

**>> TERRAFAME LTD.
INTERIM REPORT Q3 2017**

Terrafame's third quarter net sales totalled EUR 63.9 million - profitability improved clearly

Key figures in July–September 2017 (Q2 2017 reference period in parentheses)

- 13,192 tonnes of nickel (11,038) and 25,697 tonnes of zinc (23,149) were stacked on the primary heap.
- 7,197 tonnes of nickel (5,361) and 13,027 tonnes of zinc (12,657) were leached.
- 5,506 tonnes of nickel (5,176) and 12,242 tonnes of zinc (11,204) were produced.
- Net sales totalled EUR 63.9 million (47.2).
- EBITDA without change in value of work in process (WIP) was EUR -7.9 million (-24.2).
- EBITDA was EUR 47.6 million (-32.9).
- The net realisable value of work in process (WIP) was EUR 111.9 million (56.3).
- 12-month rolling lost-time injury frequency, meaning the number of injuries per one million person-hours worked, was 3.5 (4.4).

Key events in July–September 2017

- The metals production plant reached the highest quarterly production volumes in the plant's history, 5,506 tonnes of nickel and 12,242 tonnes of zinc produced during a quarter. A new yearly record was achieved in zinc production. In January–September, a total of 33,237 tonnes of zinc has been produced.
- In mine production, the best results to date were achieved in the stacking volumes of nickel and zinc. 17.4 million tonnes of ore has been stacked on the primary heaps during the last four quarters.
- The amount of water stored at the site was at a safe level of 2.5 million cubic metres at the end of September (end of Q2: 3.7 million cubic metres). Approximately half of the yearly sulphate discharge quota had not been used at the end of the quarter.
- At the end of August, Terrafame submitted a new environmental permit application concerning all its operations to the Regional State Administrative Agency of Northern Finland.

Events following the reporting period

- In October, Terrafame's Board of Directors decided that Terrafame shall apply the government for a permit to recover uranium, in accordance with the Finnish Nuclear Energy Act. The permit application will be submitted in the weeks to come. If the government grants the permit, Terrafame estimates that uranium recovery could commence towards the end of 2019.

- The cooperation negotiations, which began in September, were completed on 16 October 2017. As a result, Terrafame will cut a total of 47 jobs. Due to production and financial reasons as well as the reorganisation of operations, 37 employees will be laid off.

Financial and production figures

	2017 Q3	2017 Q2	2016 Q3	2017 Q1–Q3	2016 Q1–Q3
Finances					
Net sales, EUR million	63.9	47.2	21.2	152.4	53.4
EBITDA without change in WIP*, EUR million	-7.9	-24.2	-40.6	-65.4	-138.8
EBITDA, EUR million	47.6	-32.9	-38.5	-3.7	-136.4
Operating profit/loss, EUR million	42.5	-37.3	-42.5	-17.3	-146.6
Investments, EUR million	28.3	24.9	18.1	69.7	64.1
Ore processing					
Ore to primary heap, million tonnes	4.9	4.5	4.3	13.3	10.1
Nickel to heap, tonnes	13,192	11,038	10,894	34,300	25,285
Zinc to heap, tonnes	25,697	23,149	20,612	69,085	48,155
Bioleaching					
Nickel leached, tonnes	7,197	5,361	3,046	17,644	6,699
Zinc leached, tonnes	13,027	12,657	8,720	36,064	17,171
Metals production plant					
Nickel produced, tonnes	5,506	5,176	2,370	15,469	5,679
Zinc produced, tonnes	12,242	11,204	6,328	33,237	13,895

*WIP = work in process

CEO Joni Lukkaroinen's review

“During Terrafame’s first two years of operation, we have systematically increased production and done a lot of development work. After the most significant efforts in ramp-up, we have begun to move to a phase of established industrial operations. We can now focus on streamlining the cost-efficiency of the overall operations.

Compared to the second quarter of 2017, the average prices of nickel and zinc in the global market were at a better level in the third quarter, which had a positive effect on our result. Meanwhile, the development of the average exchange rate of the dollar against the euro continued unfavourable. Compared with the second quarter, the average prices of both nickel and zinc increased by 14.1% in the third quarter, and the average exchange rate of the dollar against the euro decreased by 6.6%. Nickel stock levels were still high globally whereas zinc stock levels continued to decrease.

Our mining production volumes, i.e. the volumes of ore mining and processing, were at target level in the third quarter. The bioleaching of metals at the primary and secondary areas continued at a good level. At the metals production plant, we reached new records in the quarterly production volumes of nickel and zinc in the plant's history. The planned autumn maintenance stoppage, which began at the end of September, limited the production and sales volumes somewhat in the third quarter.

Unit costs per nickel tonne decreased as predicted in the third quarter. Thanks to efficient operations and the whole personnel's strong cost awareness, we stayed well within the cost budget.

In occupational safety, our personnel has continued to develop new work culture with excellent results. At the end of September, our 12-month rolling lost-time injury frequency, meaning the number of injuries per one million person-hours worked, was 3.5. Our personnel also achieved a new record of 131 consecutive days without injuries resulting in absence.

During the past months, we have continued to explore possibilities of upgrading of nickel as well as plant-scale trial operations aimed at the commercialization of copper. Towards the end of October, we decided to submit a permit application on the recovery of uranium to the government. We estimate that the uranium recovery could begin at the end of 2019."

Market development

The global market price of nickel increased in July–August. During the third quarter, the average price of nickel was USD 10,528 per tonne, which is 14.1% higher than in the second quarter of 2017 (Q2 2017: 9,225) and 2.6% higher than in the third quarter of 2016 (Q3 2016: 10,265). Key factors affecting nickel price fluctuation were the strong growth of nickel demand in the production of stainless steel in China, as well as nickel producers' announcements of mine production cuts.

The combined nickel stock levels of the London Metal Exchange (LME) and the Shanghai Futures Exchange (SHFE) have decreased every quarter since the first quarter of 2016. However, in the third quarter of 2017, the decrease stopped, and stock levels remained at the same level as in the second quarter. At the end of September, the combined stock levels of LME and SHFE totalled approximately 438,000 tonnes.

During the third quarter of 2017, the average price of zinc was USD 2,963 per tonne, which was 14.1% higher than in the second quarter of 2017 (Q2 2017: 2,596) and 31.4% higher than during the third quarter of 2016 (Q3 2016: 2,255). The price of zinc remained at a good level, supported by the long-continuing decrease of zinc stock levels in particular.

The combined zinc stock levels of LME and SHFE continued to decrease by approximately 38,000 tonnes during the third quarter of 2017 and totalled approximately 318,000 tonnes.

Investments

In the third quarter of 2017, Terrafame's investments totalled EUR 28.3 million and EUR 69.7 million in Q1–Q3. (Q2 2017: 24.9 and year 2016: 84.3).

The most significant investments of the third quarter include the construction work of the fourth secondary bioleaching heap and a new waste rock area as well as the construction of a third hydrogen sulphide production line.

Environmental safety

During the third quarter, Terrafame discharged purified water to the northern discharge route only using the discharge pipe. The last time the company has used the purified water quota for the southern discharge route was in spring 2016. Between 6 August and 13 August 2017, no water was discharged from the mine area. At the end of the third quarter, the amount of water stored at the mine totalled 2.5 million cubic metres which was within the target level of 1–3 million cubic metres (end of Q2 2017: 3.7 million cubic metres).

The sulphate concentration of water discharged from the area remained at approximately half the limit of the environmental permit. The metal concentrations were approximately a tenth of their limits. Both the reverse osmosis plant and the centralised water treatment plant were utilised in the removal of sulphate from the waters in the mining site. With the reverse osmosis plant, it was possible to direct 1,394 tonnes of sulphate (Q2 2017: 1,104) back to the bioleaching heaps with the reject in July–September. At the beginning of August, Terrafame announced that due to a human error, at most 2,800 cubic metres of unpurified water had been discharged towards Pirttipuro.

Towards the end of September, the Regional State Administrative Agency of Northern Finland made two environmental permit decisions related to Terrafame. One decision concerned the separate waste rock area KL2 and the other concerned the water treatment precipitates, temporarily stored in the site, and their repository. The permit authority granted a permit to use sections 1–4 of the waste rock area. Regarding the water treatment precipitates, the authority stated that the so-called geotubes with their precipitates may be repositied in an area south of the open pit.

At the end of August, Terrafame submitted an environmental permit application concerning all its operations to the Regional State Administrative Agency of Northern Finland. Thus, the permits which came into effect with the decision of the Supreme Administrative Court in May will remain valid until the new permit takes effect. The company has had two EIA procedures in 2016–2017 in connection with the permit process. The Kainuu ELY Centre, acting as the contact authority, provided its statement on the report section of the water management EIA at the end of July, stating that it met the adequacy requirement of the Act on Environmental Impact Assessment Procedure. At the end of August, the ELY Centre announced that the production EIA was ready for the submission of opinions and statements. In the beginning of July, the ELY Centre also gave a statement on the supplement to the production EIA programme that Terrafame submitted in the spring related to smelter operations in connection with the potential further processing of nickel.

Personnel and occupational safety

At the end of September, Terrafame employed 685 people (end of Q2 2017: 757 including summer employees). In addition, approximately 70 partner companies employing approximately 681 people operated at the site in the third quarter (end of Q2 2017: 693).

In July–September, one lost-time injury occurred at Terrafame. In total, three lost-time injuries have occurred during 2017, resulting in a total of ten days of absence. Terrafame's lost-time injury frequency, meaning the number of injuries per one million person-hours worked, was 3.5 for the past 12 months at the end of September (end of Q2 2017: 4.4). The target for this year is below 5.0 (lost-time injury frequency in 2016: 8.4).

In the beginning of September, the company began cooperation negotiations to find a solution to adapt personnel resources for the final phase of the ramp-up. The negotiations were concluded on 16 October 2017 and, as a result, Terrafame will cut a total of 47 jobs. Due to production and financial reasons as well as the reorganisation of operations, 37 employees will be laid off.

Near-term outlook

The ramp-up and stabilisation of Terrafame's operations continue. The target is to further increase the production and delivery volumes of nickel and zinc. Profitability will be improved systematically by focusing on operational cost efficiency.

Terrafame intends to submit a permit application to the government in the weeks to come to recover uranium. If the government grants the permit, Terrafame estimates that uranium recovery could commence towards the end of 2019. The company also expects to conduct laboratory research concerning uranium and rare earth metals. For this, a permit application was submitted to the Finnish Radiation and Nuclear Safety Authority in June 2017. In addition the company will study two alternative options to upgrade the nickel product. The options include NiFe alloy for stainless steel production as well as nickel and cobalt sulphates for battery applications.

Terrafame Ltd.'s financial information for 2017 presented in this release are unaudited FAS figures.

Further information:

Joni Lukkaroinen, CEO of Terrafame Ltd., [joni.lukkaroinen\(at\)terrafame.fi](mailto:joni.lukkaroinen@terrafame.fi)

Katri Kauppila, Chief Communications Officer, Terrafame Ltd., [katri.kauppila\(at\)terrafame.fi](mailto:katri.kauppila@terrafame.fi)

Terrafame Ltd. is a Finnish multi-metal company producing nickel, zinc and cobalt at its mine and metals production plant located in Sotkamo. Our aim is to conduct environmentally sustainable, safe and profitable operations.