

**>> TERRAFAME LTD  
INTERIM REPORT Q3 2018**

## **Terrafame's net sales in the third quarter totalled EUR 86.0 million - positive EBITDA, operating result and cash flow**

### **Key figures in July–September 2018** (Q3 2017 reference period in parentheses)

- 7,326 tonnes of nickel (5,506) and 16,530 tonnes of zinc (12,242) were produced.
- Net sales totalled EUR 86.0 million (63.9).
- EBITDA was EUR 12.9 million (47.6).
- EBITDA without change in value of work in progress (WIP) was EUR 3.8 million (-7.9).
- The value of work in progress was EUR 163.2 million (111.9).

### **Key events in July–September 2018**

- By the end of period, the cumulative net sales exceeded the net sales of full year 2017. EBITDA and cash flow were positive. The operating profit totalled EUR 4.7 million.
- New quarterly records were reached in the production of the main products at the metals production plant. 7,326 tonnes of nickel and 16,530 tonnes of zinc were produced.
- The third hydrogen sulphide production line was taken into use. The new line will increase the production capacity of the metals production plant and improve the reliability of the plant's production process.
- In the battery chemicals plant project, technological alternatives for the main processes were explored, detailed engineering was continued, and earthwork construction was started.
- At the end of September, the amount of water stored at the site was 1.5 million cubic metres, corresponding to the target level of 1–3 million cubic metres. Due to a good water balance, the discharge pipe for purified water was not used during 9 August – 5 September 2018.

## Financial and production figures

|   | 2018<br>Q3        | 2018<br>Q2 | 2017<br>Q3 | 2018<br>Q1-Q3 | Year<br>2017 |
|---|-------------------|------------|------------|---------------|--------------|
| <b>Financial figures</b>                                    |                   |            |            |               |              |
| Net sales, EUR million                                      | 86.0              | 76.7       | 63.9       | 248.4         | 220.0        |
| EBITDA, EUR million   | 12.9              | 11.1       | 47.6       | 33.8          | 13.6         |
| EBITDA excl. change in WIP, EUR million                     | 3.8               | 3.3        | -7.9       | 8.7           | -74.3        |
| Operating profit/loss, EUR million                          | 4.7               | 3.4        | 42,5       | 10.5          | -6.2         |
| Work in progress <sup>1</sup> , EUR million                 | 163.2             | 154.0      | 111.9      | 163.2         | 138.0        |
| Capex, EUR million  | 16.4 <sup>2</sup> | 21.1       | 28.3       | 53.0          | 92.1         |
| Equity, EUR million   | 310.2             | 304.6      | 245.7      | 310.2         | 295.6        |
| Total assets, EUR million                                   | 616.2             | 616.9      | 557.2      | 616.2         | 618.5        |
| Change in working capital, EUR million                      | -5.3              | 8.8        | 59.1       | 17.6          | 85.6         |
| Sustaining capex, EUR million                               | 5.5               | 7.8        | 2.9        | 18.2          | 14.9         |
| Free cash flow after sust. capex <sup>3</sup> , EUR million | 12.7              | -5.5       | -14.3      | -2.1          | -89.6        |
| <b>Ore processing</b>                                       |                   |            |            |               |              |
| Ore mined, million tonnes                                   | 10.3              | 10.8       | 9.0        | 31.3          | 35.1         |
| Nickel to heaps, tonnes                                     | 10,630            | 11,791     | 13,192     | 34,655        | 46,200       |
| Zinc to heaps, tonnes                                       | 23,594            | 24,803     | 25,697     | 72,693        | 91,827       |
| <b>Metals production</b>                                    |                   |            |            |               |              |
| Nickel produced, tonnes                                     | 7,326             | 5,920      | 5,506      | 19,667        | 20,864       |
| Zinc produced, tonnes                                       | 16,530            | 14,096     | 12,242     | 45,634        | 47,205       |

1) Work in progress (WIP) is calculated based on the cost value as of 31 December 2017.

2) EUR 10.9 million of capital expenditure was allocated to improving productivity and capacity.

3) Free cash flow after sustaining capex = EBITDA – Change in working capital – Sustaining capex.

## CEO Joni Lukkaroinen's review

“During the third quarter of 2018, the average prices of our main products nickel and zinc decreased in the global market. Compared to the previous quarter, the average price of nickel decreased by 8.4% in dollars and 6.1% in euros during July–September. Correspondingly, the average price of zinc decreased by 18.5% in dollars and 16.5% in euros. The prices of copper and cobalt also decreased. The price development was largely affected by concerns in the global market caused by the import duties set by the United States.

During the third quarter, we reached the production level that was set as our ramp-up target in autumn 2015. At the same time, a new quarterly record in both nickel and zinc production was reached at the metals production plant. This contributed to the company's net sales increasing to EUR 86.0 million and last year's net sales was already exceeded. I am particularly pleased with the cash flow turning positive. In addition, the company's EBITDA without change in work in progress

was positive, along with the company's operating result. This was the fifth consecutive quarter with profitable business for Terrafame.

We have also continued the detailed engineering and earthwork construction of the battery chemicals plant as well as the preparation work for the permit processes. Terrafame's Board of Directors has now made a positive investment decision to build the plant. According to our estimates, the plant will increase the company's net sales by approximately EUR 200 million annually. The construction of the battery chemicals plant and the launch of its operations will have significant positive economic impacts on Kainuu and all of Finland that are visible in overall production, employment, added value and tax income. With our battery chemicals production, we are contributing to the electrification of transport as well as to reducing carbon dioxide emissions.

During July–September, three injuries resulting in lost time occurred, and our rolling lost-time injury frequency for the past 12 months was 7.3. We want to improve occupational safety and have continued and intensified our work in the area. We will continue to pay more attention to the occupational safety requirements of different work roles.”

## Market development

During the third quarter of 2018, the average price for nickel was USD 13,266 per tonne, which was 8.4% lower than in the previous quarter (Q2 2018: 14,476) and 26.0% higher than the year before (Q3 2017: 10,528). The key use of nickel continued to be stainless steel production, and its use in electric vehicle lithium-ion batteries is also increasing rapidly. Nickel price development during the past quarter was affected by the recent challenges related to trade between the United States and China.

The combined nickel stock levels of the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) have decreased during every quarter since the first quarter of 2016. During July–September 2018, the combined nickel stock levels of LME and SHFE continued to decrease by approximately 50,000 tonnes, totalling less than 250,000 tonnes at the end of September (end of Q2: 300,000).

During the third quarter of 2018, the average price for zinc was USD 2,537 per tonne, which was 18.5% lower than in the previous quarter (Q2 2018: 3,112) and 14.4% lower than the year before (Q3 2017: 2,963). The price development was driven by the effects on the general development of the global economy caused by the import duties set by the United States on steel and aluminium as well as several other products. The Chinese market also showed signs of decreasing demand for zinc.

The combined zinc stock levels of LME and SHFE continued to decrease during July–September. Stock levels decreased by approximately 100,000 tonnes, totalling approximately 230,000 tonnes at the end of September (end of Q2: 330,000).

The average prices of both copper and cobalt decreased. During July–September, the average price for copper was USD 6,105 per tonne, which was 11.2% lower than in the previous quarter (Q2 2018: 6,872) and 3.8% lower than the year before (Q3 2017: 6,349). During July–September, the average

price for cobalt was USD 65,724 per tonne, which was 25.0% lower than in the previous quarter (Q2 2018: 87,667) but 11.0% higher than the year before (Q3 2017: 59,237).

The price performance of the US dollar was favourable for Terrafame's business. During the third quarter, the dollar strengthened by 2.4% in relation to the euro when compared to the second quarter. The average rate during July–September was 1.1629 (Q2 2018: 1.1915).

## Capital expenditure

Terrafame's capital expenditure totalled EUR 16.4 million during the third quarter (Q3 2017: 28.3 and year 2017: 92.1). EUR 10.9 million of the total was allocated to improving productivity and capacity.

The most significant capital expenditure items for improving productivity and capacity were the detailed engineering of the battery chemicals plant and excavation work related to the preparing of the project, construction of the foundations for block 2 in the waste rock area, finishing the construction of production block 4 in the secondary bioleaching area as well as the alteration and maintenance work of the hydrogen sulphide plant 2.

## Permits and environmental safety

Preparing the reporting related to the Environmental Impact Assessment of the battery chemicals plant was continued. Preparation for an EIA programme for the final disposal of water treatment sludges, temporarily stored at the site by the previous operator, was also commenced. Supplements to the environmental permit application covering the company's entire operation were delivered to the Northern Finland Regional State Administrative Agency (RSAA), along with an updated permit application text. Terrafame's current environmental permits will remain valid until a new environmental permit comes into effect.

At the end of September, the amount of water stored at the site totalled 1.5 million cubic metres (Q3 2017: 2.5 Mm<sup>3</sup>). For most of the third quarter, production ran mostly in a closed loop and the discharge pipe was not used during 9 August – 5 September 2018. A total of 0.6 million cubic metres of purified water was discharged from the site during July–September (Q3 2017: 1.5 Mm<sup>3</sup>). Both the sulphate load, which was 598 tonnes (Q3 2017: 2,477 t), and metal concentrations of the discharge water remained clearly below the permit limits. The sulphate load of Terrafame's operations was at a historically low level during the quarter.

During the third quarter, the laboratory-scale research on the recovery of rare earth elements and uranium was also completed.

## Personnel and occupational safety

At the end of September 2018, Terrafame employed 665 people (end of Q3 2017: 685). In addition, approximately 70 partner companies employing 590 people operated at the site during July–September (Q3 2017: 681).

During the third quarter, three lost-time injuries occurred among Terrafame’s personnel. One of these, a fall from a maintenance platform during the crushing plant’s shutdown, was classified as serious. The rolling lost-time injury frequency for the past 12 months was 7.3 (2017: 3.5).

## Events following the reporting period

- The regional economic impacts of the construction and operations of the battery chemicals plant were published as part of the plant’s Environmental Impact Assessment reporting.
- The major technology agreements were made with key equipment suppliers.
- On 24 October 2017, Terrafame’s Board of Directors made the decision to invest in building the battery chemicals plant in Sotkamo, Finland.

## Near-term outlook

Terrafame reached during the third quarter the production level that was set as its target in autumn 2015. After the three-year ramp-up stage, attention will be paid particularly to operational efficiency, continuous improvement and increasing profitability.

Detailed engineering and earthwork construction related to the battery chemicals plant project will be continued. The company’s goal is to submit an environmental permit for the plant in early 2019.

*Terrafame Ltd’s financial information for 2018 presented in this release are unaudited FAS figures.*

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Terrafame Ltd is a Finnish multi-metal company producing nickel, zinc, cobalt and copper at its mine and metals production plant located in Sotkamo, Finland. We are now planning the processing of our main product, nickel-cobalt sulphide, into nickel and cobalt sulphates suitable for electric vehicle batteries. Our aim is to conduct environmentally sustainable, safe and profitable operations. [www.terrafame.com](http://www.terrafame.com)