

# Valneva SE

France / Biotechnology  
 Euronext Paris  
 Bloomberg: VLA FP  
 ISIN: FR0004056851

Update

<b>RATING</b>	<b>BUY</b>
<b>PRICE TARGET</b>	<b>€ 8.60</b>
Return Potential	118.1%
Risk Rating	High

## GUIDANCE UPGRADES, BETTER VISIBILITY AND LIQUIDITY OUTLOOK

The final 2023 results release package provided upward guidance revisions and improved medium-term visibility in several key areas. In addition, Valneva has also announced the 18 month extension of the interest-only period on USD100m of debt. This means Valneva will not have to repay any debt principal in either 2024 or 2025 and suggests the company will be able to reach consistent positive free cashflow following the expected 2027 Lyme disease vaccine launch without diluting shareholders. Our recommendation remains Buy with an unchanged price target of €8.60.

**Upward guidance revisions** 2023 EBIT was €-82m (2022: €-113m; FB: €-84m, consensus: €-96m). Due to easing supply constraints, Valneva has raised product sales guidance to €160m-€180m (previously: €150m-€180m). Based on better visibility for Ixchiq and Zika-related expense, 2024 R&D expense guidance is now €60m-€75m (previously: €65m-€90m).

**First medium-term product sales/Ixchiq guidance** Valneva expects product sales to approximately double by 2026. This is close to our existing forecast (2023: €145m; 2026: €290m), but the confirmation that management has a similar estimate is positive. Within product sales, management is guiding for €100m of sales from the chikungunya vaccine, Ixchiq, in year three (2026) after launch, but points out that there may be additional upside from government stockpiling. We are leaving our 2026 Ixchiq forecast unchanged at €137m.

**Gross margin looks set to rise** Valneva has announced that lower margin third-party business will fall to below 5% of product sales by 2026/27, due to the expected end of the Bavarian Nordic collaboration. Together with margin improvements from the more cost-efficient manufacturing process of Ixchiq and operational leverage from new manufacturing facilities in Scotland and Sweden, the gross margin on product sales is expected to return to pre-COVID levels or better. The 2019 and 2023 gross margins were 65.3% and 46.0% respectively.  
 (p.t.o.)

### FINANCIAL HISTORY & PROJECTIONS

	2022	2023	2024E	2025E	2026E	2027E
Revenue (€m)	361.30	153.71	185.72	214.00	300.71	496.33
Y-o-y growth	3.8%	-57.5%	20.8%	15.2%	40.5%	65.1%
EBIT (€m)	-113.44	-82.09	26.52	-42.45	-0.69	162.39
EBIT margin	n.a.	n.a.	14.3%	n.a.	n.a.	32.7%
Net income (€m)	-143.28	-101.43	8.93	-60.05	-15.40	135.66
EPS (diluted) (€)	-1.24	-0.73	0.06	-0.43	-0.11	0.98
DPS (€)	0.00	0.00	0.00	0.00	0.00	0.00
FCF (€m)	-274.67	-217.06	-3.77	-56.79	-12.98	130.87
Net gearing	-62.4%	64.5%	65.0%	186.9%	275.7%	35.3%
Liquid assets (€m)	289.43	126.08	122.31	65.52	21.35	117.03

### RISKS

Risks include, but are not limited to development, partnering, regulatory, competition and retention of key personnel.

### COMPANY PROFILE

Valneva is a specialty vaccine company which develops and commercialises prophylactic vaccines for infectious diseases with significant unmet medical need. Valneva has successfully commercialised two vaccines and has successfully advanced several vaccine candidates into and through the clinic, including candidates against Lyme disease, the chikungunya virus and COVID-19. Valneva is incorporated in France and had 676 employees at end December 2023.

### MARKET DATA

As of 11 Apr 2024

Closing Price	€ 3.94
Shares outstanding	138.91m
Market Capitalisation	€ 547.87m
52-week Range	€ 3.00 / 7.62
Avg. Volume (12 Months)	390,274

Multiples	2023	2024E	2025E
P/E	n.a.	61.4	n.a.
EV/Sales	4.1	3.4	2.9
EV/EBIT	n.a.	23.8	n.a.
Div. Yield	0.0%	0.0%	0.0%

### STOCK OVERVIEW



### COMPANY DATA

As of 31 Dec 2023

Liquid Assets	€ 126.08m
Current Assets	€ 262.82m
Intangible Assets	€ 25.57m
Total Assets	€ 460.05m
Current Liabilities	€ 158.86m
Shareholders' Equity	€ 128.25m

### SHAREHOLDERS

CDC	9.2%
Groupe Grimaud La Corbière	7.7%
Pfizer Inc.	6.9%
Deep Track Capital	5.4%
Free Float and other	70.9%



Figure 1: Historic and forecast product sales

	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
<b>Product sales</b>	103.5	129.5	65.9	63	114.8	144.6	175.7	203.7	290.1	322.7
change (%)	11.8%	25.1%	-49.1%	-4.4%	82.2%	26.0%	21.5%	15.9%	42.4%	11.2%
<b>Product gross profit</b>	63.9	84.6	24.1	23.0	52.2	66.5	87.8	114.8	174.2	210.1
<b>Product gross margin</b>	61.7%	65.3%	36.6%	36.5%	45.5%	46.0%	49.9%	56.3%	60.0%	65.1%
Sales/gross profit by segment:										
<b>Ixiaro</b>										
Sales	69.6	94.1	48.5	45.1	41.3	73.5	91.2	96.4	101.9	106.3
change (%)	16.0%	35.2%	-48.5%	-7.0%	-8.3%	77.7%	24.1%	5.7%	5.7%	4.3%
of which:										
US army sales	29.2	48.0	34.7	38.0	12.5	15.7	29.1	30.5	32.1	33.7
change (%)	5.9%	64.2%	-27.7%	9.5%	-67.0%	25.2%	85.1%	5.0%	5.0%	5.0%
Non-US army sales	40.4	46.1	13.8	7.1	28.8	57.8	62.1	65.8	69.8	72.6
change (%)	24.6%	14.2%	-70.1%	-48.6%	305.6%	100.6%	23.0%	10.0%	10.0%	10.0%
Gross profit	46.1	65.9	23.7	22.6	25.7	38.4	52.0	59.8	66.2	69.1
Gross margin	66.2%	70.0%	48.9%	50.0%	62.2%	52.3%	57.0%	62.0%	65.0%	65.0%
<b>Dukoral</b>										
Sales	30.4	31.5	13.3	2.4	17.3	29.8	33.0	34.7	35.7	36.8
change (%)	6.7%	3.6%	-57.8%	-81.7%	610.4%	71.8%	10.8%	5.0%	3.0%	3.0%
Gross profit	16.7	17.5	-1.0	-5.2	3.2	12.6	16.5	19.1	20.3	21.0
Gross margin	54.8%	55.6%	-7.3%	-211.5%	18.2%	42.4%	50.0%	55.0%	57.0%	57.0%
<b>Ixchiq</b>										
Sales	-	-	-	-	-	-	24.8	52.6	136.9	163.5
change (%)	-	-	-	-	-	-	n.a.	112%	160%	19%
Gross profit	-	-	-	-	-	-10.4	9.9	28.9	82.1	114.5
Gross margin	-	-	-	-	-	n.a.	40.0%	55.0%	60.0%	70.0%
<b>VLA 2001 (COVID-19) sales</b>										
Sales	-	-	-	-	29.6	5.7	-	-	-	-
change (%)	-	-	-	-	n.a.	-80.7%	-	-	-	-
Gross profit	-	-	-	-	-237.5	0.4	-	-	-	-
Gross margin	-	-	-	-	n.a.	7.0%	-	-	-	-
<b>Third party sales</b>										
Sales	3.5	3.9	4.2	15.4	26.5	35.7	26.8	20.1	15.7	16.1
change (%)	-10.3%	11.4%	7.7%	266.7%	72.4%	34.4%	-25%	-25%	-22%	3%
Third party gross profit	1.1	1.1	1.4	5.5	9.8	12.9	9.4	7.0	5.5	5.6
Third party gross margin	31.4%	28.2%	33.3%	35.7%	37.1%	36.1%	35.0%	35.0%	35.0%	35.0%
Third party sales as % product sales	3.4%	3.0%	6.4%	24.4%	23.1%	24.7%	15.2%	9.9%	5.4%	5.0%

Source: Valneva, First Berlin Equity Research estimates

### All geographic markets expected to generate pre-covid volumes or better in 2024

As Valneva reported in February, 2023 sales of the Japanese encephalitis vaccine, Ixiaro, jumped 78% to €73.5m (2022: €41.3m), while Dukoral sales rose 72% to €29.8m (2022: €17.3m). The increase stemmed from recovery in travel markets and price increases. During the post-results conference call, management observed that with respect to Ixiaro and Dukoral, not all geographic markets reached pre-Covid volume levels in 2023. Management further noted that the US is an important example of a market which has not yet reached pre-Covid volume, but that all markets are expected to generate pre-Covid volumes or better in 2024. The US and EU consumer price indices rose by ca. 17% and 20% respectively between January 2019 and December 2023. Assuming Valneva has implemented price rises in line with inflation (we assume 17%) this would imply 2024 Ixiaro and Dukoral sales at constant exchange rates of €110m and €37m respectively. However, at actual exchange rates sales are likely to be lower than this because of the 9% depreciation of the Euro against the USD since 2019. All of the US Department of Defense (DoD) sales of Ixiaro are denominated in the US currency as are, we believe, about one third of the non-DoD sales.

### Lower margin third-party sales to decline, thereby raising overall group margin

Management indicated at the preliminary results stage in February that third-party sales will be lower this year because of supply constraints.



In the final results management stated that third party sales will wind down to 5% of product sales by 2026/27 due to the expected end of the collaboration with Bavarian Nordic.

This means that the contribution of third-party sales will return to the pre-covid level, which was also ca. 5%. The third-party business was built up during the pandemic to compensate for declining sales of Ixiaro and Dukoral. Ixiaro and Dukoral sales are now recovering strongly and the gross margins on these products are higher than for third-party products (in 2023 52.3% and 42.4% respectively vs 36.1%). Stating clearly that third-party product sales will return to pre-pandemic levels reduces uncertainty as to the development of the overall product gross margin. Management stated in the final 2023 report that it expects the product margin to return to pre-covid levels or better over the next two to three years. As figure 1 shows, this would imply a product gross margin of 60-65% compared to 46.0% in 2023. Margin improvement beyond the pre-pandemic level is expected to come from the cost-efficient manufacturing process of Ixchiq and scaling effects from leveraging the company's new and more efficient manufacturing facilities in Scotland and Sweden.

**“Hockey stick” jump in Ixchiq sales likely in 2026** Despite the decline in third-party product sales, management expects overall product sales to double by end 2026. For Ixiaro management is targeting “double-digit annual growth for at least the next three years” and for Ixchiq sales above €100m in year three (2026) after initial launch (2024). Medium-term guidance on Ixchiq is particularly welcome, given that at the time of the preliminary results in February management signalled that 2024 sales for the product would be below €50m, but gave no guidance for subsequent years. Sales of traveller vaccines typically follow a “hockey stick” development in the years after launch, with year three seeing rapid growth after a slow start in years one and two.

**Valneva has initiated a phase 1 study of its second generation Zika vaccine candidate, VLA1601**

On 26 March Valneva announced the initiation of a Phase 1 clinical trial to investigate the safety and immunogenicity of VLA1601, its second-generation adjuvanted inactivated vaccine candidate against the Zika virus. This is the second time that Valneva has worked on the development of VLA1601. The company reported positive interim results of a phase 1 study evaluating the first generation of VLA1601 in November 2018. First-generation VLA1601 met the study's primary endpoint, showing a favourable safety profile in all doses and schedules tested. It was also immunogenic in all treatment groups and induced both dose- and schedule-dependent neutralising antibodies against the Zika virus. Seroconversion (development of antibodies in the blood serum as a result of infection or vaccination) rates reached up to 85.7% on Day 35 (Interim Analysis of Data up to Day 56). The incidence of Zika significantly declined after its peak in 2016 due to high population level immunity in affected countries. In late 2019 Valneva chose to pause development of Zika and during 2020-2022 Valneva's COVID-19 vaccine programme, VAL2001 was a more pressing demand on R&D resources. During both 2021 and 2022, VLA2001 accounted for ca. two thirds of total R&D spending.

**Second iteration of VLA1601 based on optimised Ixiaro platform** Second-generation VLA1601 is being developed on the original manufacturing platform of Ixiaro, which was further optimized to develop VLA2001. The decision to reinstate clinical development of VLA1601 is based on the persistence of Zika transmission in several countries in the Americas and other endemic regions. According to the World Health Organisation (WHO), a total of 89 countries and territories have reported evidence of mosquito-transmitted Zika virus infection to date, but no vaccine is yet available for the prevention of Zika virus infection. Importantly, VLA1601 is compliant, by virtue of it being based on an inactivated whole virus platform, with the WHO's Target Product Profile. The WHO has ruled out certain other technologies for a vaccine that will target vaccination of women in childbearing age and/or pregnant women in an outbreak situation.



**Zika virus is a cause of microcephaly and Guillain-Barré syndrome** Zika virus disease is the first and only flaviviral disease (the genus includes West Nile virus, dengue virus, tick-borne encephalitis virus, yellow fever virus, Zika virus and several other viruses which may cause encephalitis) to have been declared a public health emergency because of devastating birth defects following maternal infection. According to the WHO, there is scientific consensus that Zika virus is a cause of microcephaly and Guillain-Barré syndrome.

**Development of Zika vaccine candidate beyond phase 1 still uncertain** Valneva has pointed out that development of VLA1601 beyond the new phase 1 trial depends on three factors. These are (1) whether Valneva will be able to make VLA1601 a best-in-class vaccine; (2) the vaccine's potential in the travellers' market; and (3) whether there is a possibility to enter into a partnership which could improve profitability along the lines of the CEPI (Coalition for Endemic Preparedness) partnership for the chikungunya vaccine candidate, VLA1553.

**We expect sharp fall in net cash outflow this year** Valneva had cash and cash equivalents of €126.1m at the end of 2023 (2022: €29.4m). The biggest components of the €163.4m cash outflow were the €56.5m net loss (adjusted for non-cash transactions) and a payment of over €100m (booked in the cashflow statement under changes in working capital) in connection with Valneva's contribution to the financing of the Lyme phase 3 trial being carried out by Pfizer. These two cash outflows were partly covered by €81.1m in proceeds from new debt. We expect Valneva's net cash outflow to fall sharply to €3.8m this year due to improving underlying profitability, the €95m proceeds of the Ixchiq priority review voucher (PRV) received in February and also a fall in the Lyme phase 3 contribution paid to Pfizer.

At the end of 2022, Valneva's balance sheet showed a €133.5m refund liability (all current) in connection with the company's obligation to contribute to the cost of the Lyme phase 3 trial. The delay in the trial due to good clinical practice (GCP) violations by a subcontractor caused Pfizer to temporarily pause invoicing to Valneva last year. Following the resolution of the GCP issues, invoicing resumed. At the end of 2023 the refund liability to Pfizer was €33.1m (all current).

**No repayments of borrowings in either 2024 or 2025** In August last year Valneva announced an agreement to double the size of its debt financing agreement with Deerfield Management Company and OrbiMed from USD100m to USD200m. The add-on facility has a three-year interest-only period and will mature in the third quarter of 2028. The loan interest rate remains unchanged at 9.95%. In March this year Valneva announced that it had secured an agreement that repayments of the first USD100 million tranche will start in January 2026 instead of July 2024. Maturity of the first tranche remains the first quarter of 2027 and the interest rate is unchanged at 9.95%. This means that Valneva will not be making principal repayments on its debt in either 2024 or 2025.

Figure 2 overleaf shows changes to our forecasts. For 2024 a €10.2m upgrade to our Ixiaro forecast is cancelled out by an equivalent increase in our G&A estimate. The 13.4% reduction in our 2025 product revenue forecast reflects a more conservative near-term prognosis for Ixchiq as discussed above. We have raised our 2025 G&A forecast to reflect the increase in our 2024 number. We also start comprehensive 2026 and 2027 forecasts.



Figure 2: Changes to our forecasts

All figures in EUR '000	2024E			2025E			2026E	2027E
	Old	New	% Δ	Old	New	% Δ	New	New
<b>Product revenues</b>	<b>165,260</b>	<b>175,725</b>	<b>6.3%</b>	<b>235,255</b>	<b>203,696</b>	<b>-13.4%</b>	<b>290,104</b>	<b>355,406</b>
of which:								
ixiaro	80,955	91,200	12.7%	85,349	96,381	12.9%	101,858	106,253
Dukoral	32,780	33,000	0.7%	34,419	34,650	0.7%	35,690	36,760
Ixchiq	24,750	24,750	0.0%	87,641	52,585	-40.0%	136,893	163,533
Lyme royalties/milestones	0	0	-	0	0	-	0	32,727
Third party revenues	26,775	26,775	0.0%	27,846	20,081	-27.9%	15,663	16,133
Other revenue	9,000	10,000	11.1%	9,270	10,300	11.1%	10,609	140,927
<b>Total revenues</b>	<b>174,260</b>	<b>185,725</b>	<b>6.6%</b>	<b>244,525</b>	<b>213,996</b>	<b>-12.5%</b>	<b>300,713</b>	<b>496,334</b>
Gross profit	83,138	88,025	5.9%	131,214	115,042	-12.3%	174,455	353,160
margin (%)	47.7%	47.4%	-	53.7%	53.8%	-	58.0%	71.2%
Sales & marketing	-39,575	-54,000	-	-51,756	-57,035	-	-72,526	-88,852
General & administrative	-40,000	-50,000	-	-42,000	-52,961	-	-55,120	-60,419
Research & development	-80,000	-67,500	-	-80,000	-67,500	-	-67,500	-47,500
Other income	100,000	110,000	10.0%	6,000	20,000	233.3%	20,000	6,000
<b>EBIT</b>	<b>23,564</b>	<b>26,525</b>	<b>12.6%</b>	<b>-36,542</b>	<b>-42,455</b>	<b>n.a.</b>	<b>-691</b>	<b>162,389</b>
margin (%)	13.5%	14.3%	-	-14.9%	-19.8%	-	-0.2%	32.7%
Net financial result	-14,566	-17,596	-	-11,539	-17,596	-	-14,714	-11,660
<b>EBT</b>	<b>8,998</b>	<b>8,929</b>	<b>-0.8%</b>	<b>-48,082</b>	<b>-60,051</b>	<b>n.a.</b>	<b>-15,404</b>	<b>150,729</b>
Tax	-900	0	-	0	0	-	0	-15,073
<b>Net income</b>	<b>8,098</b>	<b>8,929</b>	<b>10.3%</b>	<b>-48,082</b>	<b>-60,051</b>	<b>n.a.</b>	<b>-15,404</b>	<b>135,656</b>
EPS (in EUR)	0.06	0.06	0.0%	-0.35	-0.43	n.a.	-0.11	0.98
<b>Adjusted EBITDA</b>	<b>42,346</b>	<b>45,478</b>	<b>7.4%</b>	<b>-17,276</b>	<b>-23,030</b>	<b>n.a.</b>	<b>19,221</b>	<b>182,801</b>

Source: First Berlin Equity Research

**Lyme early commercialisation milestones likely to be concentrated in 2027** The Collaboration and License Agreement with Pfizer for the development of the Lyme disease vaccine candidate, VLA15, stipulates milestone payments to Valneva of USD408m, of which USD165m have already been received. Of the balance of USD243m, USD143m are early commercialisation milestones and USD100m are cumulative sales milestones. We expect that the VLA15 phase 3 trial will be successful, and that the vaccine will be approved and successfully commercialised. Based on this expectation, we assume Valneva will receive USD143m in VLA15 early commercialisation milestones in 2027.



**We maintain our Buy recommendation at an unchanged price target of €8.60** In line with the company's new medium term guidance, changes to our valuation model reflect higher margins on Valneva's travel vaccines than we previously modelled. However, this is cancelled out by a lower than forecast proforma net cash position, which in part stems from a higher working capital cash outflow in Q4 than we had expected. This figure was €52m in the final quarter compared with €93m during the first nine months. Our overall valuation is unchanged and we maintain our Buy recommendation and €8.60 price target.

**Figure 3: Valuation model**

Compound	Project <sup>1)</sup>	Present Value	Market Size 2030	Market Share 2030	Sales 2030	PACME Margin <sup>2)</sup>	Discount Factor	Time to Market
Ixiaro	Japanese Encephalitis	€524.3M	€138.0M	90.0%	€1242M	40%	9.0%	-
Dukoral	Cholera & ETEC	€133.1M	€163.9M	25.0%	€41.0M	30%	90%	-
VLA15	Lyme Disease	€792.3M	€909.1M	70.0%	€636.4M	18%	10.0%	3 Years
VLA 1553	Chikungunya virus	€803.2M	€463.0M	58.9%	€272.7M	45%	9.0%	-
EB66 cell line	Technology Platform	€11.9M			€19.7M	15%	9.0%	-
<b>PACME PV</b>		<b>€2,264.7M</b>						
<b>Costs PV<sup>3)</sup></b>		<b>€1,263.5M</b>						
<b>NPV</b>		<b>€1,001.2M</b>						
PV grants, collabs., 3rd party distrib.		€181.8M						
Proforma net cash (inc. PRV)		€12.2M						
<b>Fair Value</b>		<b>€1,195.2M</b>						
Proforma share count (fully diluted)		138,912K						
<b>Price Target</b>		<b>€8.60</b>						

1) A project typically refers to a specific indication or, where necessary or relevant, a combination between indication and geographic market

2) PACME (Profit After Costs and Marketing Expenses) reflects the company's profit share on future revenues.

This share may be derived in the form of royalties (outsourced marketing/manufacturing) or operating EBITDA margin (in-house model), or some mix of both (depending on the specific parameters of partnership agreements)

3) Includes company-level R&D, G&A, Financing Costs and CapEx; COGS and S&M are factored into the PACME margin for each project

Source: First Berlin Equity Research estimates

**Figure 4: Changes to our valuation model**

	Old	New	Delta
<b>PACME PV</b>	<b>€1,992.5M</b>	<b>€2,264.7M</b>	<b>13.7%</b>
Costs PV	€1,031.6M	€1,263.5M	22.5%
<b>NPV</b>	<b>€961.0M</b>	<b>€1,001.2M</b>	<b>4.2%</b>
PV grants, collabs., 3rd party distrib. milestones	€161.5M	€181.8M	12.6%
Proforma net cash (inc. PRV)	€71.8M	€12.2M	-82.9%
<b>Fair Value</b>	<b>€1,194.3M</b>	<b>€1,195.2M</b>	<b>0.1%</b>
Pro-forma share count	138,912K	138,912K	0.0%
<b>Price Target</b>	<b>€8.60</b>	<b>€8.60</b>	<b>0.0%</b>

Source: First Berlin Equity Research estimates



## INCOME STATEMENT

All figures in EUR '000	2022	2023	2024E	2025E	2026E	2027E
Product sales	114,797	144,624	175,725	203,696	290,104	355,406
Other income	246,506	9,089	10,000	10,300	10,609	140,927
<b>Total revenues</b>	<b>361,303</b>	<b>153,713</b>	<b>185,725</b>	<b>213,996</b>	<b>300,713</b>	<b>496,334</b>
Cost of materials/goods sold	-324,441	-100,875	-97,700	-98,955	-126,258	-143,174
<b>Gross Profit</b>	<b>36,862</b>	<b>52,838</b>	<b>88,025</b>	<b>115,042</b>	<b>174,455</b>	<b>353,160</b>
Sales & marketing	-23,509	-48,752	-54,000	-57,035	-72,526	-88,852
General & administrative	-34,073	-47,799	-50,000	-52,961	-55,120	-60,419
Research & development	-104,922	-59,894	-67,500	-67,500	-67,500	-47,500
Other operating items, net	12,199	21,520	110,000	20,000	20,000	6,000
<b>Operating income (EBIT)</b>	<b>-113,443</b>	<b>-82,087</b>	<b>26,525</b>	<b>-42,455</b>	<b>-691</b>	<b>162,389</b>
Net financial result	-18,794	-22,115	-17,596	-17,596	-14,714	-11,660
Foreign exchange gains/(loss)	-12,587	5,573	0	0	0	0
<b>Pre-tax income (EBT)</b>	<b>-144,815</b>	<b>-98,629</b>	<b>8,929</b>	<b>-60,051</b>	<b>-15,404</b>	<b>150,729</b>
Income taxes	1,536	-2,800	0	0	0	-15,073
<b>Net income / loss</b>	<b>-143,279</b>	<b>-101,429</b>	<b>8,929</b>	<b>-60,051</b>	<b>-15,404</b>	<b>135,656</b>
<b>EPS</b>	<b>-1.24</b>	<b>-0.73</b>	<b>0.06</b>	<b>-0.43</b>	<b>-0.11</b>	<b>0.98</b>
<b>Adjusted EBITDA</b>	<b>-69,200</b>	<b>-65,187</b>	<b>45,478</b>	<b>-23,030</b>	<b>19,221</b>	<b>182,801</b>
<b>Ratios as % of total revenues</b>						
Gross margin	10.2%	34.4%	47.4%	53.8%	58.0%	71.2%
EBITDA margin	-19.2%	-42.4%	24.5%	-10.8%	6.4%	36.8%
EBIT margin	-31.4%	-53.4%	14.3%	-19.8%	-0.2%	32.7%
Net margin	n.a.	n.a.	4.8%	n.a.	n.a.	27.3%
<b>Expenses as % of total revenues</b>						
Sales & marketing	-6.5%	-31.7%	-29.1%	-26.7%	-24.1%	-17.9%
General & administrative	-9.4%	-31.1%	-26.9%	-24.7%	-18.3%	-12.2%
Research & development	-29.0%	-39.0%	-36.3%	-31.5%	-22.4%	-9.6%
<b>Y-Y Growth</b>						
Product sales	82.3%	26.0%	21.5%	15.9%	42.4%	22.5%
Total revenues	3.8%	-57.5%	20.8%	15.2%	40.5%	65.1%
Operating income (EBIT)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net income / loss	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.





## BALANCE SHEET

All figures in EUR '000	2022	2023	2024E	2025E	2026E	2027E
<b>Assets</b>						
<b>Current Assets, Total</b>	<b>424,659</b>	<b>262,824</b>	<b>259,373</b>	<b>212,182</b>	<b>215,719</b>	<b>355,148</b>
Cash and cash equivalents	289,430	126,080	122,308	65,520	21,349	117,025
Receivables	23,912	41,645	40,417	44,813	63,823	78,189
Inventories	35,104	44,466	43,931	50,924	72,526	88,852
Other current assets	76,213	50,633	52,717	50,924	58,021	71,081
<b>Non-Current Assets, Total</b>	<b>196,685</b>	<b>197,238</b>	<b>199,229</b>	<b>200,563</b>	<b>213,532</b>	<b>222,253</b>
Property, plant & equipment	112,435	136,198	135,202	134,176	133,119	132,030
Right of use assets	41,603	20,392	24,777	28,721	40,905	50,112
Intangibles	28,711	25,567	22,343	19,117	15,889	12,657
Equity-accounted investees	0	0	0	0	0	0
Other assets	8,299	8,489	10,315	11,956	17,028	20,861
Deferred tax assets	5,637	6,592	6,592	6,592	6,592	6,592
<b>Total Assets</b>	<b>621,344</b>	<b>460,062</b>	<b>458,602</b>	<b>412,744</b>	<b>429,252</b>	<b>577,401</b>
<b>Shareholders' Equity &amp; Debt</b>						
<b>Current Liabilities, Total</b>	<b>277,392</b>	<b>158,863</b>	<b>97,909</b>	<b>137,457</b>	<b>186,542</b>	<b>295,878</b>
Short-term debt	11,580	44,079	0	31,189	35,195	110,463
Accounts payable	41,491	44,303	53,830	62,399	88,868	108,872
Other current liabilities and provisions	36,780	11,427	13,884	16,094	22,922	28,081
Current finance lease liabilities	25,411	2,879	3,498	4,055	5,775	7,075
Tax and employee-related liabilities	15,738	16,209	19,695	22,830	32,514	39,833
Current tax liability	532	632	768	890	1,268	1,553
Contract liabilities and refund liabilities	145,860	39,334	6,234	0	0	0
<b>Longterm Liabilities, Total</b>	<b>124,155</b>	<b>172,952</b>	<b>217,105</b>	<b>191,645</b>	<b>174,369</b>	<b>77,426</b>
Long term debt	87,227	132,768	176,847	145,658	110,463	0
Non-current finance lease liabilities	28,163	29,090	35,346	40,972	58,352	71,487
Other liabilities	1,436	1,153	1,384	1,592	2,233	2,718
Contract liabilities and refund liabilities	6,635	6,303	0	0	0	0
<b>Shareholders Equity</b>	<b>219,797</b>	<b>128,247</b>	<b>143,588</b>	<b>83,643</b>	<b>68,341</b>	<b>204,097</b>
<b>Total Consolidated Equity and Debt</b>	<b>621,344</b>	<b>460,062</b>	<b>458,602</b>	<b>412,744</b>	<b>429,252</b>	<b>577,401</b>
<b>Ratios</b>						
Current ratio (x)	1.53	1.65	2.65	1.54	1.16	1.20
Quick ratio (x)	1.40	1.37	2.20	1.17	0.77	0.90
Net gearing	-62.4%	64.5%	65.0%	186.9%	275.7%	35.3%
Book value per share (€)	2.42	1.41	1.58	0.92	0.75	2.24
Net debt	-137,049	82,736	93,382	156,353	188,436	72,000
Equity ratio	35.4%	27.9%	31.3%	20.3%	15.9%	35.3%





## CASH FLOW STATEMENT

All figures in EUR '000	2022	2023	2024E	2025E	2026E	2027E
<b>Net income / loss</b>	<b>-143,279</b>	<b>-101,429</b>	<b>8,929</b>	<b>-60,051</b>	<b>-15,404</b>	<b>135,656</b>
Adjustments for non-cash transactions	44,070	44,984	18,953	19,425	19,911	20,412
Changes in non-current op. assets/lias.	-147,713	514	0	0	0	0
Changes in working capital	1,732	-145,578	-16,920	-989	-1,863	-9,105
Other adjustments	0	0	0	0	0	0
Income tax	-154	-1,236	0	0	0	0
<b>Operating cash flow</b>	<b>-245,344</b>	<b>-202,745</b>	<b>10,961</b>	<b>-41,615</b>	<b>2,644</b>	<b>146,963</b>
Property, plant and equipment	-29,246	-14,231	-14,658	-15,098	-15,551	-16,017
Investments in intangibles	-76	-81	-75	-75	-75	-75
<b>Free cash flow</b>	<b>-274,666</b>	<b>-217,057</b>	<b>-3,772</b>	<b>-56,788</b>	<b>-12,982</b>	<b>130,871</b>
Acquisitions & disposals, net	8	-7,482	0	0	0	0
Interest received	260	1,210	0	0	0	0
<b>Investing cash flow</b>	<b>-29,054</b>	<b>-20,585</b>	<b>-14,733</b>	<b>-15,173</b>	<b>-15,626</b>	<b>-16,092</b>
Debt financing, net	37,538	79,014	0	0	-31,189	-35,195
Equity financing, net	189,837	-240	0	0	0	0
Payment of lease liabilities	-3,048	-3,127	0	0	0	0
Interest expense	-9,211	-12,567	0	0	0	0
<b>Cash flow from financing</b>	<b>215,116</b>	<b>63,080</b>	<b>0</b>	<b>0</b>	<b>-31,189</b>	<b>-35,195</b>
Forex & other	2,026	-3,100	0	0	0	0
<b>Net cash flows</b>	<b>-57,256</b>	<b>-163,350</b>	<b>-3,772</b>	<b>-56,788</b>	<b>-44,171</b>	<b>95,676</b>
Cash and equivs., start of the year	346,686	289,430	126,080	122,308	65,520	21,349
<b>Cash and equivs., end of the year</b>	<b>289,430</b>	<b>126,080</b>	<b>122,308</b>	<b>65,520</b>	<b>21,349</b>	<b>117,025</b>
<b>Adj. EBITDA/share</b>	<b>-0.60</b>	<b>-0.47</b>	<b>0.33</b>	<b>-0.17</b>	<b>0.14</b>	<b>1.32</b>
<b>Y-Y Growth</b>						
Operating cashflow	n.a.	n.a.	n.a.	n.a.	n.a.	5459.0%
Free cashflow	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA/share	n.a.	n.a.	n.a.	n.a.	n.a.	851.1%

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Anschrift:

First Berlin Equity Research GmbH  
Friedrichstr. 34  
10117 Berlin  
Germany

Vertreten durch den Geschäftsführer: Martin Bailey

Telefon: +49 (0) 30-80 93 9 680

Fax: +49 (0) 30-80 93 9 687

E-Mail: [info@firstberlin.com](mailto:info@firstberlin.com)

Amtsgericht Berlin Charlottenburg HR B 103329 B

UST-Id.: 251601797

Ggf. Inhaltlich Verantwortlicher gem. § 6 MDStV

First Berlin Equity Research GmbH

**Authored by: Simon Scholes, Analyst**

**All publications of the last 12 months were authored by Simon Scholes.**

**Company responsible for preparation: First Berlin Equity Research GmbH, Friedrichstraße 69, 10117 Berlin**

The production of this recommendation was completed on 12 April 2024 at 10:19

**Person responsible for forwarding or distributing this financial analysis: Martin Bailey**

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Category		1	2
Current market capitalisation (in €)		0 - 2 billion	> 2 billion
Strong Buy <sup>1</sup>	An expected favourable price trend of:	> 50%	> 30%
Buy	An expected favourable price trend of:	> 25%	> 15%
Add	An expected favourable price trend of:	0% to 25%	0% to 15%
Reduce	An expected negative price trend of:	0% to -15%	0% to -10%
Sell	An expected negative price trend of:	< -15%	< -10%

<sup>1</sup> The expected price trend is in combination with sizable confidence in the quality and forecast security of management.

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Report No.:	Date of publication	Previous day closing price	Recommendation	Price target
Initial Report	26 April 2017	€2.52	Buy	€4.00
2...35	↓	↓	↓	↓
36	10 February 2022	€15.03	Buy	€22.10
37	6 July 2022	€11.12	Add	€12.00
38	26 July 2022	€9.75	Buy	€12.50
39	19 August 2022	€9.91	Add	€12.00
40	4 April 2023	€4.86	Buy	€8.90
41	22 May 2023	€5.69	Buy	€8.90
42	12 October 2023	€5.46	Buy	€8.90
43	27 February 2024	€3.21	Buy	€8.60
44	Today	€3.94	Buy	€8.60

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