

Vulcan Energy Resources Ltd

Australia | Basic Resources | MCap EUR 271.0m

17 November 2023

UPDATE



Bridging engineering study provides new datapoints; BUY

What's it all about?

Vulcan Energy Resources has announced the results of its Bridging Engineering Study (BES). The BES addressed several design changes to Phase 1 of Vulcan's lithium project. The BES and associated Field Development Plan (FDP) have contributed to de-risking following the reduction from two production areas (Lionheart and Taro) to Lionheart as the core production area. The combination of assets has enabled Vulcan to reduce CAPEX by EUR 97m to EUR 1,399m. In addition to lower CAPEX, Vulcan also expects lower operating costs. Despite the significant decline in lithium prices in the market, the BES still attributes attractive returns to Phase 1. Now officially entering the financing phase, the company's comments on strong interest from debt and equity investors are encouraging. However, the targeted application for public funding has resulted in a further delay to the project schedule. Nevertheless, Vulcan has a unique lithium project that offers enormous upside potential even after our model adjustments. Our recommendation remains BUY with a new PT of EUR 9.90 (old: EUR 12.00).

BUY (BUY)

Target price	EUR 9.90 (12.00)
Current price	EUR 1.62
Up/downside	512.1%



MAIN AUTHOR

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IMPORTANT. Please refer to the last page of this report for "Important disclosures" and analyst(s) certifications.

alsterresearch.com

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Australia | Basic Resources | MCap EUR 271.0m | EV EUR 264.7m

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Bridging engineering study provides new datapoints; BUY

Publication of BES. Vulcan Energy Resources has announced the results of its Bridging Engineering Study (BES). The BES addressed several design changes to Phase 1 of Vulcan's lithium project. Vulcan highlighted 5 key findings:

1. Further de-risking: De-risking the project has been a major focus for Vulcan since inception. The BES and associated Field Development Plan (FDP) have contributed to de-risking by removing a number of variables from the equation. A key point was the streamlining of Phase 1 from two production areas (Lionheart and Taro) to Lionheart as the core production area as it is proven ground that is already producing brine commercially. This also resulted in the reduction of two upstream facilities to one large lithium extraction plant (LEP). At the same time, the FDP increased the proven and probable reserves and upgraded the measured and indicated resources in the Lionheart area (read [here](#)). In essence, Vulcan will be able to maintain its production target of 24,000 tons per year while reducing the scope of Phase 1.

2. Reduced CAPEX: Compared to the Definitive Feasibility Study (published in early 2023), Vulcan achieved a EUR 97m reduction in CAPEX to EUR 1,399m, which is a rather unusual result given the increasing definition of an engineering project (Class 2 estimate). The main drivers were the combination of assets (EUR -157m) and the removal of a geothermal plant (EUR -38m), which helped to offset higher cost estimates for drilling (EUR +13m), the central lithium plant (EUR +37m) and the pipeline system (EUR +56m).

3. Low OPEX retained: In addition to lower CAPEX, Vulcan also estimates lower operating costs. Compared to the DFS, OPEX decreased from EUR 4,359 per tonne to EUR 4,022 per tonne. Mainly due to asset rationalization, maintenance costs, the second largest component of OPEX at 25% of total OPEX, were reduced.

4. Financials: Due to the significant decline in lithium prices on the market, the BES is based on lower LHM price forecasts, which has a negative impact on the estimated revenues, especially in the early years of production (10-year average -10% compared to DFS). However, the long-term price forecast is only slightly lower (20-year average -3%). On this basis, revenues are estimated to

-continued-

in EURm	2022	2022S	2023E	2024E	2025E	2026E
Sales	3.8	3.6	7.3	7.3	9.0	204.9
Growth yoy	nm	-4.7%	102.8%	0.0%	22.5%	2,176.7%
EBITDA	-14.9	-11.0	-38.4	-41.1	-46.1	146.8
EBIT	-17.5	-13.9	-43.0	-56.0	-85.5	75.1
Net profit	-18.7	-13.4	-36.2	-133.2	-165.3	9.3
Net debt (net cash)	-172.4	-130.8	-6.3	257.2	916.1	997.5
Net debt/EBITDA	11.6x	11.9x	0.2x	-6.3x	-19.9x	6.8x
EPS reported	-0.15	-0.09	-0.22	-0.74	-0.85	0.05
DPS	0.00	0.00	0.00	0.00	0.00	0.00
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gross profit margin	na	110.2%	18.3%	18.3%	-344.4%	68.5%
EBITDA margin	na	-304.3%	-522.6%	-559.8%	-512.6%	71.6%
EBIT margin	na	-383.4%	-585.7%	-762.3%	-950.0%	36.6%
ROCE	-7.0%	-5.8%	-12.7%	-3.3%	-5.2%	4.5%
EV/EBITDA	-6.6x	-12.7x	-6.9x	-12.8x	-25.7x	8.6x
EV/EBIT	-5.6x	-10.1x	-6.2x	-9.4x	-13.9x	16.9x
PER	-10.8x	-17.2x	-7.5x	-2.2x	-1.9x	34.2x
FCF yield	-5.6%	-3.2%	-16.6%	139.3%	-36.1%	-11.3%

Source: Company data, AlsterResearch; 2022S short fiscal year – year end: 31.12.



Source: Company data, AlsterResearch

High/low 52 weeks 5.05 / 1.25
Price/Book Ratio 1.0x

Ticker / Symbols

ISIN AU0000066086
WKN A2PV3A
Bloomberg VUL:GR

Changes in estimates

		Sales	EBIT	EPS
2023E	old	7.3	-43.0	-0.24
	Δ	0.0%	na%	na%
2024E	old	7.3	-56.0	-0.29
	Δ	0.0%	na%	na%
2025E	old	9.0	-51.5	-0.26
	Δ	0.0%	na%	na%

Key share data

Number of shares: (in m pcs) 167.52
Book value per share: (in EUR) 1.57
Ø trading volume: (12 months) 16,160

Major shareholders

F. Wedin 9.8%
Stellantis Group 6.8%
Hancock Prospecting 5.6%
Free Float 72.5%

Company description

The Australian lithium chemicals & renewable energy company Vulcan Energy Resources Ltd. has been developing a project in the Upper Rhine Valley in Germany that combines the use of thermal water as an energy source (hydrogeothermal energy) with the extraction of the lithium contained in the geothermal brine without polluting the environment with emissions, waste material or toxic substances. With a CO2 footprint of "zero", the project is predestined to mark the beginning of the decarbonization of the battery industry.

average EUR 705m per year (DFS: > EUR 700m per year). This results in an estimated pre-tax NPV of EUR 3.9bn. Despite the OPEX savings, the estimated EBITDA margin has decreased from 84% to 74%, which has a negative impact on the project's IRR (pre-tax, -7.7pp to 27.8%) and extends the payback period from 3.5 years to 4.2 years.

5. Execution/financing: Given the Class 2 cost estimate, which by definition is prepared when 30-70% of the project details are complete, Vulcan expects to continue project execution. The Company expects to award key construction contracts shortly as the EPCM (Engineering, Procurement, Construction Management) tender process is well advanced. A contractor is expected to be appointed in Q1/Q2 2024. Following the BES, Vulcan plans to formally initiate project financing. The Company has already completed a debt market sounding led by BNP Paribas, which has indicated strong interest from commercial and development banks.

In addition, Vulcan has already secured substantial government-backed ECA support in principle, subject to customary conditions, from Bpifrance Assurance Export, the French ECA, SACE, the Italian ECA, and EDC, the Canadian ECA.

In addition, Vulcan is initiating the financing process with strategic investors for project level equity. Contrary to previous plans, Phase 1 will not be split into individual projects and SPVs (read [here](#)), but will be offered as an integrated project.

Finally, the project execution schedule has been adjusted to align with the public funding programs that have just opened in Europe. This results in a delayed production start of the Phase 1 LEP and CLP in H2 2026 (before: end of 2025). Vulcan justifies this by maximizing the opportunity to receive government funding.

Model action: Based on the new data, we have adjusted some of the parameters of our model.

1. First, we have modeled the start of production from H2 2026 (previously: end of 2025).
2. Based on the drop in LHM prices in 2023, we have lowered our LHM price assumption from USD 25,000 per ton to USD 22,500 per ton. Correspondingly, we have lowered our sales estimates from lithium production to approximately EUR 600m per year at full capacity (FY28).
3. In addition, we have modeled cost lines more conservatively, leading us to lower the company's expected EBITDA margin to 74% from our previous estimate of 84%.
4. As Vulcan seeks to secure funding while limiting the dilutive effect on the share price that would be associated with capital increases, the addition of strategic partners is also intended to secure access to expertise. This aspect is now included in our forecasts. While the resulting minority interests will pay for the required capital, net income available to shareholders will be reduced.
5. We also set our target debt/equity ratio at 0.65, while increasing the cost of debt from 6% to 7%. The year-end WACC increases from 9.1% to 9.9%.

Overall, we arrive at a new fair value of EUR 9.90 (old: EUR 12.00).

Conclusion: Vulcan's BES has further fleshed out the results of the DFS and produced some positive results, most notably further de-risking through asset rationalization and consequently lower CAPEX requirements. Continued low OPEX underpins the superior economics of the DLE technology, which is increasingly attracting other players (e.g. Eramet, ExxonMobil) to enter the market. Now officially entering the financing phase, the company's comments on strong interest from debt and equity investors are encouraging. However, the targeted application for public funding has further delayed the project schedule. Nevertheless, Vulcan has a unique lithium project that offers enormous upside potential even after our model adjustments. Our recommendation remains BUY with a PT of EUR 9.90.

Company Background

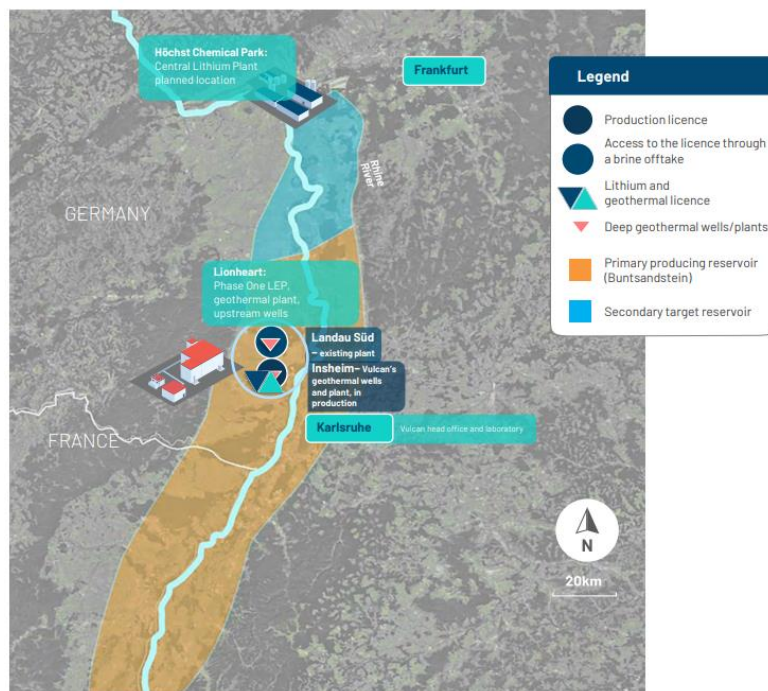
Vulcan in a nutshell:

Battery grade lithium hydroxide from brine sources in Germany – Vulcan has been on target for becoming a leading supplier of a material that is central to the electrification strategies of the automotive industry. And by operating geothermal plants, the company plans to provide renewable energy and heat to public and commercial customers in Germany.

Vulcan's Zero Carbon Lithium Project combines operations of extraction in the lithium-rich geothermal brine of the Upper Rhine Valley, of upgrading lithium to a high purity hydroxide (LiOH) as well as the production of hydrogeothermal energy (renewable electricity and heat). Thermal water will be used as energy source, and thus the extraction of lithium contained in the brine will run without polluting the environment with emissions, waste material or toxic substances. With a **CO₂ footprint of "zero"**, the project is predestined to mark the beginning of the decarbonization of the battery industry.

Estimated resources of Vulcan's Upper Rhine Valley Project have reached a total of approx. 27.7 million t LCE in JORC-compliant terms (Measured and Indicated Resource: 11.2 million t LCE). A portion of 4.16 million t LCE has been classified in the Measured category.

Phase 1 area

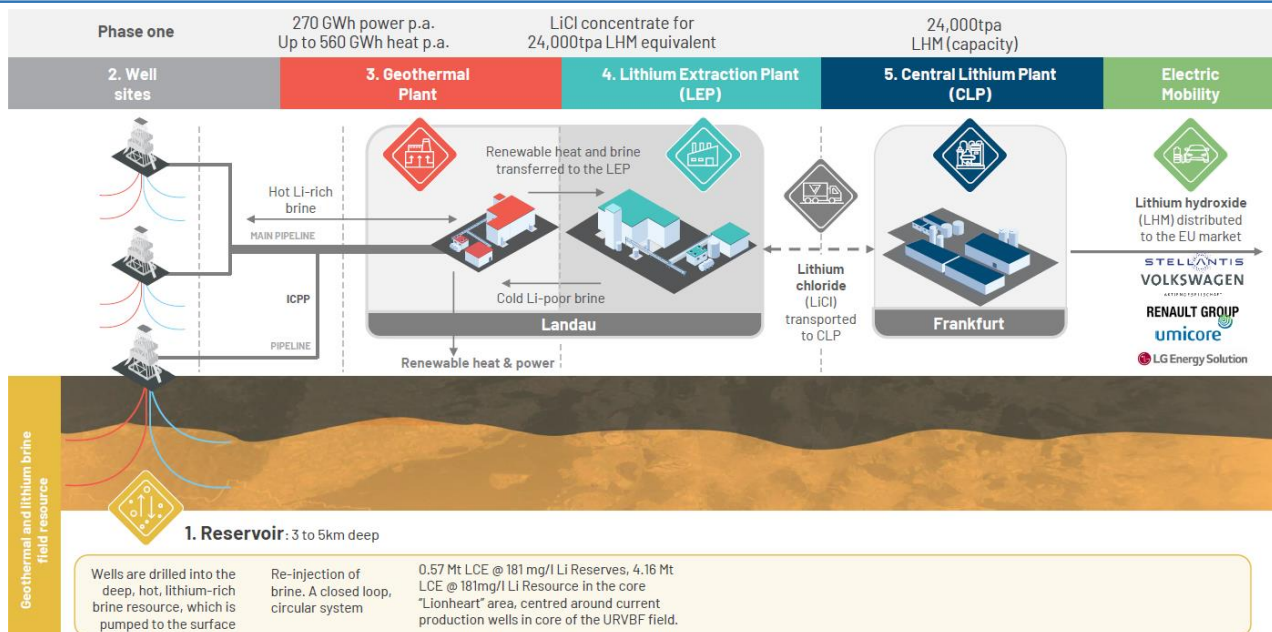


Source: Company data

How Vulcan's system works:

The system consists of extraction wells, drilled into the deep, hot, lithium-rich brine resource, which is pumped to the surface. Reinjection wells are used to feed the water back into the reservoir after part of the thermal energy stored in it has been cooled and lithium from brine has been extracted in the Lithium Extraction Plant (LEP). The lithium in the form of lithium chloride will be transported to Vulcan's Central Lithium Plant (CLP) at Frankfurt Höchst Chemical Park, where it will be converted to battery grade lithium hydrate monohydrate (LHM) using electrolysis.

Vulcan's system

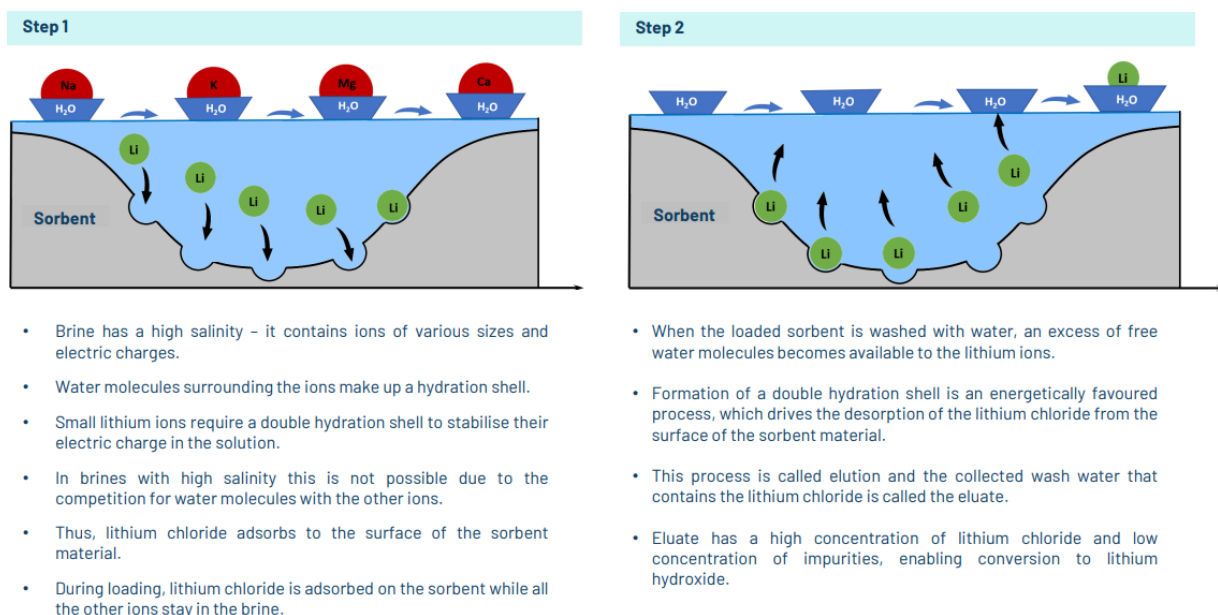


Source: Company data

Technology:

In Vulcan's project areas, a staged development will implement a process, which is known as **Adsorption-type Direct Lithium Extraction (A-DLE)**. This technology bases on proven effective for more than 20 years in industrial lithium carbonate production, while offering a higher lithium yield and very low environmental impact compared to traditional methods such as evaporation or hard-rock mining. A-DLE provides lower operating cost and less waste as this method requires the use of water instead of acid to recover lithium, and naturally heated sub-surface brines do not have to be pre-treated. Vulcans produced lithium can be adapted to meet specific requirements and serve as a precursor product in different forms. Vulcan can extract lithium of high purity relative to hard rock and evaporative lithium, meeting very high product quality standards, particularly in the battery electric vehicle industry.

A-DLE process



Source: Company data

Pre-commercial stage:

Vulcan's first pilot plant has been operating since April 2021, using live geothermal brine from existing wells. To train staff in a pre-commercial environment prior to the start of commercial production for targeted operational readiness in 2026, Vulcan is setting up demonstration plants for the extraction and the electrolysis. In September 2023, Vulcan completed its in-house designed Lithium Extraction Optimisation Plant (LEOP) at the GeoX geothermal plant in Landau. Start of operations occurs in November 2023. The Central Lithium Electrolysis Optimisation Plant (CLEOP) in Frankfurt's Industriepark Höchst will be completed in late 2023.

Optimization plants



Source: Company data

Phase One – Commercial stage:

The upstream area for Phase One comprises the Lionheart district, consisting of three licence areas. Vulcan plans to drill additional production and reinjection wells, and to build a new geothermal plant with a planned output of 275GWh of renewable power and 560GWh of heat. For lithium extraction, a large LEP is planned with a total targeted capacity of 24,000 t per year LHM equivalent. Vulcan is targeting the start of production in H2 2026, followed by a ramp up phase during 2027. According to the BES, OPEX was estimated with c. EUR 4,000 per t LHM. The CAPEX for Phase One is currently estimated with EUR 1.4bn.

Commercial LEP

Phase One commercial: Lithium Extraction Plant (LEP)

- **Building permit submitted in November 2023**, in line with Vulcan's timeline.
- Will be constructed next to new Phase One Geothermal Plant in Landau.
- Total **targeted capacity to be 24,000tpa LHM equivalent in LiCl form.**
- From the LEP, **LiCl solution will be transported** to the CLP at Industrial Park Höchst (Frankfurt).
- **Modular build allows** for further phased development across other phases in Upper Rhine Valley Brine Field (URVBF).



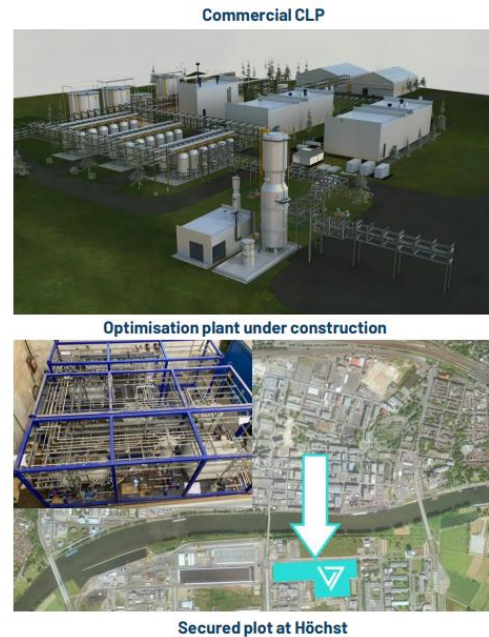
Planned new commercial Phase One Geothermal Plant and Lithium Extraction Plant (LEP) in Landau

Source: Company data

Commercial CLP

NEW CENTRAL LITHIUM PLANT (CLP)

- CLP planned to be located in Frankfurt (Höchst Industrial Park). Close to 100,000sqm secured.
- **Targeted 24,000tpa LHM capacity with space for further modular expansion.**
- Conversion of LiCl to battery grade LHM using electrolysis. By-products HCl and Sodium Hypochlorite. Significant synergies with existing chlor-alkali producers in the same chemical park, e. g. Nobian.
- Höchst is one of Europe's largest industrial estates and is home to around 90 chemical and pharmaceutical companies.
- Targeting late 2025 for commercial start of operations.
- Optimisation plant under construction, planned to start operation in H2, training staff in pre-commercial operational setting, will send significant volume of product to offtakers for pre-qualifications. Intended to ensure **commercial operational readiness.**



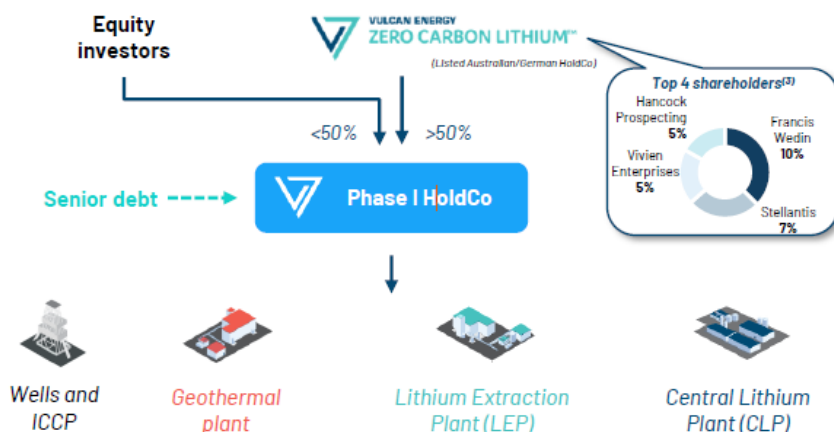
Source: Company data

Financing:

Vulcan has released its bridging engineering study (BES), which focuses on Vulcan's Lionheart area. The BES provides favorable project economics while also further de-risking potential. Completing the bridging study marks the kick-off for financing of phase 1. Overall, Vulcan is targeting a debt-to-equity ratio of 65:35 for the overall funding of Phase 1. The company intends to raise the needed funds via debt and equity financing, while also applying for public funding. The equity investments are planned on project level. By doing that, Vulcan sees opportunities to bring investors aboard while minimizing dilution.

Meanwhile, Vulcan has received a conditional, non-binding Letter of Support from Export Finance Australia (EFA) for up to AUD 200 million (~EUR 120 million) for the upcoming financing of Phase One. Additionally, Vulcan has already secured substantial in-principle government-backed ECA support, subject to customary conditions, from Bpifrance Assurance Export, the French ECA, SACE, the Italian ECA, and EDC, the Canadian ECA. The Phase One financing process start is also timed to coincide with public funding applications in Germany.

Contemplated financing structure



Source: Company data

Valuation

DCF Model

By using a 25% risk weighting on Equity value, the DCF model results in a **fair value of EUR 9.90 per share**. Vulcan is retaining 25.85% of Kuniko. Since it is highly volatile, we do not explicitly include the stake in Kuniko into our valuation model.

In our base case scenario, revenues are based on an average sales price at USD 22.5 thousand/ton of lithium hydroxide.

WACC. The averaged 1-, 3- and 5-year historical equity beta is calculated as 1.39. Unlevering and correcting for mean reversion yields an asset beta of 1.15. Combined with a risk-free rate of 3.0% and an equity risk premium of 6.0% this yields cost of equity of 13.3%. With pre-tax cost of borrowing at 7.0%, a tax rate of 25.0% and target debt/equity of 0.7 this results in a long-term WACC of 10.1%.

DCF (EURm) (except per share data and beta)	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	Terminal value
NOPAT	-32.3	-83.3	-115.4	59.2	288.8	379.3	389.5	402.3	
Depreciation & amortization	4.6	14.9	39.4	71.8	74.9	74.9	74.9	74.9	
Change in working capital	-5.7	-8.9	0.8	-43.5	-46.6	-31.4	-50.0	0.0	
Chg. in long-term provisions	-3.2	507.5	0.0	0.9	1.4	0.5	0.0	0.0	
Capex	-150.1	-750.1	-650.1	-142.0	-74.8	-75.9	-75.9	-75.9	
Cash flow	-186.6	-319.9	-725.3	-53.6	243.6	347.5	338.5	401.3	5,054.1
Present value	-184.5	-286.6	-589.2	-39.5	162.6	210.7	186.6	202.5	2,547.5
WACC	10.0%	10.3%	10.3%	10.3%	10.3%	10.3%	10.2%	10.1%	10.1%

DCF per share derived from	
Total present value	2,210.3
Mid-year adj. total present value	2,320.3
Net debt / cash at start of year	-172.4
Financial assets	2.9
Provisions and off b/s debt	na
Equity value	2,495.7
No. of shares outstanding	193.5
Discounted cash flow / share	9.90
upside/(downside)	512.0%

Share price	1.62
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DCF avg. growth and earnings assumptions	
Planning horizon avg. revenue growth (2023E-2030E)	n.m.%
Terminal value growth (2030E - infinity)	2.0%
Terminal year ROCE	20.5%
Terminal year WACC	10.1%

Terminal WACC derived from	
Cost of borrowing (before taxes)	7.0%
Long-term tax rate	25.0%
Equity beta	1.39
Unlevered beta (industry or company)	1.15
Target debt / equity	0.7
Relevered beta	1.71
Risk-free rate	3.0%
Equity risk premium	6.0%
Cost of equity	13.3%

Sensitivity analysis DCF

		Long term growth					Share of present value	
		1.0%	1.5%	2.0%	2.5%	3.0%		
Change in WACC (%-points)	2.0%	6.0	6.3	6.7	7.1	7.6	2023E-2026E	-49.8%
	1.0%	7.2	7.6	8.1	8.7	9.3	2027E-2030E	34.5%
	0.0%	8.7	9.2	9.9	10.6	11.5	terminal value	115.3%
	-1.0%	10.5	11.3	12.2	13.2	14.4		
	-2.0%	13.0	14.0	15.3	16.8	18.5		

Source: AlsterResearch

Due to the fact that companies rarely bear sufficient resemblance to peers in terms of geographical exposure, size or competitive strength and in order to adjust for the pitfalls of weak long-term visibility, an Adjusted Free Cash Flow analysis (Adjusted FCF) has been conducted.

The adjusted Free Cash Flow Yield results in a fair value between EUR -2.99 per share based on 2023E and 21.44 EUR per share on 2027E estimates. It has to be kept in mind that FCF yield methodology does not factor in expansion capex.

The main driver of this model is the level of return available to a controlling investor, influenced by the cost of that investors' capital (opportunity costs) and the purchase price – in this case the enterprise value of the company. Here, the adjusted FCF yield is used as a proxy for the required return and is defined as EBITDA less minority interest, taxes and investments required to maintain existing assets (maintenance capex).

FCF yield in EURm	2023E	2024E	2025E	2026E	2027E
EBITDA	-38.4	-41.1	-46.1	146.8	361.1
- Maintenance capex	4.5	14.8	39.2	71.6	74.7
- Minorities	0.0	41.3	51.3	-2.9	-74.1
- tax expenses	-12.1	-30.6	-38.0	2.1	54.9
= Adjusted FCF	-30.8	-66.6	-98.7	75.9	305.6
Actual Market Cap	272.3	272.3	272.3	272.3	272.3
+ Net debt (cash)	-6.3	257.2	916.1	997.5	877.9
+ Pension provisions	0.0	0.0	0.0	0.0	0.0
+ Off b/s financing	0.0	0.0	0.0	0.0	0.0
- Financial assets	6.0	6.0	6.0	6.0	6.0
- Acc. dividend payments	0.0	0.0	0.0	0.0	0.0
<i>EV Reconciliations</i>	-12.3	251.1	910.1	991.5	871.9
= Actual EV'	260.0	523.4	1,182.3	1,263.7	1,144.1
Adjusted FCF yield	-11.9%	-12.7%	-8.3%	6.0%	26.7%
base hurdle rate	7.0%	7.0%	7.0%	7.0%	7.0%
ESG adjustment	1.0%	1.0%	1.0%	1.0%	1.0%
adjusted hurdle rate	6.0%	6.0%	6.0%	6.0%	6.0%
Fair EV	-513.6	-1,110.0	-1,644.7	1,265.3	5,092.8
- <i>EV Reconciliations</i>	-12.3	251.1	910.1	991.5	871.9
Fair Market Cap	-501.3	-1,361.1	-2,554.8	273.9	4,221.0
No. of shares (million)	167.5	180.5	193.5	196.9	196.9
Fair value per share in EUR	-2.99	-7.54	-13.20	1.39	21.44
Premium (-) / discount (+)	-285.0%	-566.1%	-916.2%	-14.0%	1,225.6%

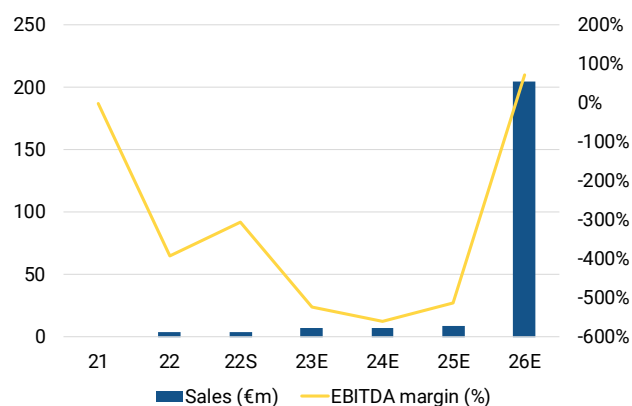
Sensitivity analysis fair value						
Adjusted hurdle rate	4.0%	-4.5	-10.6	-17.5	4.6	34.4
	5.0%	-3.6	-8.8	-14.9	2.7	26.6
	6.0%	-3.0	-7.5	-13.2	1.4	21.4
	7.0%	-2.6	-6.7	-12.0	0.5	17.7
	8.0%	-2.2	-6.0	-11.1	-0.2	15.0

Source: Company data; AlsterResearch

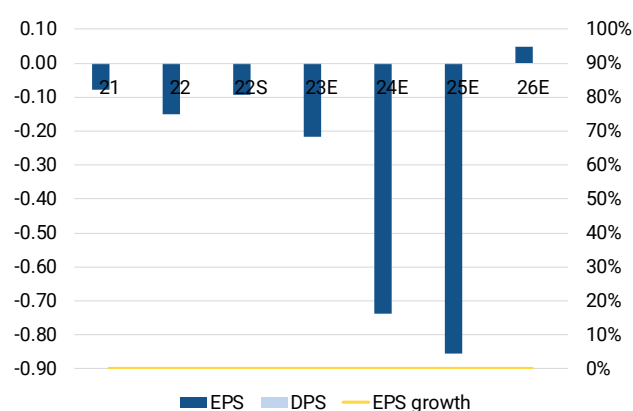
Simply put, the model assumes that investors require companies to generate a minimum return on the investor's purchase price. The required after-tax return equals the model's hurdle rate of 7.0%. Anything less suggests the stock is expensive; anything more suggests the stock is cheap. **ESG adjustments might be applicable, based on the overall Leeway ESG Score. A high score indicates high awareness for environmental, social or governance issues and thus might lower the overall risk an investment in the company might carry. A low score on the contrary might increase the risk of an investment and might therefore trigger a higher required hurdle rate.**

Financials in six charts

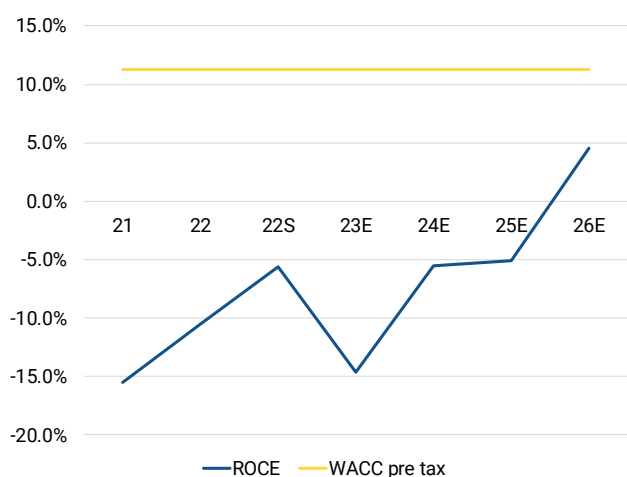
Sales vs. EBITDA margin development



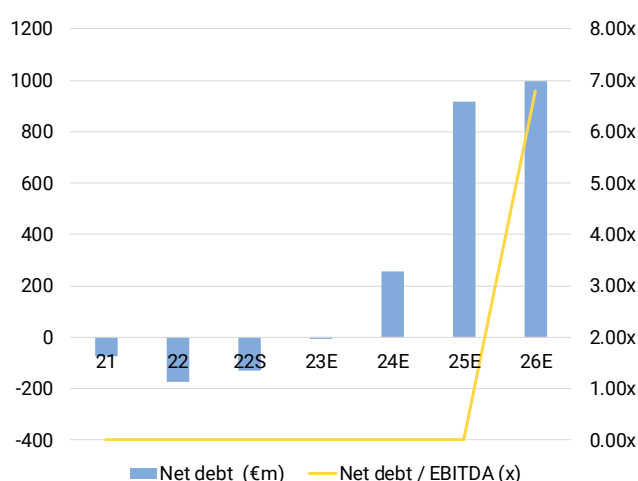
EPS, DPS in EUR & yoy EPS growth



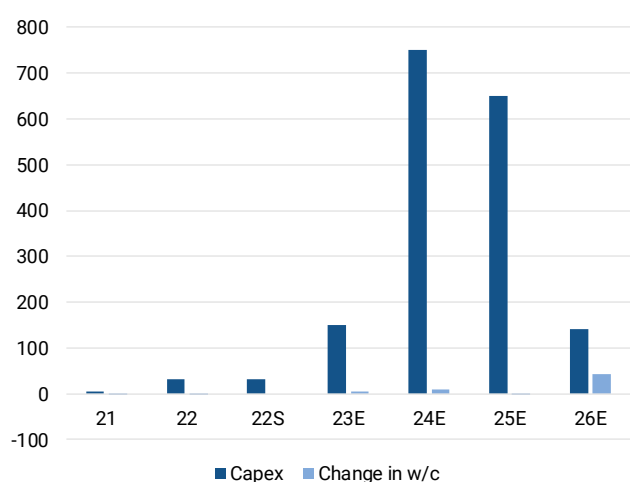
ROCE vs. WACC (pre tax)



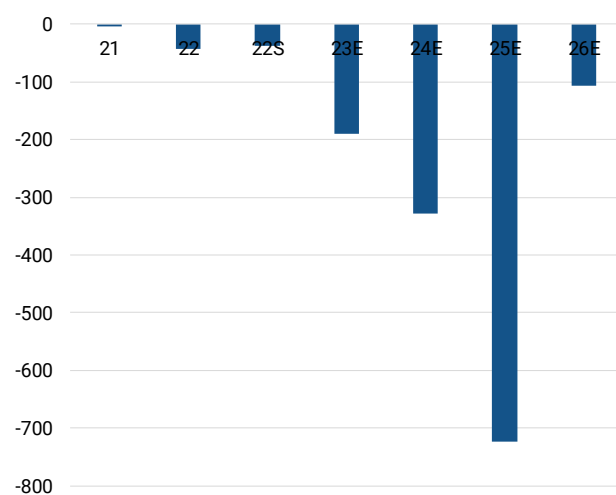
Net debt and net debt/EBITDA



Capex & chgn in w/c requirements in EURm



Free Cash Flow in EURm



Source: Company data; AlsterResearch

Financials

Profit and loss (EURm)	2022	2022S	2023E	2024E	2025E	2026E
Sales	3.8	3.6	7.3	7.3	9.0	204.9
Sales growth	na%	-4.7%	102.8%	0.0%	22.5%	2,176.7%
Cost of sales	-1.2	-0.4	6.0	6.0	40.0	64.6
Gross profit	5.0	4.0	1.3	1.3	-31.0	140.3
SG&A expenses	21.2	14.1	38.5	50.0	50.0	55.0
Research and development	0.0	0.0	0.0	0.0	0.0	0.0
Other operating expenses (income)	-1.3	1.5	5.9	7.3	4.5	10.2
EBITDA	-14.9	-11.0	-38.4	-41.1	-46.1	146.8
Depreciation	2.1	2.3	4.5	14.8	39.2	71.6
EBITA	-17.1	-13.3	-42.9	-55.9	-85.4	75.2
Amortisation of goodwill and intangible assets	0.5	0.6	0.1	0.1	0.1	0.1
EBIT	-17.5	-13.9	-43.0	-56.0	-85.5	75.1
Financial result	-0.8	0.3	-5.3	-66.5	-66.5	-66.5
Recurring pretax income from continuing operations	-18.3	-13.6	-48.3	-122.5	-152.0	8.6
Extraordinary income/loss	0.0	0.0	0.0	0.0	0.0	0.0
Earnings before taxes	-18.3	-13.6	-48.3	-122.5	-152.0	8.6
Taxes	0.4	-0.1	-12.1	-30.6	-38.0	2.1
Net income from continuing operations	-18.7	-13.4	-36.2	-91.9	-114.0	6.4
Result from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0
Net income	-18.7	-13.4	-36.2	-91.9	-114.0	6.4
Minority interest	0.0	0.0	0.0	-41.3	-51.3	2.9
Net profit (reported)	-18.7	-13.4	-36.2	-133.2	-165.3	9.3
Average number of shares	124.67	143.33	167.52	180.52	193.52	196.86
EPS reported	-0.15	-0.09	-0.22	-0.74	-0.85	0.05

Profit and loss (common size)	2022	2022S	2023E	2024E	2025E	2026E
Sales	100%	100%	100%	100%	100%	100%
Cost of sales	-31%	-10%	82%	82%	444%	32%
Gross profit	131%	110%	18%	18%	-344%	68%
SG&A expenses	558%	389%	524%	681%	556%	27%
Research and development	0%	0%	0%	0%	0%	0%
Other operating expenses (income)	-34%	41%	80%	100%	50%	5%
EBITDA	-392%	-304%	-523%	-560%	-513%	72%
Depreciation	57%	63%	61%	201%	436%	35%
EBITA	-449%	-368%	-584%	-761%	-949%	37%
Amortisation of goodwill and intangible assets	13%	16%	2%	2%	1%	0%
EBIT	-461%	-383%	-586%	-762%	-950%	37%
Financial result	-20%	9%	-71%	-905%	-739%	-32%
Recurring pretax income from continuing operations	-481%	-374%	-657%	-1,667%	-1,689%	4%
Extraordinary income/loss	0%	0%	0%	0%	0%	0%
Earnings before taxes	-481%	-374%	-657%	-1,667%	-1,689%	4%
Taxes	10%	-3%	-164%	-417%	-422%	1%
Net income from continuing operations	-491%	-371%	-493%	-1,251%	-1,267%	3%
Result from discontinued operations (net of tax)	0%	0%	0%	0%	0%	0%
Net income	-491%	-371%	-493%	-1,251%	-1,267%	3%
Minority interest	0%	0%	0%	-563%	-570%	1%
Net profit (reported)	-491%	-371%	-493%	-1,813%	-1,837%	5%

Source: Company data; AlsterResearch

Balance sheet (EURm)	2022	2022S	2023E	2024E	2025E	2026E
Intangible assets (exl. Goodwill)	3.6	3.1	3.0	2.9	2.9	4.9
Goodwill	0.0	0.0	0.0	0.0	0.0	0.0
Property, plant and equipment	74.9	100.4	245.9	981.2	1,591.9	1,660.3
Financial assets	2.9	6.0	6.0	6.0	6.0	6.0
FIXED ASSETS	81.5	109.5	254.9	990.1	1,600.9	1,671.2
Inventories	0.1	0.2	0.1	8.0	16.0	30.0
Accounts receivable	4.1	6.3	6.0	6.0	4.9	42.1
Other current assets	0.0	0.0	0.0	0.0	0.0	0.0
Liquid assets	175.4	134.1	81.3	692.8	33.9	-47.5
Deferred taxes	0.0	0.0	0.0	0.0	0.0	0.0
Deferred charges and prepaid expenses	0.0	0.0	0.0	0.0	0.0	0.0
CURRENT ASSETS	179.7	140.6	87.4	706.9	54.9	24.7
TOTAL ASSETS	261.1	250.1	342.4	1,697.1	1,655.8	1,695.8
SHAREHOLDERS EQUITY	247.3	233.2	263.0	236.1	187.1	218.5
MINORITY INTEREST	0.0	0.0	0.0	507.5	507.5	507.5
Long-term debt	2.6	2.7	75.0	950.0	950.0	950.0
Provisions for pensions and similar obligations	0.0	0.1	0.0	0.0	0.0	0.0
Other provisions	1.5	3.2	0.1	0.1	0.1	1.0
Non-current liabilities	4.1	5.9	75.1	950.1	950.1	951.0
short-term liabilities to banks	0.4	0.6	0.0	0.0	0.0	0.0
Accounts payable	6.2	9.4	2.8	3.3	11.0	17.7
Advance payments received on orders	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities (incl. from lease and rental contracts)	0.8	0.8	1.5	0.0	0.0	1.0
Deferred taxes	1.5	0.1	0.1	0.1	0.1	0.1
Deferred income	0.8	0.1	0.0	0.0	0.0	0.0
Current liabilities	9.7	11.0	4.4	3.4	11.1	18.8
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	261.1	250.1	342.4	1,697.1	1,655.8	1,695.8

Balance sheet (common size)	2022	2022S	2023E	2024E	2025E	2026E
Intangible assets (excl. Goodwill)	1%	1%	1%	0%	0%	0%
Goodwill	0%	0%	0%	0%	0%	0%
Property, plant and equipment	29%	40%	72%	58%	96%	98%
Financial assets	1%	2%	2%	0%	0%	0%
FIXED ASSETS	31%	44%	74%	58%	97%	99%
Inventories	0%	0%	0%	0%	1%	2%
Accounts receivable	2%	3%	2%	0%	0%	2%
Other current assets	0%	0%	0%	0%	0%	0%
Liquid assets	67%	54%	24%	41%	2%	-3%
Deferred taxes	0%	0%	0%	0%	0%	0%
Deferred charges and prepaid expenses	0%	0%	0%	0%	0%	0%
CURRENT ASSETS	69%	56%	26%	42%	3%	1%
TOTAL ASSETS	100%	100%	100%	100%	100%	100%
SHAREHOLDERS EQUITY	95%	93%	77%	14%	11%	13%
MINORITY INTEREST	0%	0%	0%	30%	31%	30%
Long-term debt	1%	1%	22%	56%	57%	56%
Provisions for pensions and similar obligations	0%	0%	0%	0%	0%	0%
Other provisions	1%	1%	0%	0%	0%	0%
Non-current liabilities	2%	2%	22%	56%	57%	56%
short-term liabilities to banks	0%	0%	0%	0%	0%	0%
Accounts payable	2%	4%	1%	0%	1%	1%
Advance payments received on orders	0%	0%	0%	0%	0%	0%
Other liabilities (incl. from lease and rental contracts)	0%	0%	0%	0%	0%	0%
Deferred taxes	1%	0%	0%	0%	0%	0%
Deferred income	0%	0%	0%	0%	0%	0%
Current liabilities	4%	4%	1%	0%	1%	1%
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	100%	100%	100%	100%	100%	100%

Source: Company data; AlsterResearch

Cash flow statement (EURm)	2022	2022S	2023E	2024E	2025E	2026E
Net profit/loss	0.0	0.0	-36.2	-91.9	-114.0	6.4
Depreciation of fixed assets (incl. leases)	0.0	0.0	4.5	14.8	39.2	71.6
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.0	0.0	0.1	0.1	0.1	0.1
Others	-11.3	-7.4	-3.2	507.5	0.0	0.9
Cash flow from operations before changes in w/c	-11.3	-7.4	-34.8	430.5	-74.6	79.1
Increase/decrease in inventory	0.0	0.0	0.1	-7.9	-8.0	-14.0
Increase/decrease in accounts receivable	0.0	0.0	0.3	0.0	1.1	-37.2
Increase/decrease in accounts payable	0.0	0.0	-6.6	0.5	7.7	6.7
Increase/decrease in other w/c positions	0.5	0.0	0.6	-1.4	0.0	1.0
Increase/decrease in working capital	0.5	0.0	-5.7	-8.9	0.8	-43.5
Cash flow from operating activities	-11.3	-7.4	-40.4	421.6	-73.8	35.7
CAPEX	-32.2	-30.5	-150.1	-750.1	-650.1	-142.0
Payments for acquisitions	-32.7	0.0	0.0	0.0	0.0	0.0
Financial investments	-0.7	-1.2	0.0	0.0	0.0	0.0
Income from asset disposals	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow from investing activities	-65.6	-31.8	-150.1	-750.1	-650.1	-142.0
Cash flow before financing	-76.9	-39.2	-190.5	-328.4	-723.9	-106.4
Increase/decrease in debt position	-0.2	-0.5	71.7	875.0	0.0	0.0
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	176.2	0.0	66.0	65.0	65.0	25.0
Dividends paid	0.0	0.0	0.0	0.0	0.0	0.0
Others	-4.0	0.0	0.0	0.0	0.0	0.0
Effects of exchange rate changes on cash	6.6	-1.7	0.0	0.0	0.0	0.0
Cash flow from financing activities	178.6	-2.1	137.7	940.0	65.0	25.0
Increase/decrease in liquid assets	101.7	-41.3	-52.8	611.6	-658.9	-81.4
Liquid assets at end of period	175.4	134.1	81.3	692.8	33.9	-47.5

Source: Company data; AlsterResearch

Regional sales split (EURm)	2022	2022S	2023E	2024E	2025E	2026E
Domestic	3.8	3.6	7.3	7.3	9.0	204.9
Europe (ex domestic)	0.0	0.0	0.0	0.0	0.0	0.0
The Americas	0.0	0.0	0.0	0.0	0.0	0.0
Asia	0.0	0.0	0.0	0.0	0.0	0.0
Rest of World	0.0	0.0	0.0	0.0	0.0	0.0
Total sales	3.8	3.6	7.3	7.3	9.0	204.9

Regional sales split (common size)	2022	2022S	2023E	2024E	2025E	2026E
Domestic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Europe (ex domestic)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
The Americas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of World	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total sales	100%	100%	100%	100%	100%	100%

Source: Company data; AlsterResearch

Ratios	2022	2022S	2023E	2024E	2025E	2026E
Per share data						
Earnings per share reported	-0.15	-0.09	-0.22	-0.74	-0.85	0.05
Cash flow per share	-0.09	-0.05	-0.27	2.25	-0.58	-0.18
Book value per share	1.98	1.63	1.57	1.31	0.97	1.11
Dividend per share	0.00	0.00	0.00	0.00	0.00	0.00
Valuation						
P/E	-10.8x	-17.2x	-7.5x	-2.2x	-1.9x	34.2x
P/CF	-17.8x	-31.3x	-6.0x	0.7x	-2.8x	-8.8x
P/BV	0.8x	1.0x	1.0x	1.2x	1.7x	1.5x
Dividend yield (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FCF yield (%)	-5.6%	-3.2%	-16.6%	139.3%	-36.1%	-11.3%
EV/Sales	25.9x	38.7x	36.0x	71.9x	131.9x	6.2x
EV/EBITDA	-6.6x	-12.7x	-6.9x	-12.8x	-25.7x	8.6x
EV/EBIT	-5.6x	-10.1x	-6.2x	-9.4x	-13.9x	16.9x
Income statement (EURm)						
Sales	3.8	3.6	7.3	7.3	9.0	204.9
yoy chg in %	Infinity%	-4.7%	102.8%	0.0%	22.5%	2,176.7%
Gross profit	5.0	4.0	1.3	1.3	-31.0	140.3
Gross margin in %	131.2%	110.2%	18.3%	18.3%	-344.4%	68.5%
EBITDA	-14.9	-11.0	-38.4	-41.1	-46.1	146.8
EBITDA margin in %	-392.3%	-304.3%	-522.6%	-559.8%	-512.6%	71.6%
EBIT	-17.5	-13.9	-43.0	-56.0	-85.5	75.1
EBIT margin in %	-461.5%	-383.4%	-585.7%	-762.3%	-950.0%	36.6%
Net profit	-18.7	-13.4	-36.2	-133.2	-165.3	9.3
Cash flow statement (EURm)						
CF from operations	-11.3	-7.4	-40.4	421.6	-73.8	35.7
Capex	-32.2	-30.5	-150.1	-750.1	-650.1	-142.0
Maintenance Capex	0.0	0.0	4.5	14.8	39.2	71.6
Free cash flow	-43.5	-37.9	-190.5	-328.4	-723.9	-106.4
Balance sheet (EURm)						
Intangible assets	3.6	3.1	3.0	2.9	2.9	4.9
Tangible assets	74.9	100.4	245.9	981.2	1,591.9	1,660.3
Shareholders' equity	247.3	233.2	263.0	236.1	187.1	218.5
Pension provisions	0.0	0.1	0.0	0.0	0.0	0.0
Liabilities and provisions	4.5	6.6	75.1	950.1	950.1	951.0
Net financial debt	-172.4	-130.8	-6.3	257.2	916.1	997.5
w/c requirements	-1.9	-2.9	3.3	10.8	10.0	54.4
Ratios						
ROE	-7.5%	-5.8%	-13.8%	-38.9%	-60.9%	2.9%
ROCE	-7.0%	-5.8%	-12.7%	-3.3%	-5.2%	4.5%
Net gearing	-69.7%	-56.1%	-2.4%	108.9%	489.7%	456.5%
Net debt / EBITDA	11.6x	11.9x	0.2x	-6.3x	-19.9x	6.8x

Source: Company data; AlsterResearch

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