

» Business Review October–December 2022

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CEO

3 March 2023

Terrafame

>> 2022 was a record-breaking year for Terrafame

Net sales
2022

EUR 584.4 million

2021 EUR 378.4 million

Net sales of battery
chemicals business

EUR 207.1 million

2021 EUR 27.1 million

35 % of net sales

EBITDA
2022

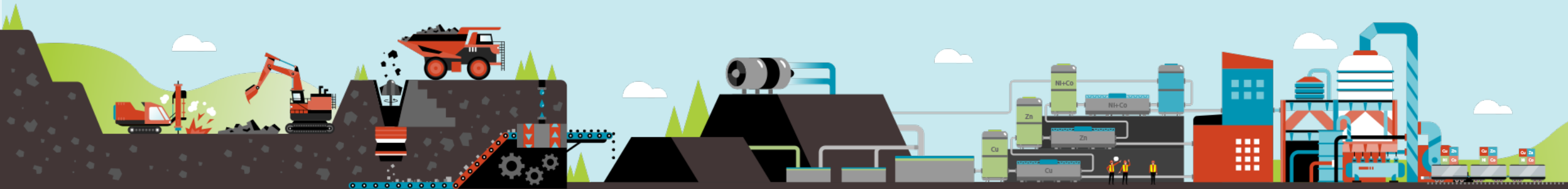
EUR 152.1 million

2021 EUR -24.2 million*

Operating result
2022

EUR 93.9 million

2021 EUR -22,3 million*



*The figure does not include the increase in the environmental reserve, which reduced EBITDA and operating income by EUR 72.9 million in Q4/2021.

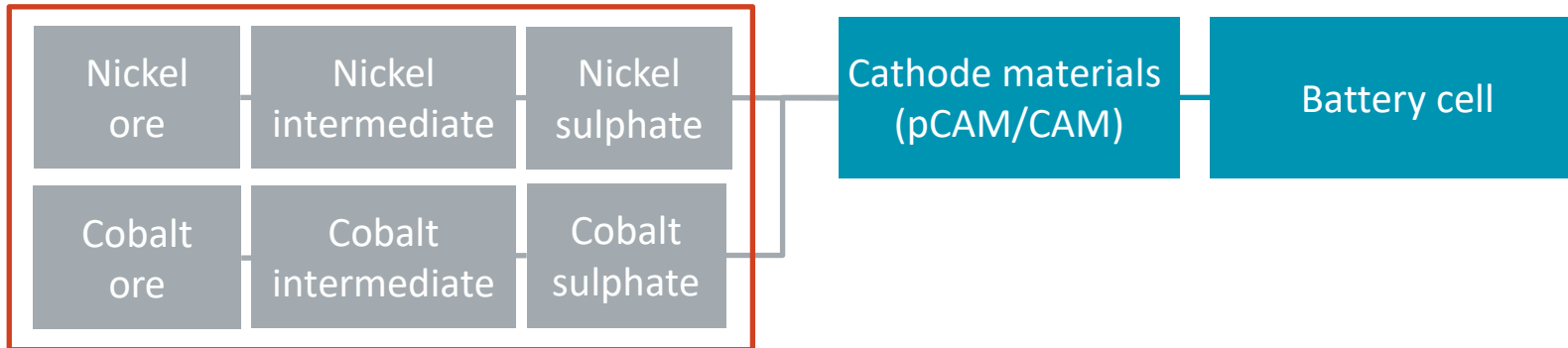


» Developing special chemicals company

» Terrafame's decision to invest into the battery chemicals has been the right strategic move

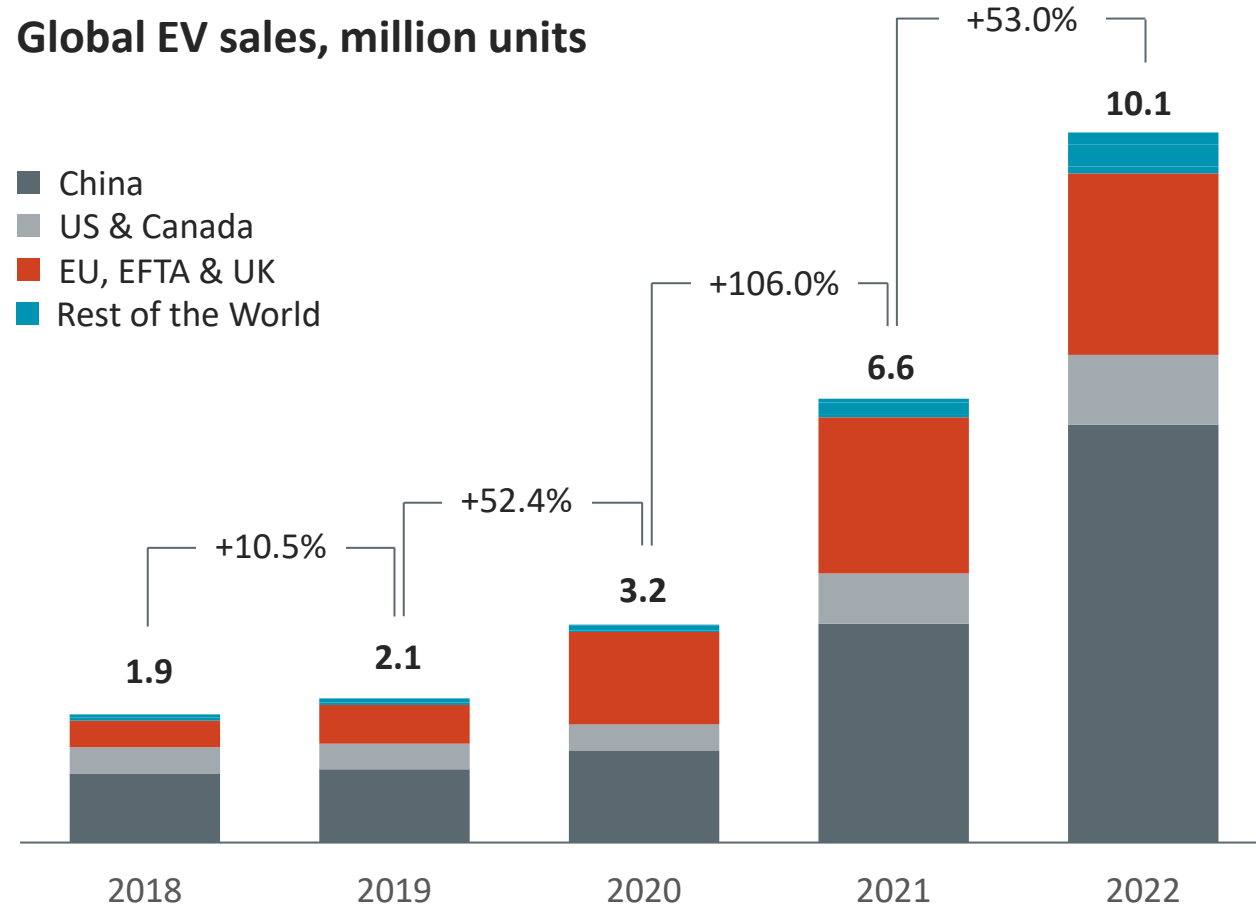


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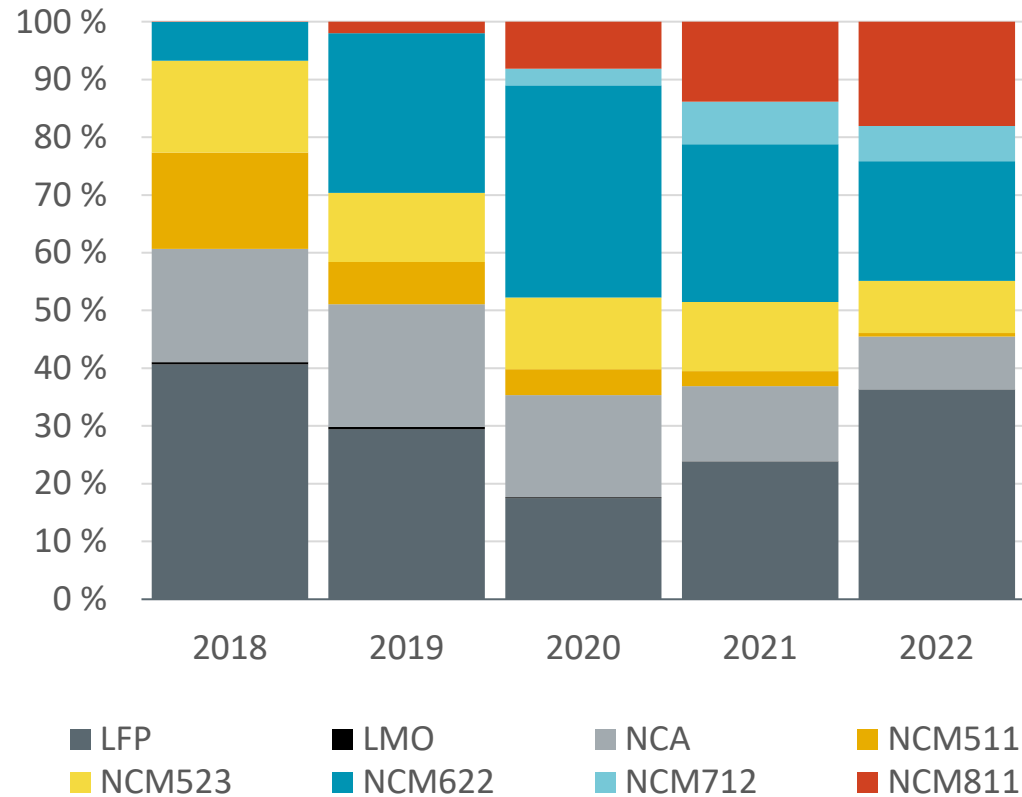
>> Electrification of transportation continues

Global EV sales, million units

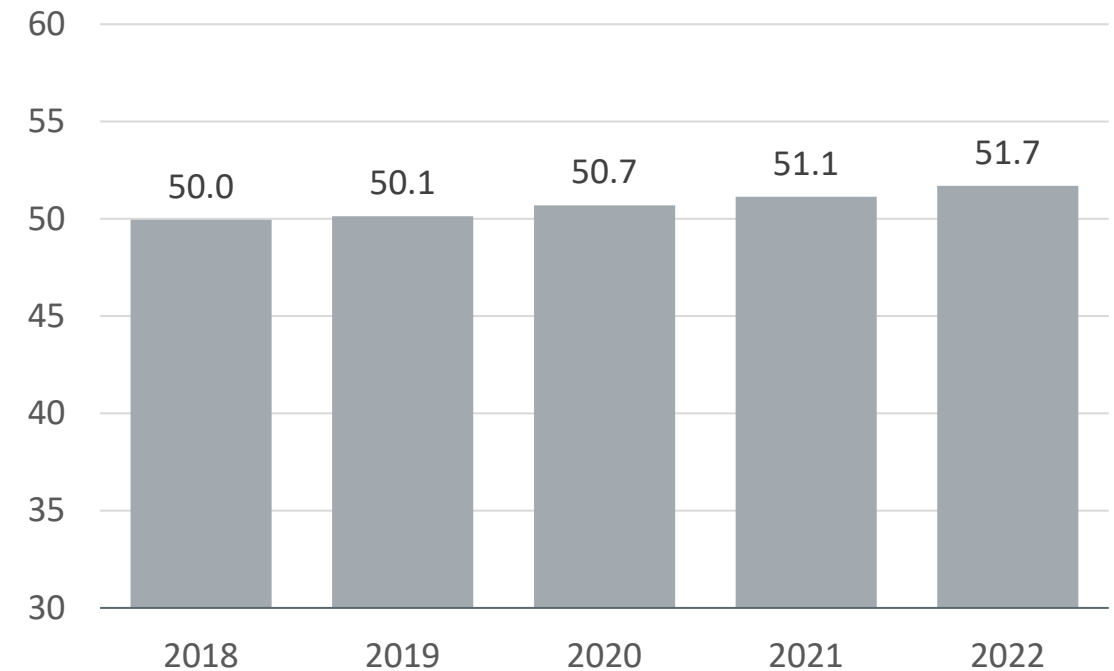


» Battery technologies are dividing into a low-end (LFP) and a high-end (NCM811) cathode materials

Average EV battery cathode chemistry

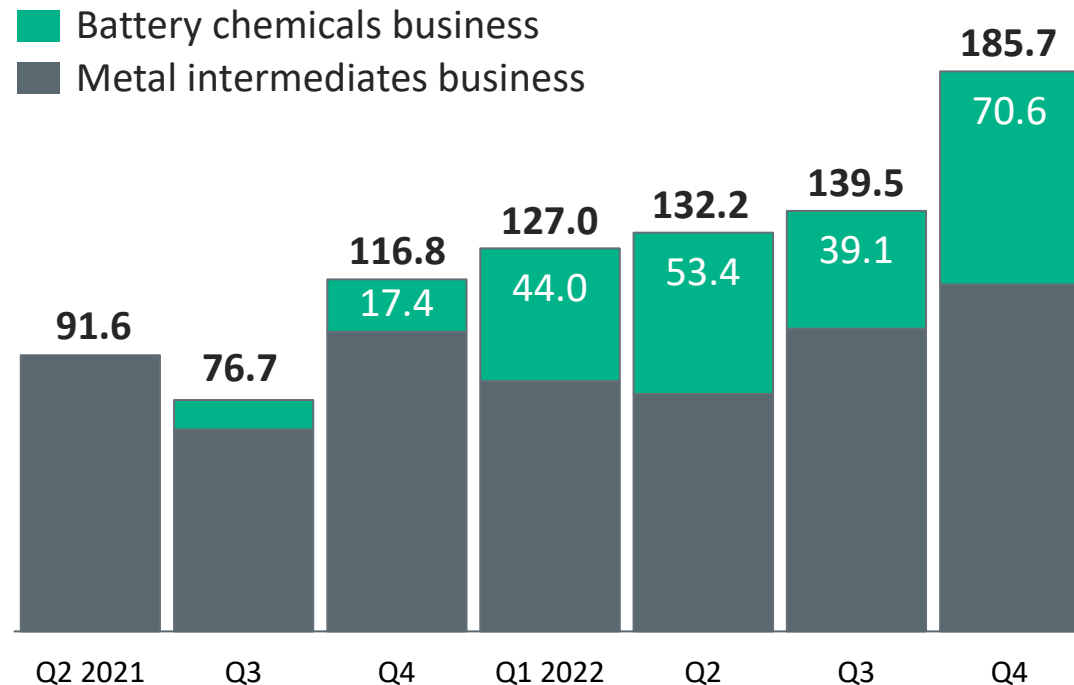


Sales weighted average EV battery pack size, kWh



»» The share of battery chemicals grows as the new plant's ramp-up progresses

Net sales, EUR million



» Terrafame's nickel sulphate has passed the demanding qualification processes

- High-quality nickel sulphate is a critical raw material for the production of cathode materials used in EV batteries.
- During 2022, Terrafame reached the highest quality level required by the automotive industry and passed several qualification processes for nickel sulphate with its customers.
- Terrafame informed in February 2023 that it has started commercial deliveries to Umicore after passing the comprehensive product qualification process.



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» Terrafame is building a European and sustainable EV battery value chain together with its customers

- The direct agreement between an OEM and battery chemicals producer is a game-changer in the EV battery value chain.
- Direct contracts can improve the sustainability and transparency of the whole value chain.
- Published agreements:
 - Renault Group
 - Stellantis, whose well-known brands include e.g. Alfa Romeo, Citroën, Opel and Peugeot.



A photograph of a field of tall, golden-brown grasses, likely a meadow or prairie, under a clear blue sky. The grasses are in sharp focus in the foreground, with some blurred in the background. The lighting is bright, suggesting a sunny day.

**» Sustainability as a
competitive advantage**

» Terrafame's target is to achieve carbon neutral production by 2039

The carbon footprint of nickel sulphate produced by Terrafame is already **60% lower than the industry average**

- Bioleaching consumes about 90% less energy than conventional production methods.
- Energy production is based on bioenergy and waste heat recovery, which already cover about 75% of the energy needs for steam and district heating.

The path to carbon neutrality is based on substituting the fossil fuels and raw-materials

- Renewable energy projects (wind and solar energy)
- Production of green hydrogen for process needs
- Mining equipment and other mobile fleet powered by electricity and/or hydrogen
- For the remaining carbon emissions, the identification of the ways of reduction is ongoing



When Terrafame's **nickel sulphate** is used in EV batteries,



the annual savings in CO₂ emissions correspond to a total of **3,400 million kilometers** of driving.



This equates to about **85,000 journeys around the world.**

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>> In addition to the carbon neutrality, Terrafame conducts diverse sustainability work

Examples	2021	2022	Target
Occupational safety	<p>Lost-time injury frequency (LTIFR1): Terrafame 5.5 Partner companies 11.8 Total 8.9</p>	<p>Lost-time injury frequency (LTIFR1): Terrafame 4.3 Partner companies 8.5 Total 6.4</p>	0 injuries
Environmental impacts	100% of the process-derived sulphate is recycled back into the process.	100% of the process-derived sulphate is recycled back into the process.	100% of the process-derived sulphate is recycled back into the process.
Material efficiency	<p>By-products from the metals production are recycled back into bioleaching.</p> <p>Terrafame has an agreement with a partner to make use of plastic waste. Around 37% of irrigation hoses used in bioleaching are made of recycled material.</p>	<p>By-products from the battery chemicals plant are recycled back into bioleaching.</p> <p>Ammonium sulphate produced as a by-product at the battery chemicals plant is sold for fertilizer use.</p> <p>Around 70% of irrigation hoses are made of recycled material.</p>	The metals in our ore are recovered as efficiently as possible and the process side streams are recycled efficiently.

The next Sustainability Review will be published in June 2023. Read more: terrafame.com/sustainability.

» Terrafame's uranium recovery enhances carbon-free energy production

Uranium recovery and utilization is sustainable

- Nuclear power production does not result in carbon dioxide emissions.
- The launch of uranium recovery will make the utilization of ore mined by Terrafame more efficient.

Recovery will start by the summer of 2024

- The preparations require investments of approximately EUR 20 million.
- The recovery of uranium will increase Terrafame's net sales by approximately EUR 25 million per year.
- The recovery plant is estimated to operate at full capacity by 2026.



Terrafame's uranium recovery plant will have an annual capacity of 200 tons. This corresponds to about half of the need of a plant equivalent to Olkiluoto 3.

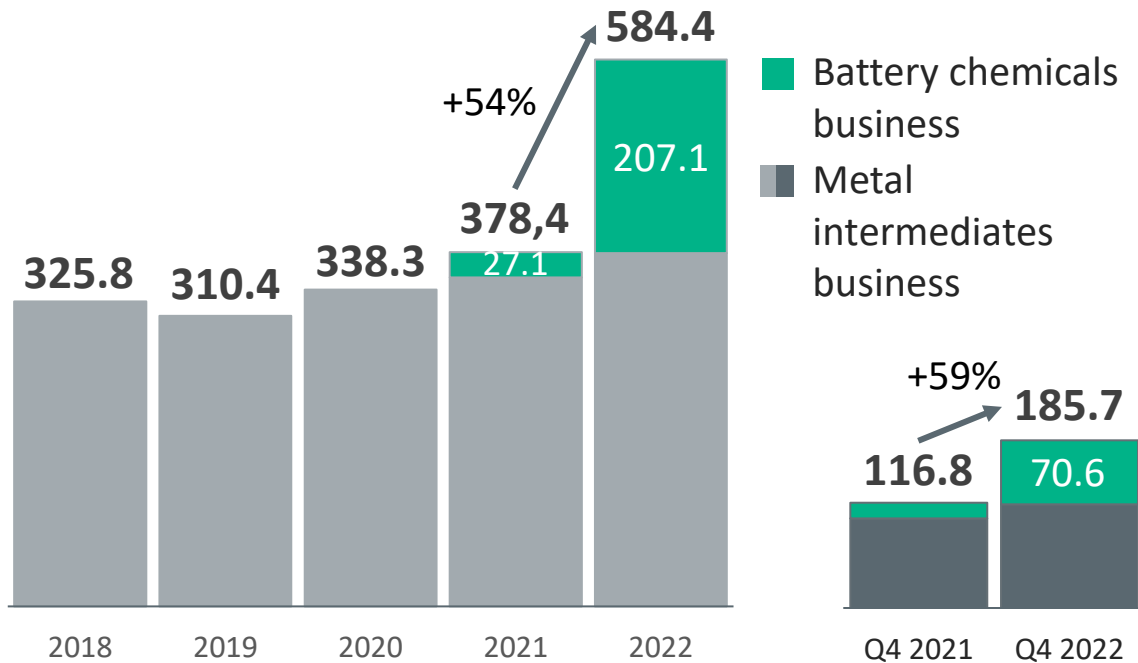
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» **Financially solid
company**



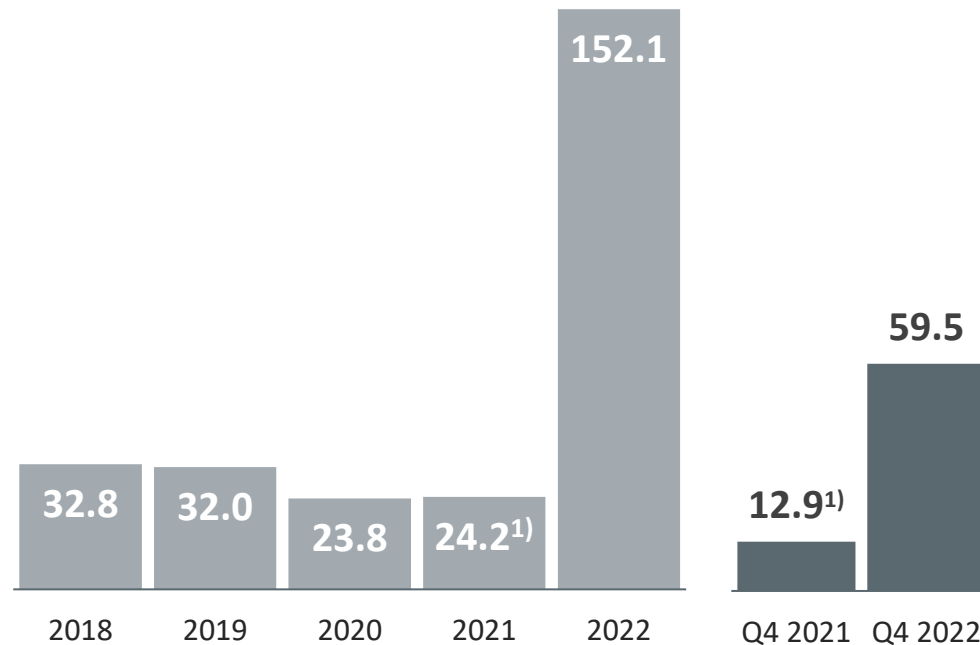
>> Battery chemicals business contributes 35% of full-year net sales

Net sales, EUR million

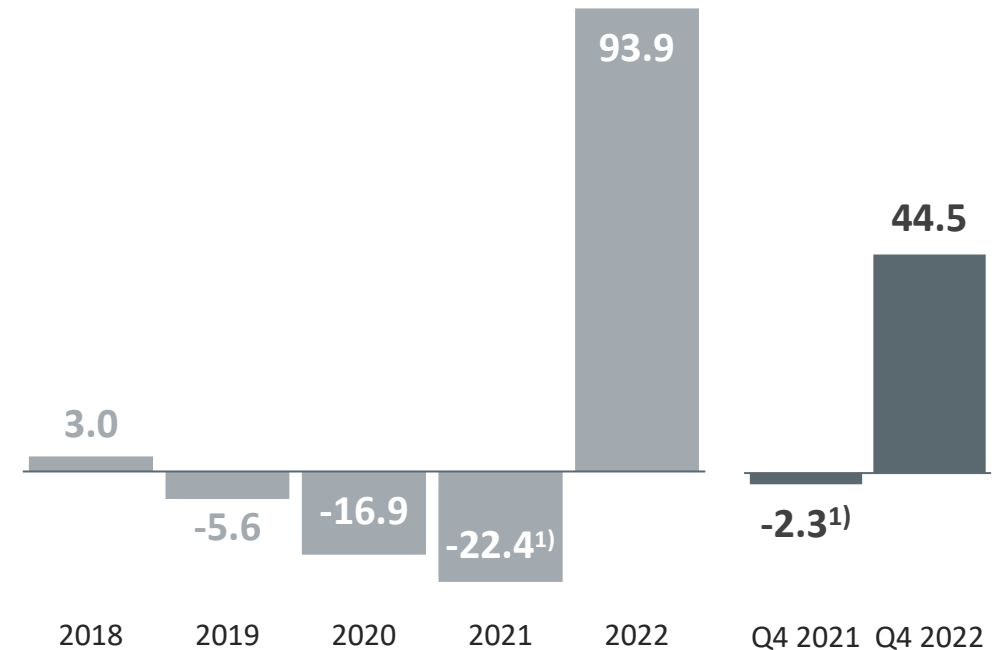


>> Best EBITDA and operating result in Terrafame's history

EBITDA, EUR million



Operating result, EUR million



1) Excl. non-recurring items. The increase in the environmental reserve in Q4/2021 reduced EBITDA and operating income by EUR 72.9 million. Reported EBITDA for 2021 was EUR -48.8 million and operating income was EUR -95.3 million.

»» Capital expenditure and financing arrangements

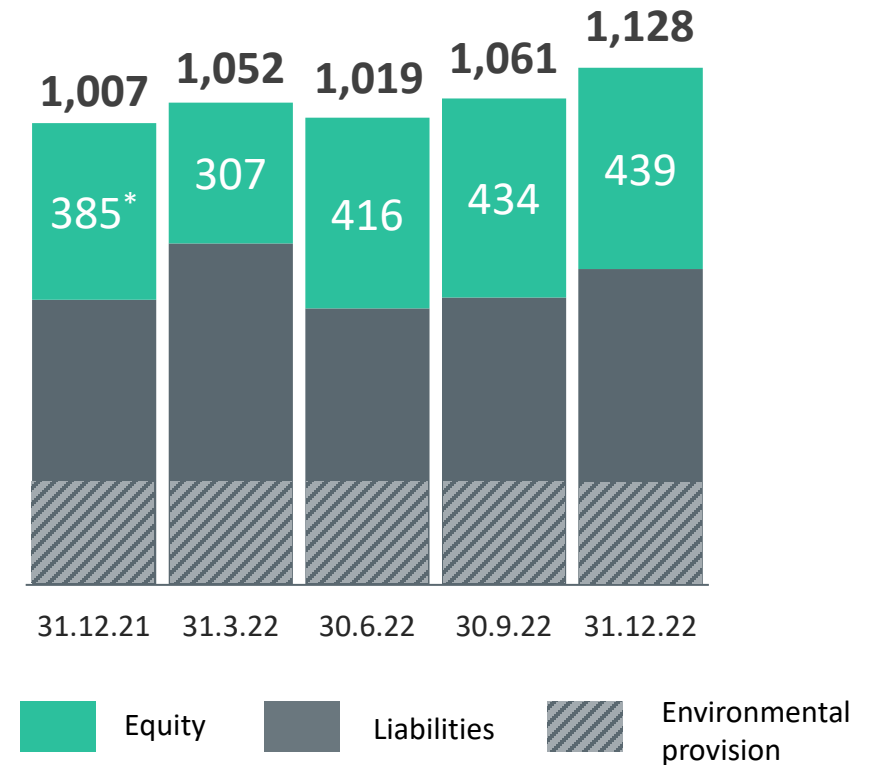
Capital expenditure 2022

- Capital expenditure totalled EUR 83.0 (117.9) million. Of this total, EUR 13.1 (57.6) million was used to improve productivity and increase capacity.
- The most important investments were related to the completion of the battery chemicals plant, the elimination of production bottlenecks and preparatory work to enable the exploitation of the Kolmisoppi deposit.

Financing arrangements

- Of the USD 90 million unsecured financing arrangement signed with an international bank in September 2021, the remaining USD 70 million was drawn out during 2022. After the end of the instalment-free period, the first instalment was paid at the end of December.

Equity and liabilities, EUR million



* The change in the environmental provision had EUR -72.9 million effect on the result for the financial year 2021 and equity as of 31 December 2021.

>> Key figures in brief

	Q4 2022	Q4 2021	Change	2022	2021	Change
Net sales, EUR million	185.7	116.8	59%	584.4	378.4	54%
Battery chemicals business	70.6	17.4	306%	207.1	27.1	664%
Metal intermediates business	115.1	99.4	15.8%	377.3	351.3	7.4%
EBITDA, EUR million	59.5	-60.0	n.a.	152.1	-48.8	n.a.
EBITDA, excl. non-recurring items, EUR million	59.5	12.9	n.a.	152.1	-48.8	n.a.
Operating result, EUR million	44.5	-75.3 ⁽¹⁾	n.a.	93.9	-95.3 ⁽¹⁾	n.a.
Operating result, excl. non-recurring items, EUR million	44.5	-2.3	n.a.	93.9	-22.4	n.a.
Free cash flow, EUR million⁽²⁾	16.7	26.5	-37%	9.8	-43.2	n.a.
Total capital expenditure, EUR million⁽³⁾	24.5	17.0	44%	83.0	117.9	-30%

1) An increase in the environmental provision had a negative impact of EUR 72.9 million on EBITDA and the operating result in the fourth quarter of 2021.

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

»» Outlook for 2023

- The ramp-up of production at the battery chemicals plant continues.
- The price development of base metals and battery chemicals involves considerable uncertainty.
- Terrafame continues to improve its occupational safety, operational efficiency and profitability.





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**Enhancing low-carbon
mobility with responsible
battery chemicals.**

www.terrafame.com

