

# » Interim report Q1 2018

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CEO

2 May 2018



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**Terrafame**



# » Metals have a key role in the revolution of transportation and energy



Electricity production and distribution



Energy storage



Charging infrastructure



Electric vehicles

## »» Key events in January-March



- EBITDA EUR 9,8 million.
- Sustaining capital expenditure EUR 5.4 million and EUR 10.1 million capital expenditure in productivity improvement and capacity expansions.
- Stacking of ore continued at a steady level of 4.5 million tonnes.
- 6,421 tonnes of nickel and 15,008 tonnes of zinc were produced.

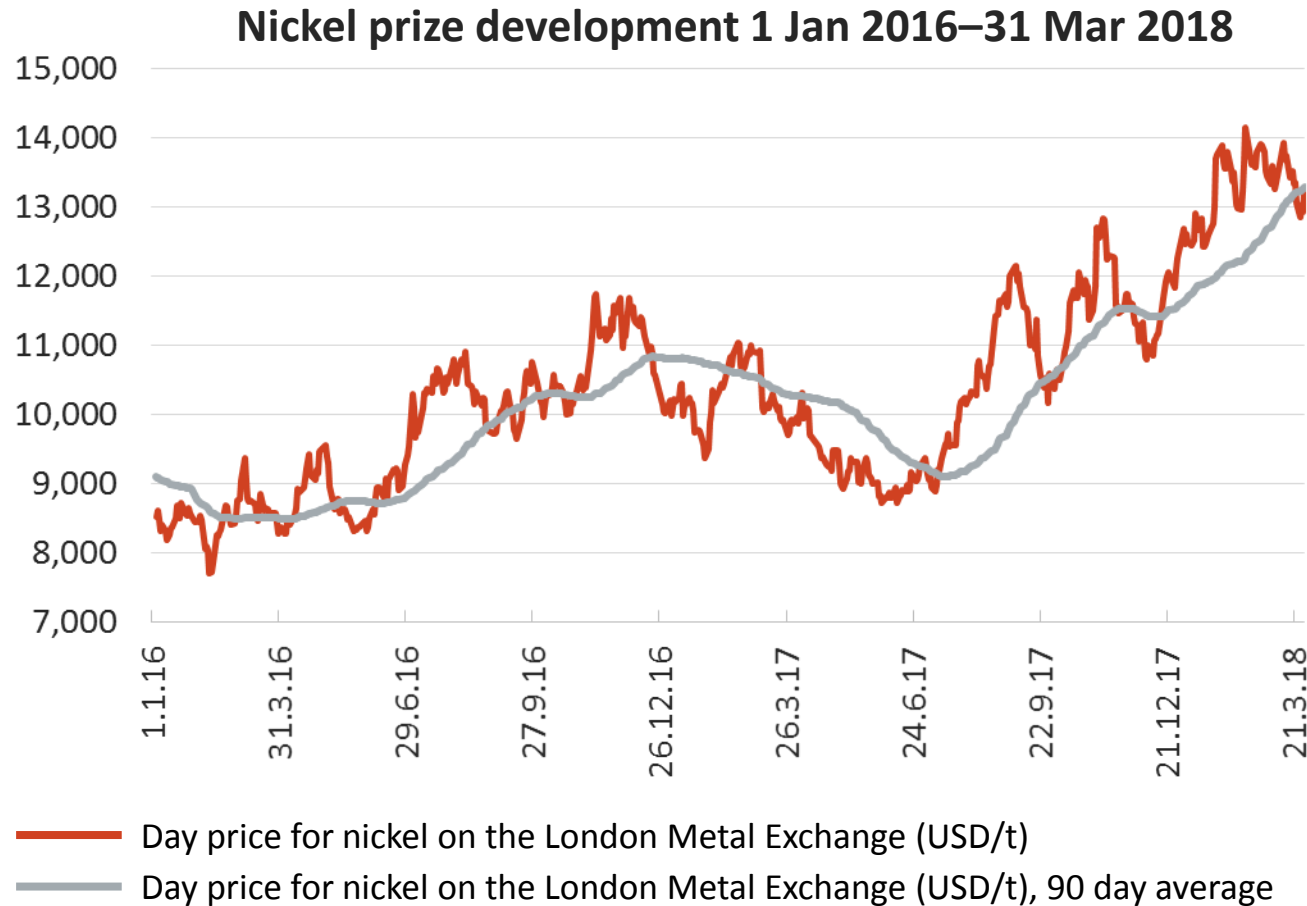
Read our responsibility and annual report at [www.terrafame.com/annualreport](http://www.terrafame.com/annualreport)

**Terrafame**

>> Metal prices developed positively



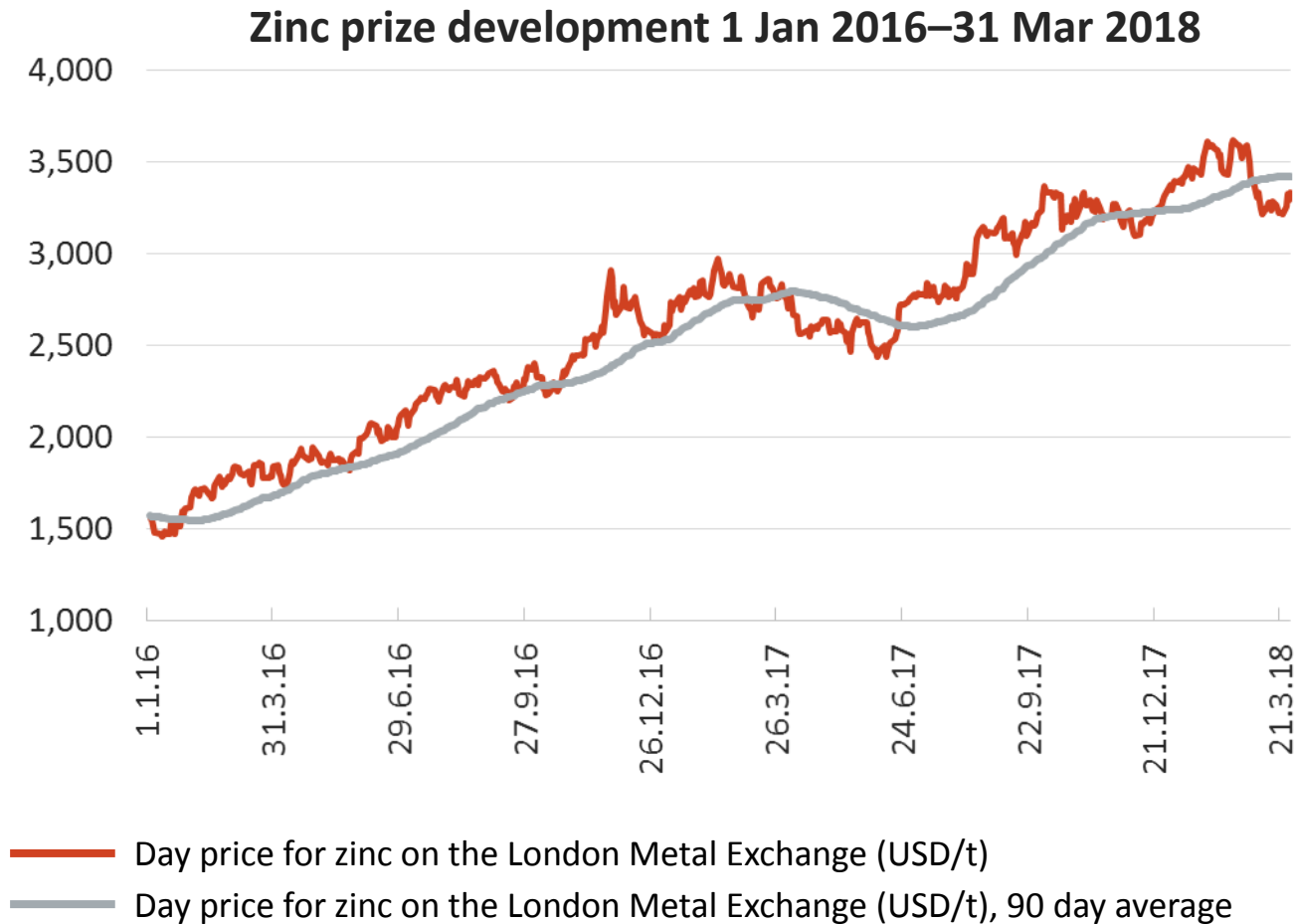
## » Nickel price strengthening continued and stocks levels lowered



Data source: Metal Bulletin  
LME = London Metal Exchange  
SHFE = Shanghai Futures Exchange

- In Q1, average price was 13,277 USD/t – 14.6% higher than in Q4.
- Compared with 2017 Q1, average price was 29.3% higher.
- The combined stock levels of LME and SHFE decreased by 43,000t in Q1 and were 368,000t at end of March.
- Key factors affecting price development were the growth in nickel demand for stainless steel production and for Asia’s battery industry.

## » Zinc price increase continued but stock levels rose



- In Q1, average price was 3,421 USD/t – 5.7% higher than in Q4.
- Compared with 2017 Q1, average price was 23.1% higher.
- The combined stock levels of LME and SHFE increased by 113,000t in Q1 and were 363,000t at end of March.
- Import duties set by the United States on steel and aluminium caused some volatility in the market.

Data source: Metal Bulletin  
LME = London Metal Exchange  
SHFE = Shanghai Futures Exchange

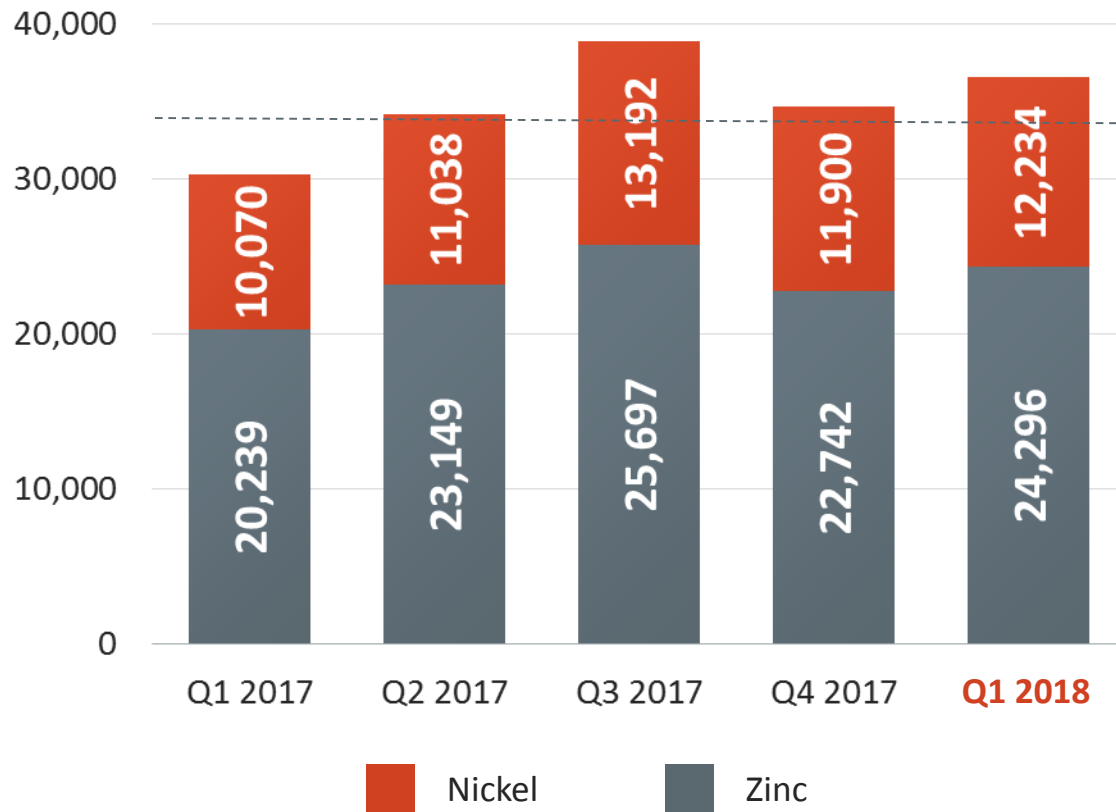




» Production volume very close to the target level

## » Mining and stacking of ore continued at the target level

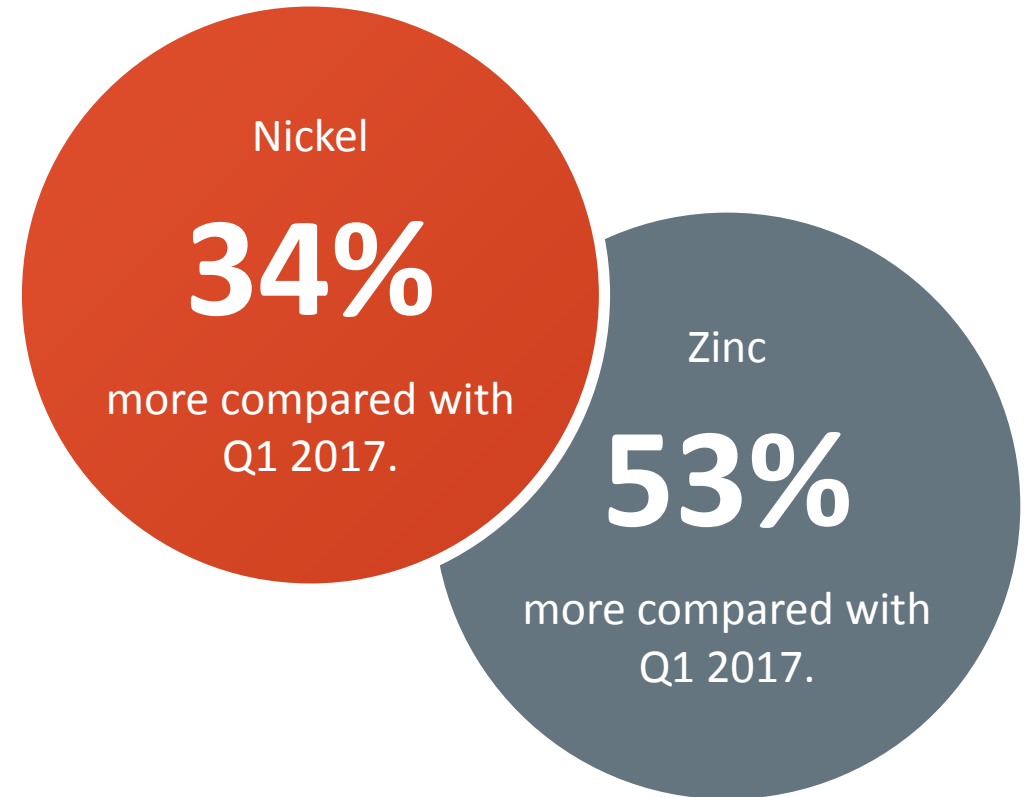
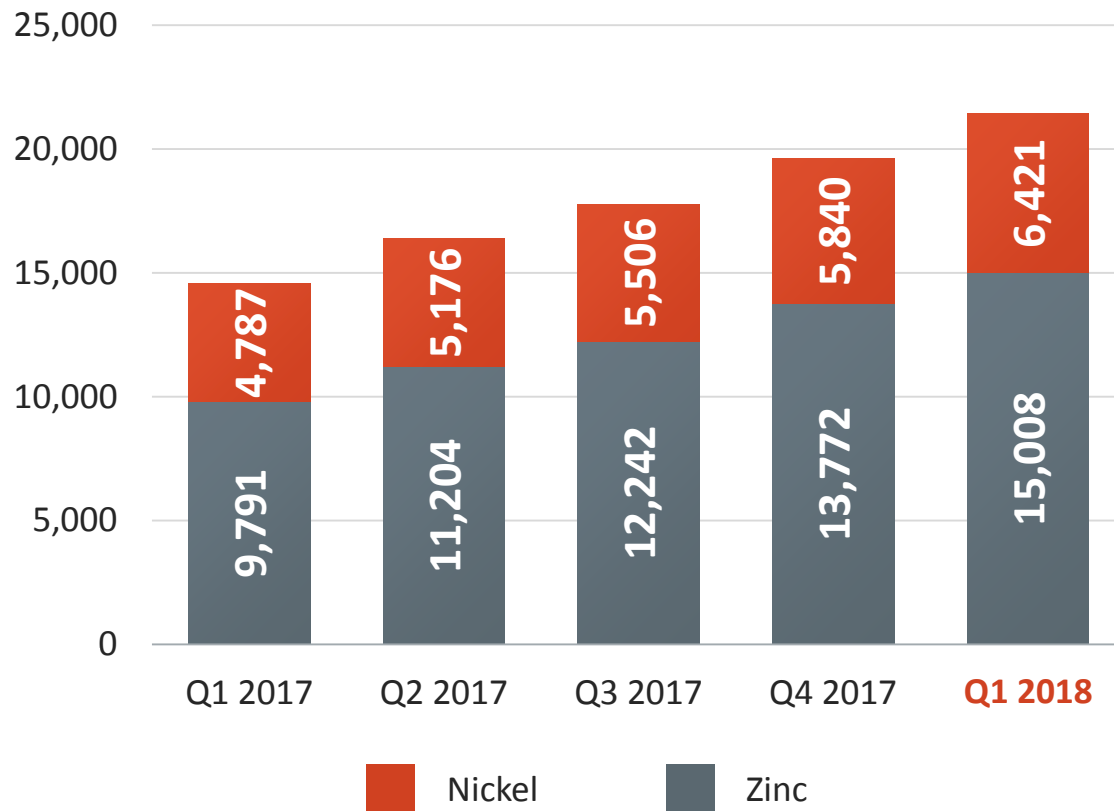
Nickel and zinc to primary leaching (t)





## » At the metals production plant, steady growth continued

Nickel and zinc production (t)

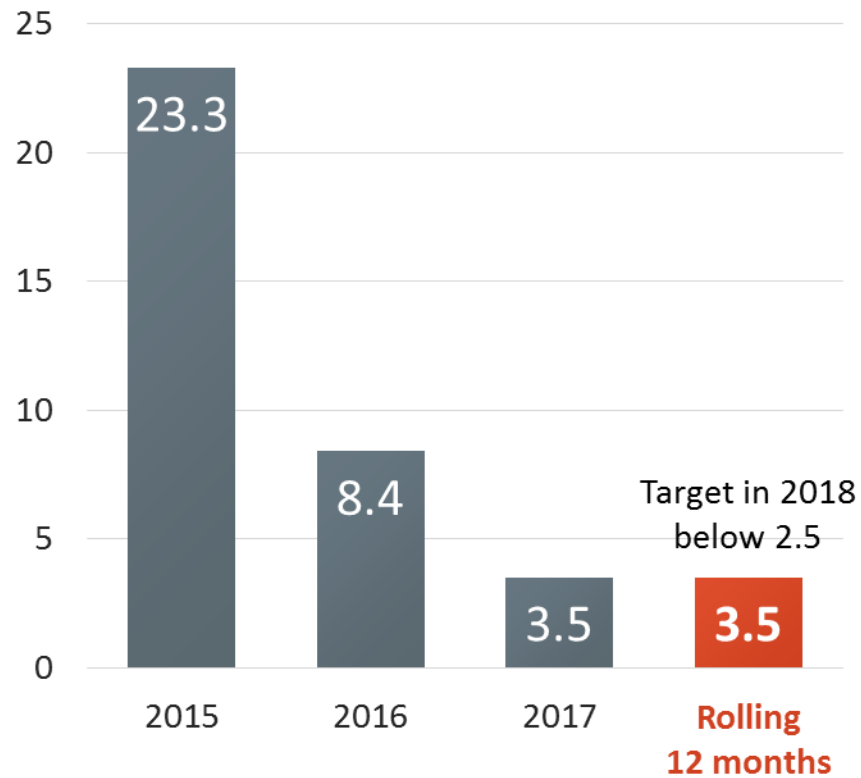




» Safety at good level

# » Lost-time injury frequency 3.5 for rolling 12 months

Lost-time injury frequency  
Terrafame employees



Terrafame  
**634**  
employees



Lost-time injury frequency = number of injuries per one million person-hours worked. Situation in 31 Mar 2018.



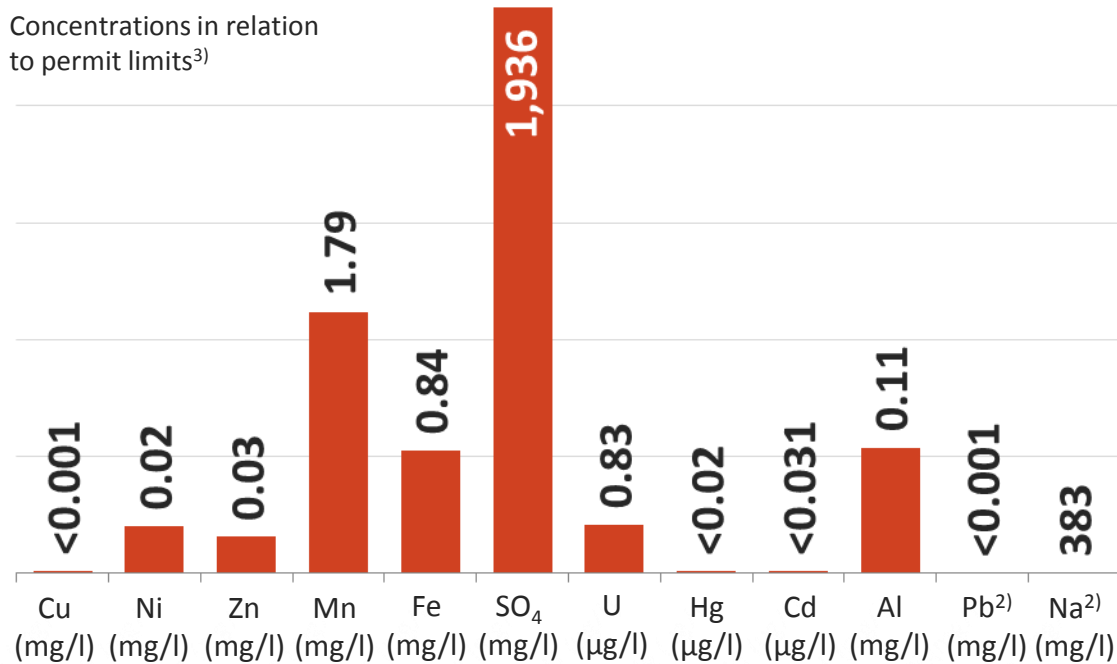
# » Sulphate quota 475 tonnes clearly under the permit limit

## Concentrations in the water discharged

1 Jan 2018–31 Mar 2018

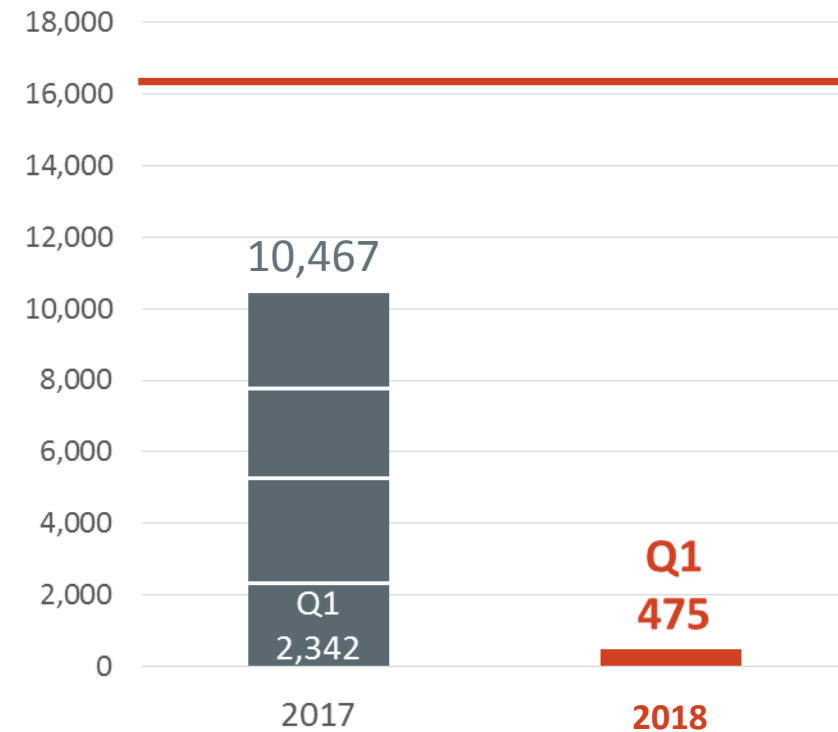
0.3<sup>1)</sup> 0.3<sup>1)</sup> 0.5<sup>1)</sup> 4 4 2,000 10<sup>1)</sup> 1.5 3 0.5  
 mg/l mg/l mg/l mg/l mg/l mg/l µg/l µg/l µg/l mg/l

Concentrations in relation to permit limits<sup>3)</sup>



## Sulphate quota 16,300 t in 2018

Discharge pipe 15,000 t/a and old routes 1,300 t/a



<sup>1)</sup> Max. allowed concentration in a single sample.

<sup>2)</sup> No permit limits for lead (Pb) and natrium (Na).

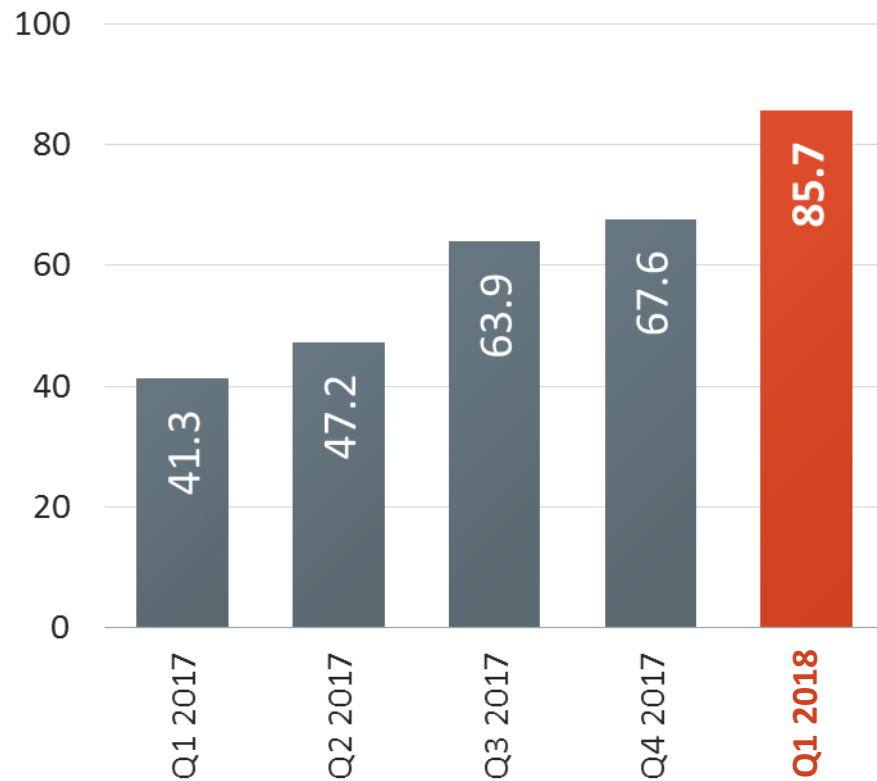
<sup>3)</sup> In 2017, permit limit for manganese (Mn) 6 mg/l and for sulphate (SO<sub>4</sub>) 4 000 mg/l.

» Net sales developed favourably



## » Net sales continued to grow

### Net sales (M€)



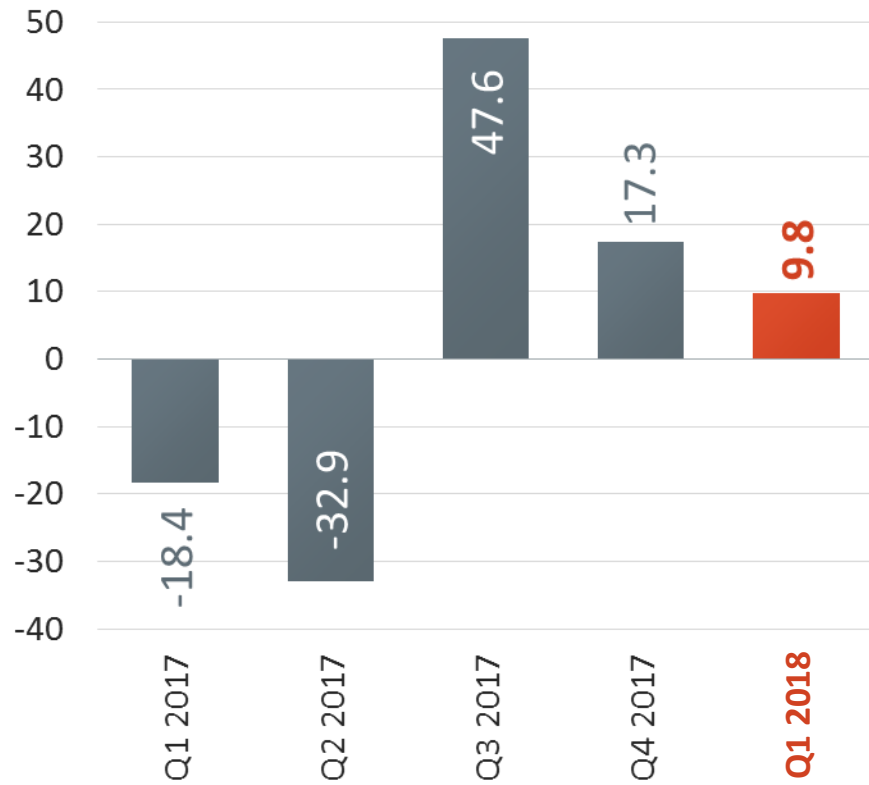
Audited 2017 figures (FAS).

- Compared to Q1 2017, net sales more than doubled.
- Compared to Q4, the average nickel price in USD was 14.6% higher and in EUR 9.8% higher.
- Compared to Q4, the average zinc price in USD was 5.7% higher and in EUR 1.3% higher.

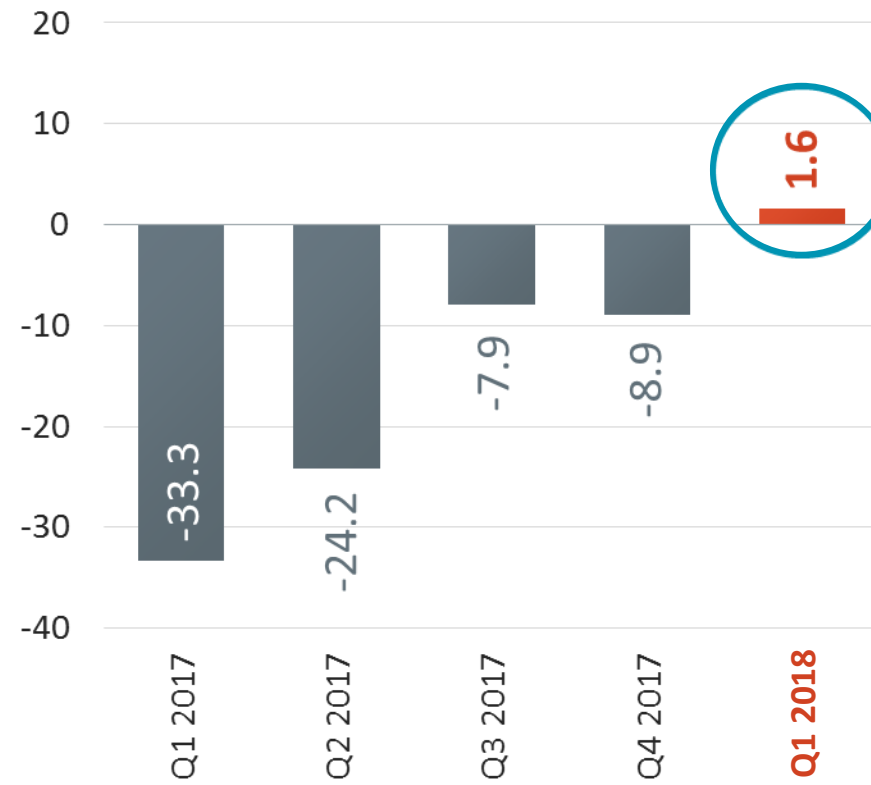


## » EBITDA without change in WIP turned positive

EBITDA (M€)



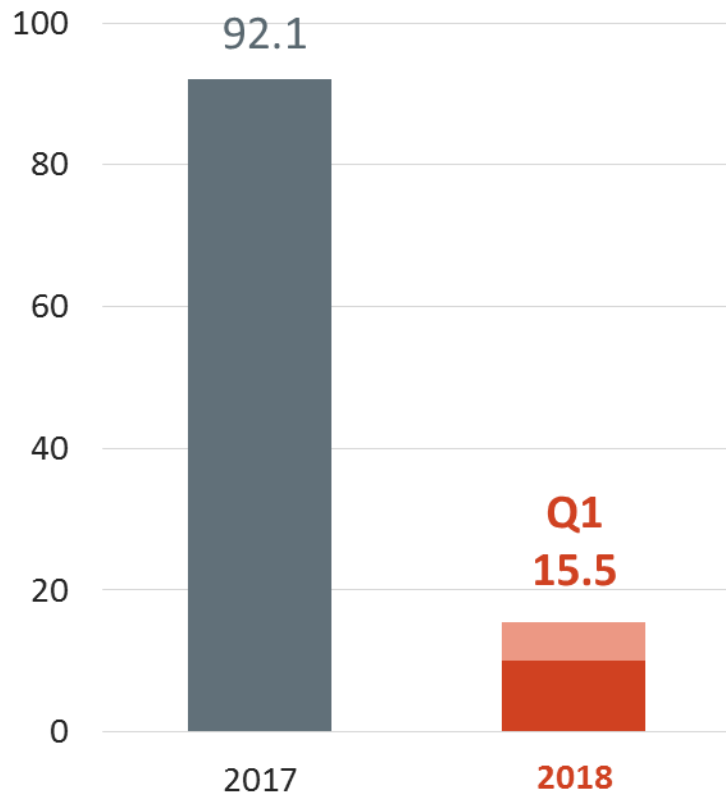
EBITDA excl. change in WIP (M€)



WIP = Work in progress.  
Audited 2017 figures (FAS).

# » Investments in improving productivity and increasing capacity continued

## Capital expenditure (M€)



Audited 2017 figures (FAS).

### ■ Sustaining capital (5.4 M€):

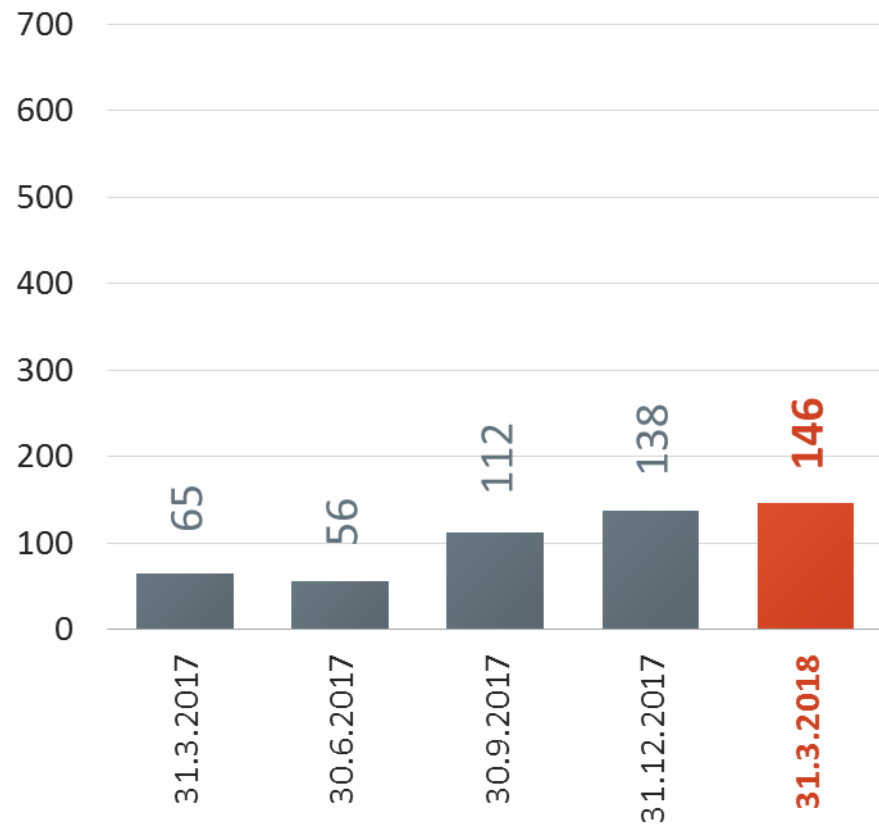
- Ore transport equipment
- Alteration work related to relocation of the secondary bioleaching area ore transport line

### ■ Productivity improvements and capacity increases (10.1 M€):

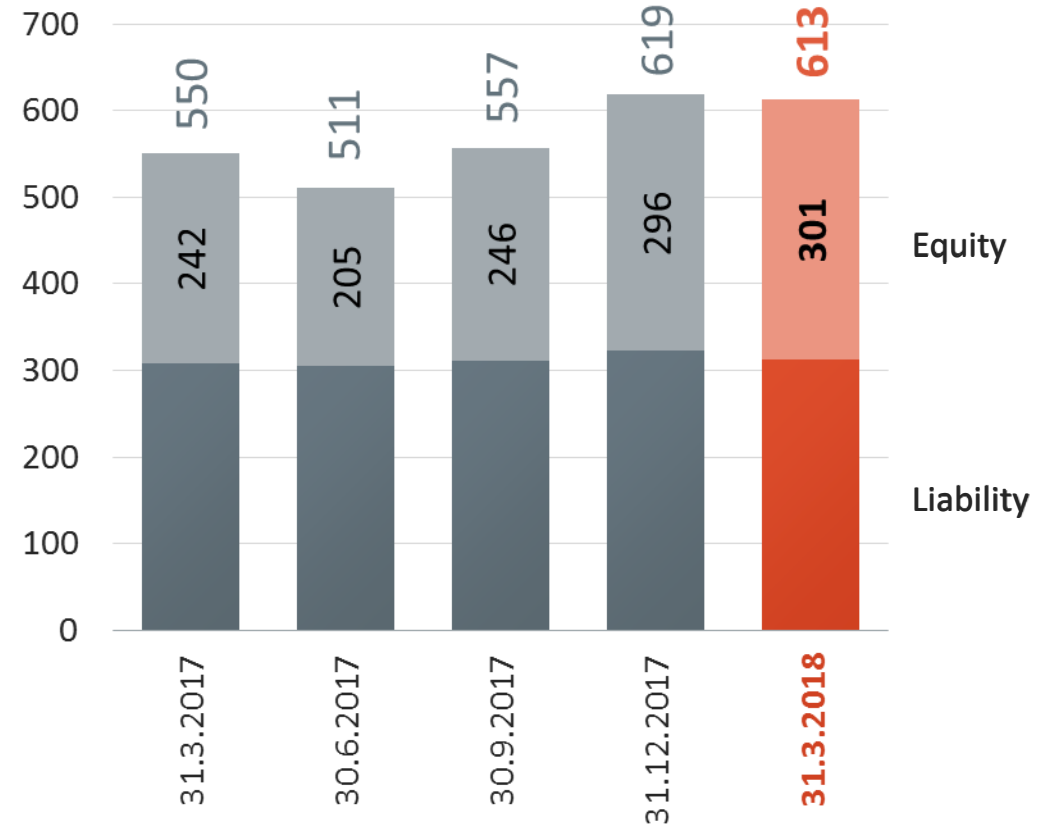
- Construction of the foundations for block 2 in the waste rock area
- Installation work of the new hydrogen sulphide production line
- Construction of block 4 in the secondary bioleaching area

## » Terrafame's solidity at good level

Value of work in progress (M€)



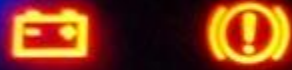
Equity and liabilities (M€)



Audited 2017 figures (FAS).



## » Project Battery Chemicals Plant proceeds



To 100% Charge



( Est. Time )

**P** ECO **A** 416 km  
291.6 km

## » Terrafame is aiming at becoming a significant producer of battery grade chemicals globally

- Feasibility studies and project planning as well as permit processes have advanced according to schedule.
- In addition to nickel and cobalt sulphates, the plant would produce ammonium sulphate.
- The Board of Directors has made a decision to proceed from planning phase to detailed engineering phase.
- Building of the project management organisation has been started.





## »» Near-term outlook

- Terrafame will continue ramping up production, stabilising operations and improving profitability.
- A spring maintenance stoppage in May will affect the production and sales volumes of Q2.
- In the battery chemicals plant project, the company will proceed to detailed engineering phase. At the same time, permit processes will be advanced.
- The recovery of rare earth elements and uranium will also be explored further on a laboratory scale.
- We will employ approximately 90 summer employees.





# Terrafame

Extracting  
innovation



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