Administrative Agency for Northern Finland. The application was submitted in August 2017.

### Significant events after the end of the financial period

Terrafame announced on 4 March 2020 that it increases the environmental provision in the Financial Statements for 2021 from EUR 159.1 million to EUR 232 million. The impact of the increased provision on the operating result for 2021 is EUR -72,9 million. The increase in the provision is based on an outlook that the collateral for environmental restoration will increase in the new environmental permit. Terrafame estimates that it will receive a new environmental permit concerning all its operations in March 2022.

The change negotiations for the beginning of 2022 managed to find an annual saving of EUR 10 million to ensure economically sustainable business. The implementation of the savings programme is proceeding systematically.

### Outlook for 2022

Terrafame has several significant customer negotiations and product approval processes in progress related to battery chemicals.

The ramp-up of production in the battery chemicals plant continues systematically.

The geopolitical situation in Europe is expected to have an increasing impact on Terrafame's production costs.

The price development of base metals and battery chemicals involves significant uncertainty even though the price development in the beginning of the year has been positive.

Terrafame continues to increase efficiency of its operations and improve profitability.

**For further information, please contact:**

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A Finnish-language webcast for the media will be held on 4 March 2022 at 1 pm. Joni Lukkaroinen, CEO of Terrafame, will review the company's result at the event. The webcast can be followed live at [terrafame.videosync.fi/tammi-joulukuu-2021](https://terrafame.videosync.fi/tammi-joulukuu-2021). Questions can be submitted using the form at the bottom of the page.

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Terrafame reduces the carbon footprint of transport by delivering responsibly produced battery chemicals to the global battery industry. One of the world's largest production lines for chemicals used in electric car batteries is located on Terrafame's industrial site. The plant is capable of producing nickel sulphate for around 1 million electric cars per year. The carbon footprint of the nickel sulphate produced by Terrafame is among the smallest in the industry.

Terrafame's integrated, unique and energy-efficient production process from the mine to battery chemicals is located on a single industrial site. It provides customers with a transparent, traceable and truly European battery chemical supply chain.

Terrafame Ltd was founded in 2015. Its net sales in 2021 were EUR 378 million. Around 1,500 people work on its industrial site, half of whom are employees of partner companies.