

A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics.

**Private Equity Investment Committee Paper: VARTA as an attractive investment opportunity in the battery industry**

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**Abstract:**

This work was performed by a group of 4 members of Nova School of Business and Economics' Master in Finance. The purpose is to develop an Investment Committee Paper (ICP) of VARTA AG, in which the main goal is to evaluate the company's attractiveness for a leverage buyout. VARTA is a German battery manufacturing company that operates globally through two high-growth business segments, offering a wide portfolio of batteries suitable for many different applications. The choice of VARTA was a result of a combination of attractive factors, such as, the low debt levels and stable Cash Flows, its global presence and leadership positioning in most of its end markets, its competitive edge and the future growth prospects. Both the company and the respective market were analyzed in order to evaluate the firm's positioning, financial performance and its ability to capture the current and future market trends within the battery industry and all its end markets. Based on such analysis, we defined the most suitable investment strategies, focusing in maximizing the firm's value creation and to potentiate a solid exit and attractive returns after the 5 year holding period.

**Keywords:** Private Equity, VARTA AG, Battery market, Electric Vehicles, Investment Opportunity, Microbatteries & Solutions, Household, Growth, Acquisition, Varta Consumer

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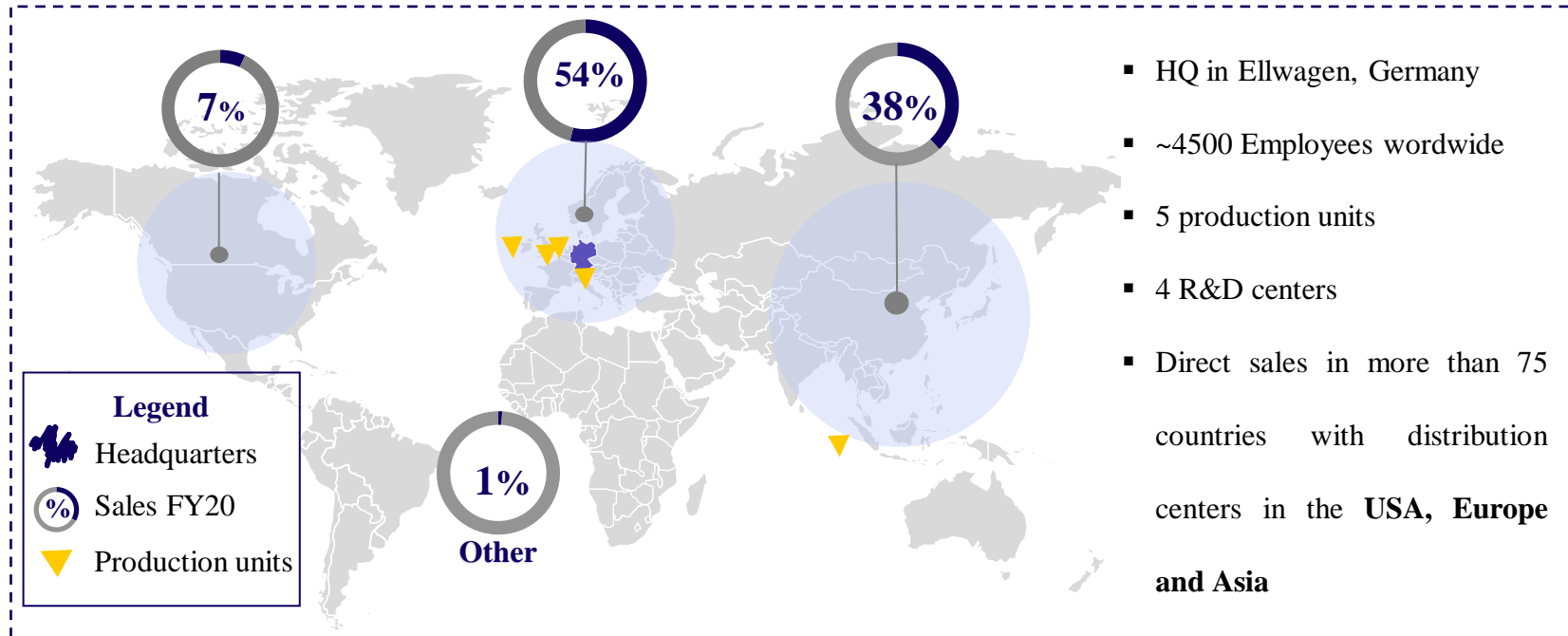
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**With operations mainly concentrated in Europe and market leadership in core segments, VARTA produces and markets a comprehensive battery portfolio, offering high premium battery solutions for a wide range of applications**

**Company Snapshot**

- VARTA AG is a **battery manufacturing global company** for automotive and medical devices, industrial and consumer markets
- Founded in 1887 the company has been listed on the **Frankfurt Stock Exchange since 2017**
- VARTA’s business activities are focused in (1) **R&D**, (2) **production** and (3) **distribution**
- The firm offers a comprehensive battery portfolio divided into two separate business segments: (1) **Micro- batteries & Solutions** and (2) **Household Batteries**
- **Market leader in Hearing Aids** sub-segment
- **European market leader in Household batteries** segment since 2020, with the **acquisition of VARTA consumer**

**VARTA’s Footprint**



**Business Model**

Microbatteries & Solutions			Household Batteries	
Microbatteries for Hearing Aids	Lithium-ion coin power & other special batteries	Power Pack Solutions – Lithium-ion Battery Packs	Consumer Batteries	Energy Storage Systems

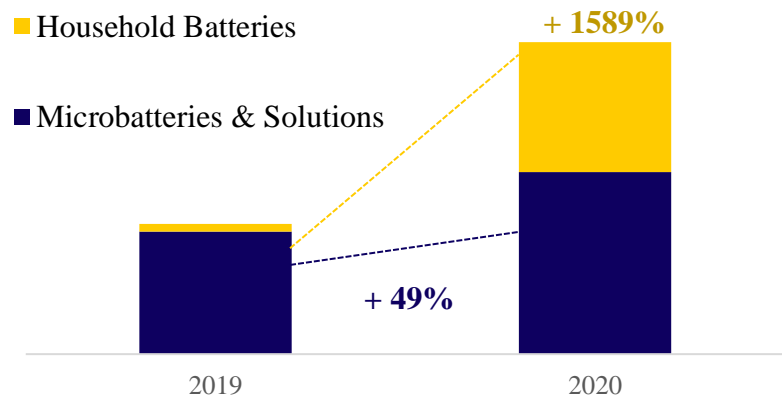
**Applications**

Hearing Aids	Smart wearables/devices; Automotive/ Medical devices; industrial robotics; IT/Communications	Entertainment; Household	Residential and Industrial energy
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## Resilience against market downturns with proven strong growth in revenues and EBITDA in 2020, despite the pandemic, having the acquisition of VARTA Consumer and the capacity expansion efforts driving results



### Revenue Growth FY20



- + **139,8%** of revenue growth in 2020, of which **47%** corresponds to **organic growth**
- Successful **acquisition of VARTA Consumer** in 2020, responsible for **92%** of total revenue growth
- **Exponential growth in revenues and EBITDA in 2020** in major part explained by the M&A transaction and Expansion of Li-Ion production capacity
- **Normalized EBITDA** considered due to abnormal events

### Expansion period:

- 2017: successful **IPO** aimed to raise capital to meet lithium-ion batteries demand
- 2020: (1) **Acquisition of VARTA Consumer** and consequent integration of new business segment; (2) **Massive expansion of production facilities** (new production facility operational in 2022); (3) **Funding commitment of ~ € 300 M** from federal/ state governments as part of IPCEI (Important Projects of Common European Interest)

### Key Financial results

<i>Values in million euros</i>	2017	2018	2019	2020	LTM
<b>Total Revenues</b>	<b>242,2</b>	<b>271,7</b>	<b>362,7</b>	<b>869,6</b>	<b>876,2</b>
<i>Microbatteries &amp; Solutions</i>	228,7	253,4	340,9	508,1	501,6
<i>Household Batteries</i>	12,5	17,2	21,4	361,1	374,6
COGS	(99,9)	(106,9)	(123,5)	(315,5)	(315,5)
<b>Normalized EBITDA</b>	<b>39,1</b>	<b>50,2</b>	<b>97,5</b>	<b>241,0</b>	<b>251,2</b>
<b>FFCF excluding expansion &amp; M&amp;A</b>	<b>25,5</b>	<b>69,1</b>	<b>107,5</b>	<b>270,7</b>	<b>n.a.</b>
Net Debt	(37,5)	(7,5)	8,8	501,8	n.a

Negative and positive drivers in different segments (e.g., disruption of automotive industry; raising demand for medical devices) arise from **COVID-19 pandemic** resulting in an overall **null impact** in 2020 financial results

## Skilled and competent management team able to cope with firm-specific and market risks while benefiting from opportunities, proven by strong track record

Market Growth Drivers	<b>DEMOGRAFIC</b>	<b>TECHNOLOGICAL PROGRESS</b>	<b>CONNECTIVITY</b>	<b>RENEWABLE ENERGIES</b>
	<p><b>Elderly population</b> is expected to increase substantially (around 6,7%) worldwide as well as <b>life expectancy</b> <b>until 2050</b></p>	<p>Consumer preferences moving towards <b>high tech products</b>: need for reliable and high-quality energy solutions and high energy density batteries</p>	<p>Development of the <b>internet of things (IoT)</b> and of <b>smarter and more efficient solutions</b></p>	<p>Increased importance of renewable energies, energy efficiency and EU climate targets driving <b>sustainable growth rates for energy storage</b></p>
	Hearing Aids	Li-ion technology (e.g. smart devices, IT, robotics, communications, etc.)	Energy storage systems	

### Management Team



**Herbert Schein, CEO**

+ 25 years



**Armin Hessenberger, CFO**

+5 years



**Prof. DDr. Michael Tojner, Chairman**

+15 years

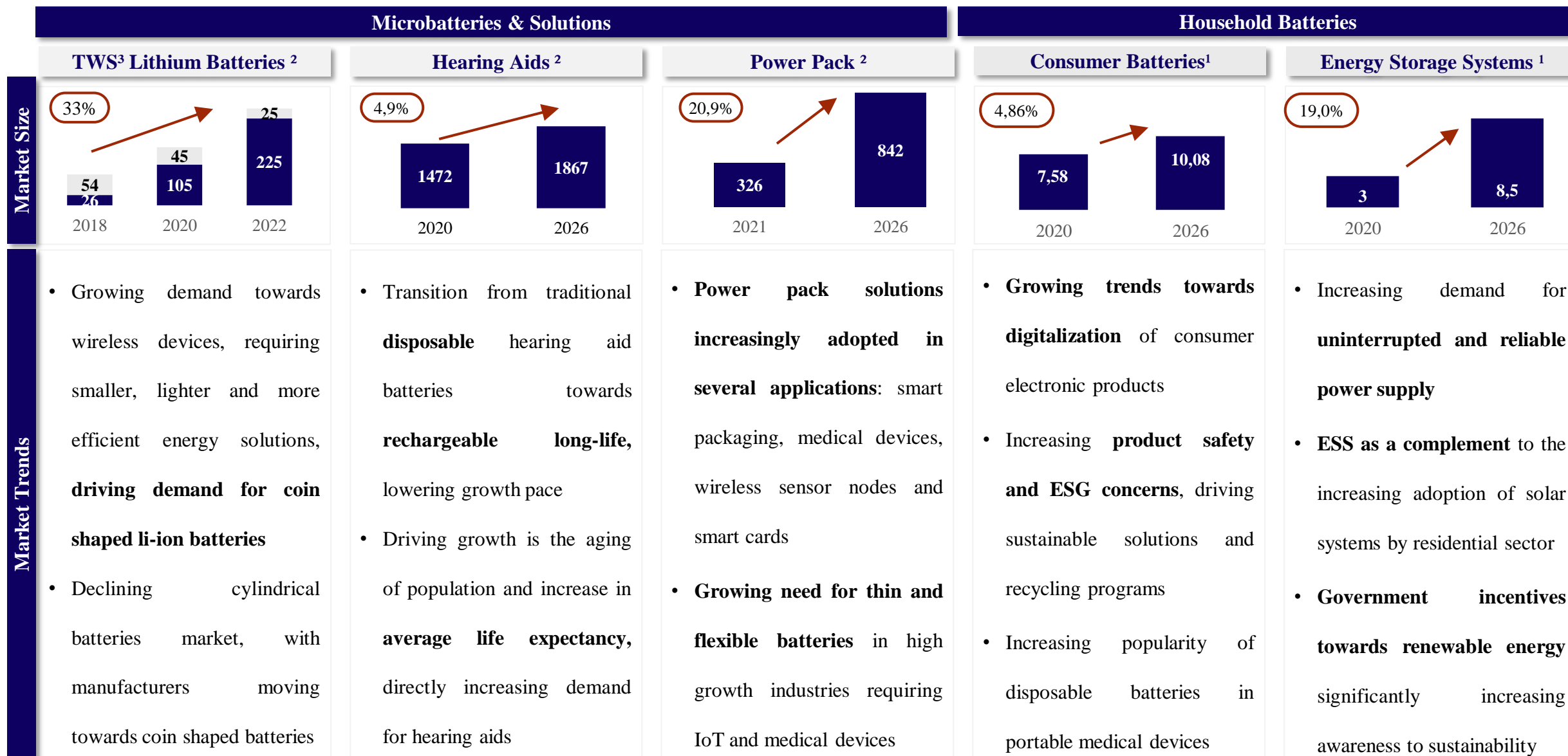
Owner ~56% share



### Key Risks

- Risk of **technological substitution**
- **Price pressure** from competitors (mainly from Asia) due to their labor cost advantage
- Dependence on **major costumers** (such as Apple, Samsung, Bose)
- Exposure to **environmental, health and safety** regulations potentiating financial liabilities
- Fluctuations in **commodities price** (e.g. Li, Ni, Co, Mn, etc)
- **Potential prevalence of COVID-19 industry effects**, namely the significant decrease in elderly population and disruptions in the supply chain.

## Positive outlook for VARTA’s market segments: derived by favorable trends, the expectation is to observe significant growth in the upcoming years



1) Values in Bn EUR 2) Values in M EUR 3) True Wireless Headsets  
Source: Mordor Intelligence






CAGR

## Overall end markets expected to register double digit growth over the forecasted period, apart from the mature hearing aids market

	Smart Wearables & Medical Devices	Connected Car Devices	Internet of Things (IoT)	Industrial Robotics	Hearing Aids
End-market growth	<p>19,5%</p>	<p>21,3%</p>	<p>10,53%</p>	<p>14.11%</p>	<p>6.4%</p>
Market Trends	<ul style="list-style-type: none"> <li>Increased innovation and <b>new product categories</b> in recent years</li> <li><b>Boom in the fitness trend</b> (smartwatches)</li> <li>Demand for smart assistants (hearables)</li> </ul>	<ul style="list-style-type: none"> <li>Vehicle automation as the <b>most lucrative opportunity</b> for connected car devices</li> <li>Raising demand for <b>infotainment systems</b> (in-car Wi-Fi hotspots and data services)</li> </ul>	<ul style="list-style-type: none"> <li>The significant <b>growth of the Retail industry</b> (IoT used to improve operational efficiency and customer experience)</li> <li>Increasing adoption of <b>wireless technologies, data analytics, cloud platforms</b></li> </ul>	<ul style="list-style-type: none"> <li>Robotics play a crucial role in the rising adoption of <b>smart factory systems</b></li> <li>Growing adoption of <b>automation in automotive industry</b> and increasing demand for <b>Electric Vehicles</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Shortage of skilled professionals</b> to perform otolaryngology procedures in several countries</li> <li>Prevalence of <b>hearing loss</b></li> <li><b>Increase in average life expectancy</b></li> </ul>
Key Players					

## Despite being surrounded by a competitive strong environment, VARTA’s technological leadership and operational efficiency allows the firm to sustain its strong market positioning

### Porter’s 5 Forces

 <b>Power of suppliers</b>	 <b>Threat of new entrants</b>	 <b>Thread of substitute products</b>	 <b>Power of costumers</b>	 <b>Competition in the industry</b>
<ul style="list-style-type: none"> <li>Extensive long-term relationship <b>network of suppliers</b></li> <li><b>In-house</b> made product components for most products</li> <li>Raw materials can impact business activities: somewhat <b>volatile lithium prices</b></li> </ul>	<ul style="list-style-type: none"> <li>High <b>entry barriers to compete with VARTA</b> due to technological and human capital expertise and existing patents</li> <li>Strong investments in R&amp;D to keep in touch with the most innovative technologies</li> </ul>	<ul style="list-style-type: none"> <li><b>Risk of technological substitution:</b> VARTA protects the business by betting in a strong R&amp;D network</li> <li><b>Technological leader</b> in high density batteries and <b>focus on lithium batteries</b> to which the market is shifting towards</li> </ul>	<ul style="list-style-type: none"> <li><b>Large number of reputable costumers</b> in diverse sectors</li> <li>Small number of customers in the Entertainment segment, the firm’s largest revenue share segment</li> <li>Most of firm’s <b>sales dominated by 4 major clients</b></li> </ul>	<ul style="list-style-type: none"> <li>Highly spread competition</li> <li>Price pressures from Asian competitors (lower labor costs)</li> <li>Increased competition to capture the li-ion market growth - VARTA’s positioning insured by intellectual property rights</li> <li>Dominant in premium market</li> </ul>

Company	Sales <sup>1</sup>	EBITDA Margin	Net Debt/ EBITDA	EV/EBITDA <sup>2</sup>	CAPEX/D&A
	2,443	15.16%	10.02x	16.9x	0.57x
	1,833	10.74%	12.73x	7,0x	4.80x
	1,106	21.87%	3.30x	n.a.	4.19x
	692	8.37%	6.85x	7,5x	2.06x
	485	1.35%	37.91x	8,9x	1.31x
	96	5.29%	1.78x	10,3x	1.00x
	870	24.45%	2.36x	26.27x	4.54x

## Strong financials, leadership positioning and high expected growth in core markets constitute real opportunities for VARTA to create value

### Deal Rationale

#### 1 Strong Fundamentals

- **Strong cash generation** – € 274,2 M of operational CFs resulting in € 270,7 M in FCF excluding expansion and M&A in 2020, suggesting **strong capacity to repay debt**
- Proven business model with **profit margins above competitors** (24,5% vs. closest competitor 21,9%)
- **Low maintenance CAPEX requirements**, growing from € 3,5 M in 2017 to € 5 M in 2020 in a period of restructuring and expansion

#### 2 Skilled Talent Pool

- **Experienced CEO with extensive knowledge in business strategy** – increased EBITDA margin from 12,2% in 2016 to 28,7% in the LTM, proving superior performance
- **Aligned incentives** – Chairman holds 56% of VARTA
- Business segments led by **experienced engineers and industry experts**

#### 3 High Growth Industry Markets

- **Market leader** in Microbatteries and **European leader** in Household Batteries
- **Technology leader**, implementing up to date innovations in all stages of the value chain and **Innovation leader** in the area of energy storage solutions
- High capacity to **rapidly implement innovations** into manufacturing processes
- **Proved resilience** of business to economic downturns (e.g. COVID-19)

#### 4 Strong Market Positioning

- **High forecasted growth rates in all core markets** (e.g. Energy storage solutions expect a CAGR of 19% until 2026)
- **Above/ near double digit growth projections** for end markets over a 5-year forecast
- **Actionable strong trends** in core markets and emerging opportunities in adjacent segments (e.g. EV's disruptive batteries market)

## Value creation strategies on the basis of organic growth and organizational improvements, exploring strategic segments of the battery market

*Risk-Return Assessment*

### A Portfolio Expansion to new end markets

- **Leverage product portfolio** by incorporating a new line of large-format batteries to **serve the high growth Electric Vehicle's (EVs) market** by establishing a **new business unit**, exclusively dedicated to the production of large-format lithium-ion cells.
- **Broaden customer base** by forming strategic relationships with German car manufacturers to ensure cashflow stability (particularly VW, Audi, BMW/Mini)

#### WHY?

- 1) Already developed fully functional **high quality prototype**
- 2) High growth, profitable **market** & favourable trends

### B Business Model sustainable expansion

- Incorporate a **recycling lithium battery facility** in VARTA's organizational structure as part of the firm's business model
- Capacity to recover up to 95% of valuable metals from used batteries and produce **sustainable recycled raw materials** (nickel, cobalt, manganese sulphates, and lithium hydroxide) for VARTA to reuse
- Significantly **reduce dependence on commodities'** price variations

#### WHY?

- 1) Pressure towards **sustainability awareness**
- 2) Mitigation of **commodities risk**

### C Operational Enhancement

- Design a **cost-cutting plan** to reduce unnecessary expenses inherited from VARTA Consumer and **operational inefficiencies** mainly **attributable to the M&A event and expansion efforts in 2020**, in order to raise the group's profitability margins.

#### WHY?

- 1) After an acquisition event, there's **room for value creation**, in this case, improving cost ratios of COGS and personnel expenses
- 2) Exponential **raise in commodities price in 2021**, suggesting a **mitigation strategy**

## Value creation strategies and market growth drivers behind strong cash flow generation, the EV factory being the most impactful EBITDA driver

Operating Expenses	2019	2020	2021	2022	2023	2024	2025	2026	CAGR <sup>1</sup> %
<i>Microbatteries &amp; Solutions</i>	340,9	508,1	527,5	649,0	806,9	829,6	829,7	834,3	9,6%
<i>Household batteries</i>	21,4	361,1	378,8	397,9	418,9	421,4	421,4	421,5	2,2%
<i>Large-format batteries</i>	-	-	-	-	660,1	748,1	821,4	880,1	10,1%
<b>Total</b>	<b>362,7</b>	<b>869,6</b>	<b>906,2</b>	<b>1 046,9</b>	<b>1 885,9</b>	<b>1 999,1</b>	<b>2 072,5</b>	<b>2 135,8</b>	<b>18,7%</b>
Total COGS	(123,5)	(315,5)	(352,4)	(402,8)	(809,0)	(855,5)	(896,1)	(930,0)	4,8%
<b>Gross Profit</b>	<b>239,8</b>	<b>549,9</b>	<b>553,9</b>	<b>646,0</b>	<b>1 089,4</b>	<b>1 289,3</b>	<b>1 368,6</b>	<b>1 430,9</b>	<b>6,2%</b>
Other Operating Income	12,1	42,4	72,1	241,6	12,6	12,6	3,6	3,6	-34,0%
Personnel Expenses	(114,4)	(257,1)	(252,0)	(289,6)	(438,4)	(453,7)	(463,0)	(474,8)	2,7%
Other Operating Expenses	(30,4)	(101,6)	(78,1)	(90,6)	(157,2)	(162,6)	(163,4)	(164,7)	1,6%
R&D:	(15,5)	(20,9)	(57,3)	(57,6)	(43,9)	(45,9)	(39,0)	(40,8)	-2,5%
<b>EBITDA</b>	<b>91,6</b>	<b>212,6</b>	<b>238,5</b>	<b>447,9</b>	<b>449,9</b>	<b>494,0</b>	<b>514,6</b>	<b>529,3</b>	<b>5,6%</b>

### Revenues:

Drivers behind growth include **market trends for growing demand** and **past expansion efforts** for existing segments and **new source of revenue (EVs)** responsible for roughly **40% of forecasted revenues**

### Costs

Huge **decrease in operating costs** as a pillar to the investment strategy is **driving results**, through:

1. Reduction of **COGS** via improving contract terms with suppliers
2. Realignment of **personnel capacity** requirements
3. Additional source of raw materials: **incorporation of recycling facility**, allowing for **significant cost savings YoY**

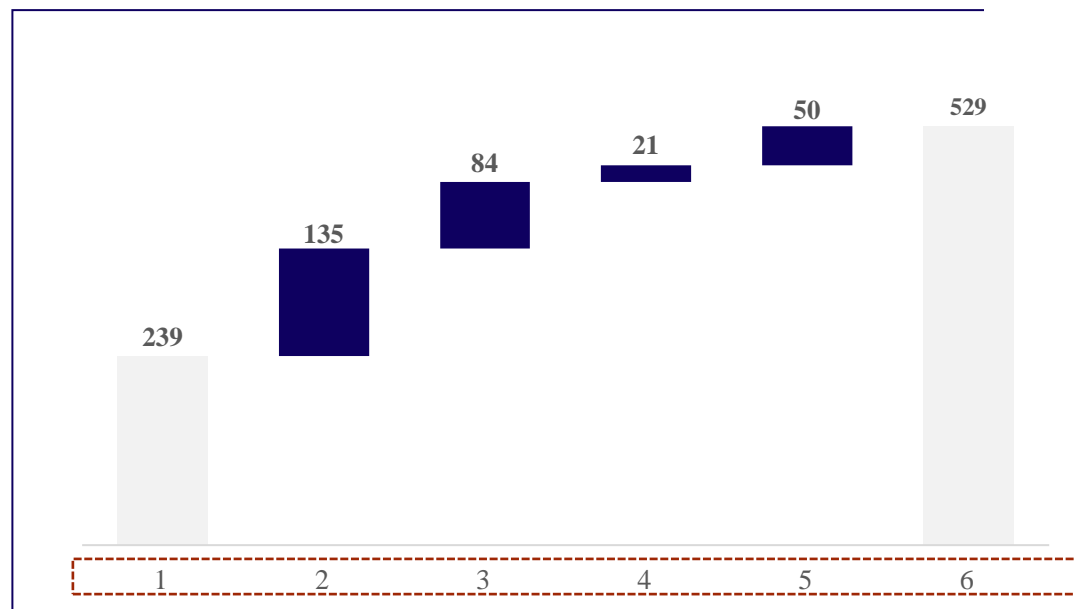
1) For comparison, CAGRs are calculated using 2023 as base year, due to the introduction of EV and recycling production process

## Forecasted EBITDA to be more than doubled, potentiating a high exit multiple

FCF (in €m)	2019	2020	2021	2022	2023	2024	2025	2026	CAGR %
<b>EBITDA</b>	<b>91,6</b>	<b>212,6</b>	<b>238,5</b>	<b>447,9</b>	<b>449,9</b>	<b>494,0</b>	<b>514,6</b>	<b>529,3</b>	<b>17,3%</b>
Cash Flow From Operations	97,1	242,3	246,1	350,2	336,7	414,3	428,0	434,8	
Cash from investing	(106,8)	(373,4)	(154,5)	(731,9)	(4,6)	(4,7)	(4,8)	(4,9)	
<b>Unlevered FCF to the firm</b>	<b>(9,6)</b>	<b>(131,2)</b>	<b>91,6</b>	<b>(381,6)</b>	<b>332,1</b>	<b>409,6</b>	<b>432,2</b>	<b>429,9</b>	<b>36,2%</b>
<b>FCF excluding Expansion &amp; M&amp;A</b>	<b>93,8</b>	<b>238,8</b>	<b>241,6</b>	<b>345,7</b>	<b>332,1</b>	<b>409,6</b>	<b>432,2</b>	<b>429,9</b>	<b>12,2%</b>
<i>% Growth</i>		155,8%	1,2%	43,1%	-3,9%	23,4%	3,3%	1,6%	
<i>% Revenues</i>	25,7%	27,5%	26,7%	33,0%	17,6%	20,5%	20,4%	20,1%	

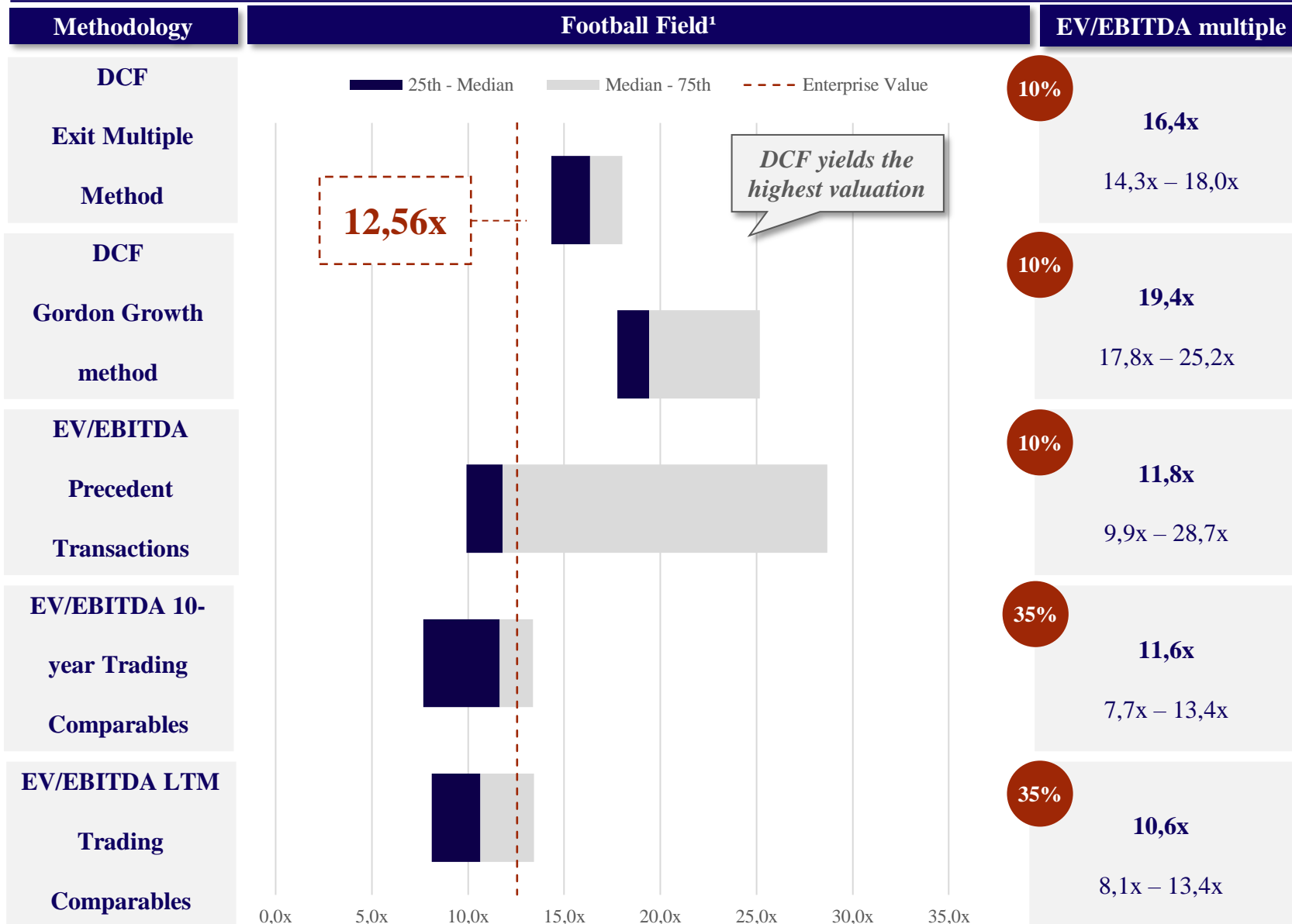
### EBITDA BRIDGE

- Expected **increase in EBITDA at a CAGR of 17,3%** throughout the investment period
- Entry in the **EV market as main growth driver**, accounting for **46,6% of total growth**
- **Operational cost-cutting efforts** and the **cost savings** from the **recycling process** are responsible for roughly **€ 105 M of EBITDA margin** generated
- Around **€ 50 M** of margin improvement is **attributable to** the natural growth of **end- markets**
- Significant improve in EBITDA allows for a **solid exit in 2026**



1 – EBITDA Entry | 2 – EV Strategy | 3 – Recycling plant | 4 – Operational Enhancement | 5 – Market Growth | 6 – EBITDA Exit

## Considering a multiple of 12.56x, VARTA is valued at € 3 042 M to be paid upfront in 2022



Valuation at an EV/EBITDA Multiple of **12,56x** leading to an **Enterprise Value** of € 3 042 M

Trading comparable methods yield a closest estimation given VARTA’s context, therefore considered with a **higher weight**:

1. Large enough sample of comparables to mitigate firm-specific risks/opportunities and close business models are being considered
2. Precedent transactions are highly biased by the higher willingness to pay for synergies, as it is usually associated with strategic purchases
3. DCFs are highly sensitive to future assumptions, which may not accurately reflect value in fast growing companies such as VARTA

## Attractive fund returns and aligned stakeholder incentives by leveraging about 6,5x EBITDA

Sources				Uses					
		€ M	x EBITDA	%			€ M	%	
Debt	<b>Senior Debt</b>				Acquisition	EBITDA 2021	242,3		
	Tranche A (amortizing)	605,7	2,5x	16,4%		Entry Multiple	12,56x		
	Tranche B	242,3	1,0x	6,5%		<b>Enterprise Value</b>	<b>3 042,1</b>	<b>82,2%</b>	
	<b>Subordinated Debt</b>					EV Factory	EV Factory	562,3	
	Mezzanine (bullet)	726,8	3,0x	19,6%			IPCEI Grant	200,0	
<b>TOTAL DEBT</b>	<b>1 574,7</b>	<b>6,5x</b>	<b>42,5%</b>	<b>EV COST</b>	<b>360,3</b>		<b>9,7%</b>		
Equity	<b>Fixed Return Instruments</b>	<b>1 794,6</b>	<b>7,4x</b>	<b>48,4%</b>	Recycling	Recycling Facility	165,0		
	<b>Ordinary Equity</b>	<b>334,9</b>	<b>1,4x</b>	<b>9,0%</b>		Grants	2,0		
	Institutional Investors	321,5	1.3x			<b>RECYCLING COST</b>	<b>163,0</b>	<b>4,4%</b>	
	Sweet Equity	13,4	0.1x	mgmt	Acquisition fees	<b>Total Fees (5%)</b>	<b>136,9</b>	<b>3,7%</b>	
	<b>TOTAL EQUITY</b>	<b>2 127,5</b>	<b>8,8x</b>	<b>57,5%</b>		DD fees (2%)	60,8		
					Other transaction fees (2,5%)	76,1			
<b>Total Sources</b>		<b>3 704,3</b>	<b>15,3x</b>	<b>100%</b>	<b>Total Uses</b>		<b>3 704,3</b>	<b>100%</b>	

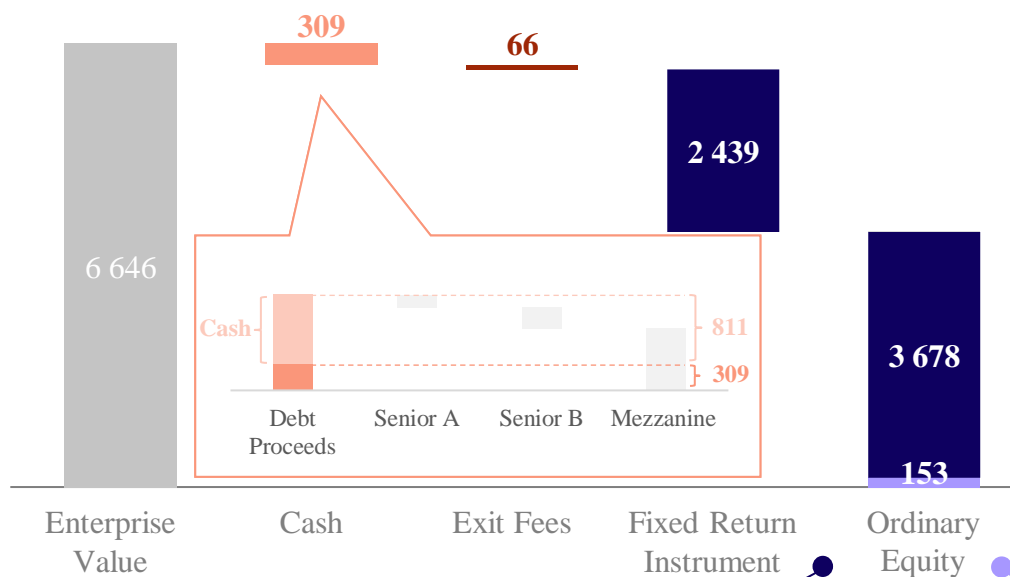
### HIGHLIGHTS

- Around € **2 878 M** of equity value at the acquisition and net debt of approximately € 164 M (Financial Debt of € **417 M** and cash and cash equivalents of € **253 M**)
- Factories' cost to be completely incurred during the first year of the holding period, **avoiding the need for CapEx facility**
- Financing structure chosen according to the **highest return yield scenario at the exit (MM and IRR)** assuming maximum amount of leverage of 6.5x (maximum senior debt of 3.5x)
- Scenarios constructed upon the assumption that senior debt requires a stipulated LTV covenant below 0.5x

	2022E	2023E	2024E	2025E	2026E
<b>Cash</b>	139	194	332	490	(309)
<b>CF</b>	(385)	55	138	157	(799)
<b>CC</b>	-	1,2x	1,5x	1,6x	0,3x
<b>IC</b>	-	3,6x	4,1x	4,5x	4,9x
<b>ND/ EBITDA</b>	3,2x	2,7x	1,9x	1,2x	0,6x

## Attractive fund and management returns as a result of value creation strategies, yielding a MM of 2,89x and an IRR of 23,67%

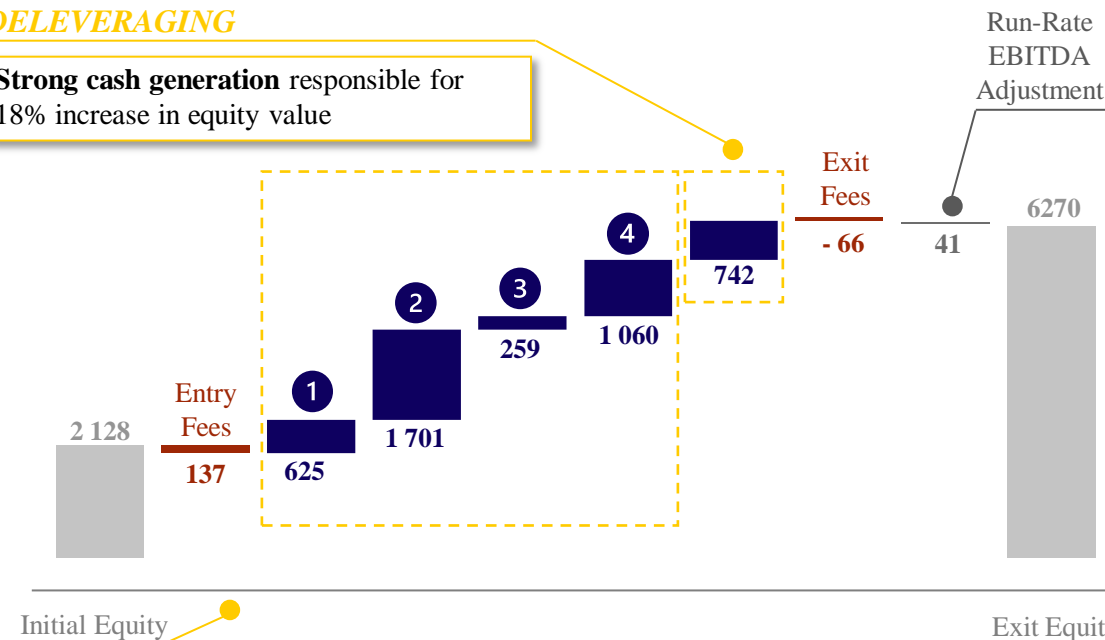
### Returns Breakdown<sup>1</sup>



### Equity Bridge<sup>1</sup>

#### DELEVERAGING

Strong cash generation responsible for 18% increase in equity value



#### INSTITUTIONAL PROCEEDS

INVESTMENT	€ 2 114 M
PROCEEDS	€ 6 117 M
IRR	23,67%
MM	2,89x

#### MANAGEMENT PROCEEDS

INVESTMENT	€ 13 M
PROCEEDS	€ 152 M
IRR	62,81%
MM	11,44x

#### EBITDA GROWTH

- Market growth:** strong high growth markets potentiating natural organic growth
- EV Strategy:** Main growth driver accounting for ~41% of Equity value creation
- Operational enhancement:** low capital/risk strategy increasing equity by 6,3%
- Recycling plant:** profitable sustainability efforts generating 25,6 % additional value

1) Values in million €

## Even under extremely conservative assumptions, VARTA can still generate interesting returns while meeting bank covenents

### Sensitivity Analysis – Investment Case

		Year							Year				
		2024	2025	2026	2027	2028			2024	2025	2026	2027	2028
EXIT Multiple	11,56x	2,18x	2,43x	2,66x	3,03x	3,44x	EXIT Multiple	11,56x	29,7%	24,9%	21,6%	20,3%	19,3%
	12,06x	2,29x	2,55x	2,77x	3,15x	3,58x		12,06x	31,8%	26,3%	22,6%	21,1%	20,0%
	12,56x	2,40x	2,66x	2,89x	3,28x	3,72x		12,56x	33,9%	27,7%	23,7%	21,9%	20,6%
	13,06x	2,51x	2,78x	3,01x	3,41x	3,86x		13,06x	36,0%	29,1%	24,7%	22,7%	21,3%
	13,56x	2,63x	2,89x	3,13x	3,54x	3,99x		13,56x	38,0%	30,4%	25,6%	23,4%	21,9%

### Sensitivity Analysis – Bank Case

		Year							Year				
		2024	2025	2026	2027	2028			2024	2025	2026	2027	2028
EXIT Multiple	11,56x	1,78x	1,99x	2,17x	2,17x	2,19x	EXIT Multiple	11,56x	21,2%	18,7%	16,8%	13,8%	11,9%
	12,06x	1,88x	2,08x	2,27x	2,27x	2,28x		12,06x	23,3%	20,2%	17,8%	14,6%	12,5%
	12,56x	1,97x	2,18x	2,37x	2,36x	2,37x		12,56x	25,4%	21,5%	18,9%	15,4%	13,2%
	13,06x	2,06x	2,28x	2,47x	2,46x	2,47x		13,06x	27,3%	22,9%	19,8%	16,2%	13,8%
	13,56x	2,16x	2,38x	2,57x	2,55x	2,56x		13,56x	29,2%	24,2%	20,8%	16,9%	14,4%

### Due Diligence

Key Risk	DD	Scope
Forecasts overestimation (e.g. market growth, demand, trends); Undermine competitive positioning (e.g. emerging of better innovative products, technological substitution); misjudgement of risk-return EV strategy (e.g. profitability, production)	<b>Commercial</b>	Market forecast & outlook; competitive landscape; EV market
Overestimation of factories capacity, budget; Underestimation of COGS; High dependence on commodities price and current exceptional terms of payments (both with clients and customers)	<b>Operational</b>	Value Chain; Production plants; Cost of materials
Multiple exceptional activities in the last 5 years creating noise around current financials; Hidden assets; dependence of public funding; misalignment of management incentives	<b>Financial</b>	Valuation ; Capital Structure
Emerging litigations from non-licenced activity; misjudgement of environmental impact from battery recycling process	<b>Legal</b>	Fiscal; Licencing; EU Laws & ESG

## Strategic and secondary sales comprise two attractive exit strategies, combining strong advantages with low completion risks, being CATL and Carlyle strong candidate buyers

### Strategic Sale

#### Advantages:

- **Higher exit valuation:** buyers tend to pay a higher price (benefit from synergies)
- **Numerous potential buyers:** industry marked by strong M&A activity
- Industry with **large players** with the resources required to finance the acquisition
- **Immediate exit** without regulatory requirements and costs inherent to other exit options (as it occurs in an IPO)

#### Red Flags:

Timing wise, **strategic buyers might try to enter sooner**, as markets are becoming more competitive and mature, with smoother growth expectations and lower prices, specially at the time of the exit



### Secondary Sale

#### Advantages:

- Experience in defining **deal terms and risk allocation models**, potentiating an immediate full exit
- **Limited number of potential targets** in the battery industry resulting in high valuations of secondary buyers
- **Ability to leverage the high growth potential** of this industry with great prospects of returns

#### Red Flags:

Conditional on the **success of value creation strategies** and cash generation after the committed massive investments

*The most likely strategy to pay a higher premium valuation is to **exit via strategic sale** to a major competitor, a straightforward exit, without major costs involved and generating an attractive exit multiple, due to high synergies potential. **CATL** is a safe bet for a strategic sale, as buying VARTA would be aligned with the firm's growth strategy and future goals.*

*Alternatively, a **secondary sale** is also expected to yield a high valuation and **Carlyle** is a strong potential buyer for VARTA's concept.*



## TABLE OF CONTENTS

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- II INDIVIDUAL CONTRIBUTION: COMPANY OVERVIEW,  
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**Throughout the 130 years of experience, a series of strategic joint ventures and acquisitions and significant expansion investments have positioned VARTA as the world leading battery manufacturer in some industry’s major segments**

Company Snapshot	VARTA’s Footprint	
<ul style="list-style-type: none"> <li>VARTA AG is a <b>global batteries’ manufacturing company</b> comprising consumer batteries for household uses and industrial solutions for entertainment, healthcare, smart devices, among others</li> <li>Founded in 1887 the company has been listed on the <b>Frankfurt Stock Exchange since 2017</b></li> <li>VARTA’s business activities are focused in (1) <b>Production</b>, (2) <b>R&amp;D</b> and (3) <b>Distribution</b></li> <li>The firm offers a comprehensive battery portfolio divided into two separate business segments: (1) <b>Micro- batteries &amp; Solutions</b> and (2) <b>Household Batteries</b></li> <li><b>Market leader in Hearing Aids</b> sub-segment</li> <li><b>European market leader in Household batteries</b> segment since 2020, with the <b>acquisition of VARTA consumer</b></li> </ul>		
<b>FY20 Key Figures</b>	<div style="text-align: right;"> <h2 style="margin: 0;">HQ</h2> <p style="margin: 0;">Ellwangen, Germany</p> <h2 style="margin: 0;">+4.500</h2> <p style="margin: 0;">Employees worldwide</p> <h2 style="margin: 0;">5</h2> <p style="margin: 0;">Production units</p> <h2 style="margin: 0;">4</h2> <p style="margin: 0;">Research and development centers in Europe</p> <h2 style="margin: 0;">+75</h2> <p style="margin: 0;">Direct sales in more than 75 countries with distribution centers in the <b>USA, Europe and Asia</b></p> </div>	
<p><b>Revenues per segment</b></p> <p style="margin-top: 10px;">Successful acquisition of VARTA Consumer in 2020, responsible for <b>92 pp of total revenue growth</b></p>		
<p><b>From the beginning: Rapid growth and diversification</b> (establishment of subsidiaries via acquisitions)</p> <ul style="list-style-type: none"> <li>2002: <b>split up</b> and sale of former subsidiaries</li> <li>2009: <b>Joint venture</b> with Volkswagen</li> </ul>	<p><b>Key developments:</b></p> <ul style="list-style-type: none"> <li>Construction of the world’s largest and most modern <b>hearing aid battery plant</b></li> <li>Holding company acquires VARTA AG</li> <li>Establishment of <b>VARTA Storage</b></li> <li><b>Fully automated production</b> of small Li-Ion batteries</li> <li>Market launch of a <b>new energy storage solution</b></li> </ul>	<p><b>Expansion period:</b></p> <ul style="list-style-type: none"> <li>2017: successful <b>IPO</b> aimed to raise capital to meet lithium-ion batteries demand</li> <li>2020: (1) <b>Acquisition of VARTA Consumer</b> and consequent integration of new business segment; (2) <b>Massive expansion</b> of production facilities (new production facility operational in 2022); (3) <b>Funding commitment of around € 300 M</b> from federal/ state government as part of an IPCEI<sup>2</sup></li> </ul>

1) excluding integration of VARTA Consumer | 2) Important Projects of Common European Interest (IPCEI)

# The company produces and markets a comprehensive battery portfolio, offering high premium battery solutions for a wide range of applications

## 5 Product Lines across 2 different Business Segments

### Microbatteries & Solutions

- Focuses on the OEM business for Microbatteries and the Lithium-ion battery pack business
- Extensive **industry experience in high-performance, safe and needs-based** lithium battery packs
- **Reputable firms as clients in the segment** (such as Apple, Samsung)
- **Leading manufacturer** of Microbatteries for hearing aids and rechargeable Microbatteries in the area of **Entertainment**

### Household Batteries<sup>1</sup>

- European market leader in the area of household batteries
- Consumer batteries account for a revenue share of 90% of the segment
- **Consumer batteries were integrated with VARTA Consumer's acquisition**
- Outperformance of both business lines

#### Microbatteries for Hearing Aids



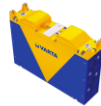
Particularly suitable for hearing aid devices. VARTA is leader in the segment, with a fully dedicated hearing aid battery production facility, and being the **only manufacturer offering rechargeable and non-rechargeable batteries.**

#### Lithium-ion coin power & other special batteries



**Premium range of lithium button, round cells, alkaline special batteries and silver-oxide.** Particularly suitable for energy requirements in everyday applications, such as car keys, smart home devices, watches, etc.

#### Power Pack Solutions – Lithium-ion Battery Packs



Smart, modular energy solutions from **customer-specific battery packs to fully configured standard batteries,** designed and produced for any product-specific application without any additional R&D costs.

#### Consumer Batteries



**Disposable batteries** focused on consumer lifestyles suitable for a wide range of OEM consumer's applications.

#### Energy Storage Systems



Smart energy storage systems of **self produced, green energy,** aimed to optimally manage electricity generation and actual electricity consumption.

### APPLICATIONS

Hearing Aids



Smart wearables  
Automotive Devices  
Medical Devices



Industrial Robotics  
IT/Communications  
Smart home applications



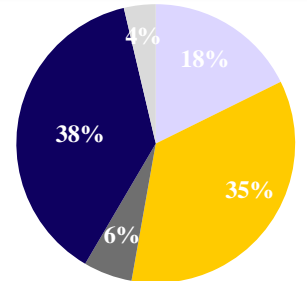
Entertainment,  
household uses, etc.



Residential and  
Commercial Storage  
systems



Revenues per segment FY20



### Key Activities

#### 1. Production:

- High level of **vertical integration**
- **Best in class** processes and technologies
- Global purchasing and supplier network
- **In-house** chemical and safety laboratories
- Integrated R&D through **entire value chain**

#### 2. R&D:

**R&D as the basis of innovation:** keep up with emerging market conditions and trends resulting in a **fast response, optimised methods and innovative products**

#### 3. Distribution:

Strong, solid **global distribution network** counting on key retailers and local companies

### QUALITY MANAGEMENT

*Integrated in all the 3 stages*

Quality Planning

Quality Control

Quality Testing

1) Until 2020 this segment only included energy storage solutions

## VARTA's strength lies in transforming innovations into market-driven products that are successfully manufactured in large-scale and automated production to the highest quality standards

Market Growth Drivers	<p><b>DEMOGRAFIC</b></p> <p><b>Elderly population</b> is expected to increase substantially (around 6,7%) worldwide as well as <b>life expectancy</b> until 2050</p>	<p><b>TECHNOLOGICAL PROGRESS</b></p> <p>Consumer preferences moving towards <b>high tech products</b>: need for reliable and high-quality energy solutions and high energy density batteries</p>	<p><b>CONNECTIVITY</b></p> <p>Development of the <b>internet of things (IoT)</b> and of <b>smarter and more efficient solutions</b></p>	<p><b>RENEWABLE ENERGIES</b></p> <p>Increased importance of renewable energies, energy efficiency and EU climate targets driving <b>sustainable growth rates</b> for <b>intermediate energy storage</b></p>
	Opportunities for VARTA	<p>VARTA takes advantage of the <b>growing demand for hearing aids</b> batteries, expected to follow this increasing trend and trend towards rechargeable hearing aids</p>	<p><b>Increasing demand from premium costumers</b> (e.g. Apple, Samsung) with a clear preference for <b>efficient, high-quality, design oriented products</b> that VARTA's competitors cannot supply</p>	<p>Driving demand for batteries suitable in industries such as <b>IT, Robotics, Medical, Communications</b>, among others</p>
Competitive Advantage		<p>VARTA is the <b>only manufacturer in the world</b> which, in addition to Hearing aid's zinc-air batteries, also offers a complete range of rechargeable batteries. These are produced in Ellwangen on fully automated production lines in <b>the largest and most cutting-edge hearing aid battery production facilities</b>.</p> <p>Products are manufactured with the firm's own machinery and tool construction, reducing dependency from external suppliers.</p>	<p>VARTA is the <b>technological and innovation leader in small, lithium-ion batteries for high-tech consumer products</b>, offering the smallest lithium-ion batteries with the by far highest energy density. Key technological advantage allows VARTA to <b>dominate the premium market</b></p> <p><b>Strong costumer base</b></p>	<ul style="list-style-type: none"> <li>• <b>First mover advantage</b> producing coin-shaped rechargeable batteries</li> <li>• Business model design to anticipate consumers needs and <b>actively shape future preferences</b></li> <li>• <b>Best price-performance ratio</b> in each business segment due to a strict cost efficiency throughout the entire value chain, outstanding machine efficiency and highest productivity</li> </ul>
	<p>VARTA's large R&amp;D efforts and expert network are backing its competitive positioning in the market by broadening the product portfolio with new, innovative and smarter products. All of the above also contribute to the firm's organic growth<sup>1</sup></p>			

1) The IPCEI funding received in 2020 aims to support the research and development of lithium-ion cells processes<sup>1</sup>, which may result in product range growth

## Skilled and competent management team, capable of dealing with potential risks while potentiating strengths to capture opportunities and sustain VARTA’s positioning

### Management Team



#### Herbert Schein, CEO

- Part of VARTA AG for more than 25 years
- CEO of the board since 2016
- **Extensive knowledge in the development and execution of business strategies** at international level and comprehensive industry experience
- **Deep understanding and direct successful experience in market launches of new products** and of setting up production facilities in Europe and Asia



#### Armin Hessenberger, CFO

- VARTA employee since 2016 - **CFO since January 2021**
- **Strong professional record**, currently being managing director of VARTA’s Microbattery and Consumer Batteries segments
- Strong academic record – degree in commercial studies, special business administration and foreign trade

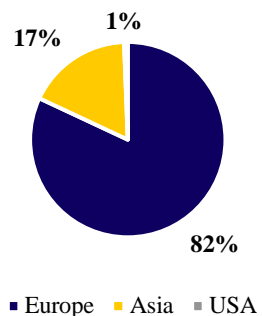


#### Prof. DDr. Michael Tojner, Chairman

- Chairman of VARTA’s supervisory board
- **Majority owner** of Montana Tech Components AG, VARTA’s **majority shareholder with a 56% share**

### Human Capital

#### Employees per region



- **4.584 employees** as of December 2020
- Average **increase of ~60% in total workforce**, with the acquisition of VARTA Consumer in 2020, incorporating a total of 1.104 new employees in the company
- **Low employee turnover (<4%)**



**Dr. Nicolas Bucher, Manager of funded projects:** strong academic and professional background in chemical engineering, expert in li-ion batteries, electrochemical analysis and organic synthesis, responsible for VARTA’s R&D



**Bengt Stahlschmidt, General Manager at Energy and Storage:** extensive experience in the energy storage and energy efficiency solutions. Responsible for development, production and sales of energy storage systems



**Peter Werner, General Manager at Household batteries:** outstanding academic background in mechanical & Industrial engineer, more than 27 years of expertise within VARTA.



**Torsten Schmerer, General Manager at Microbatteries:** 20 years of experience at VARTA, ahead of the leading Hearing Aids segment.

### Key Strengths

- **High diversification** within end markets and **unique product portfolio** ensuring outperformance and protecting VARTA against economic downturn risk
- **Proactive response to market trends:** strong R&D units, large network of research partners and highly vertical structure, ensuring constant innovation
- **Low dependence on third parties:** highly automated in-house production, technology, machinery and **patented know-how**
- **Market leadership in technology** and core segments, dominating premium market
- **First mover advantage** in the production of **coin-shaped rechargeable batteries**
- Large distribution channels and efficient supply chain management
- **Strong, capable and experienced management team**

### Key Risks

- Risk of **technological substitution**
- **Fluctuations in commodities price** (e.g. Li, Ni, Co, Mn, etc)
- **Price pressure** from competitors (mainly from Asia) due to their labor cost advantage
- Increasing competition trying to benefit from increasing demand for lithium-ion batteries
- Dependence on major costumers (such as Apple, Samsung, Bose)
- **Exposure to EHS<sup>1</sup> regulations** potentiating financial liabilities
- **Potential prevalence of COVID-19 industry effects, namely the significant decrease in elderly population and disruptions in the supply chain**

1) Environment Health & Safety

# Despite the global pandemic, 2020 was marked by exponential growth in revenues and EBITDA in major part explained by the acquisition of VARTA Consumer and Expansion of Li-Ion production capacity

## 2020 Key Financial Highlights

**€ 869,6 M**  
Revenues

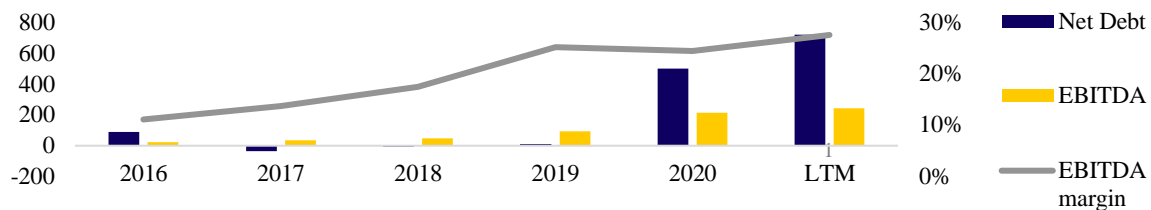
**27,7%**  
Adjusted EBITDA margin

**€ 302,2 M**  
CAPEX excluding M&A

**€ 300 M**  
IPCEI funds

**€ 20,9 M**  
Expenses in R&D

**€ 238,8 M**  
FCF excluding Expansion & M&A



**Acquisition of VARTA Consumer in 2020** allowing for a 66% rise in the group’s revenue in (~€ 336 M in absolute terms) and a 22,5% rise in the total EBITDA. Net acquisition price totalizing around € 180 M, the majority being **financed by a syndicated loan in the amount of € 120 m**

**Massive expansion of the Li-ion (CoinPower) production capacity**, derived by the increasing demand for wireless lifestyle products. CAPEX excluding M&A totalled ~ € 302 M in 2020, most of it accrued to the expansion. **Mostly equity financed** (but also uses the € 120 M syndicated loan)

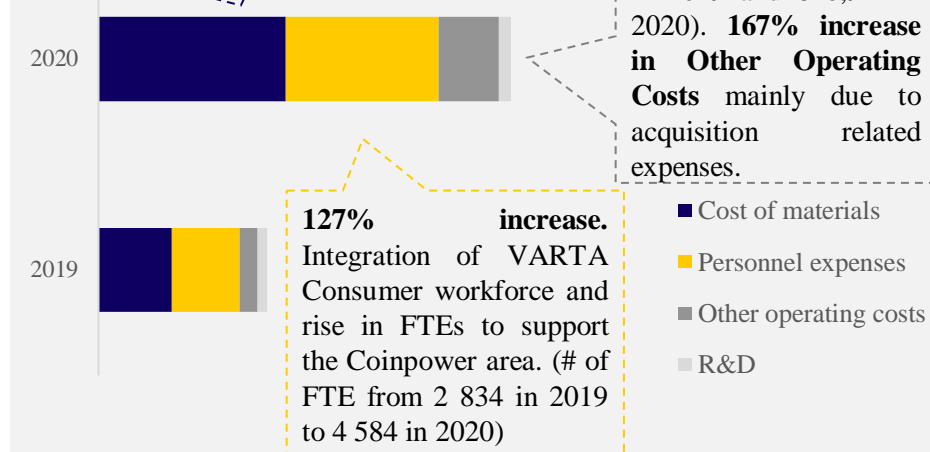
**Increase in EBITDA margins**, mostly propelled by the Microbatteries & Solutions segment, from 28% to 36,8%. Group margin reaching 27,7% in 2020 (0,8 PP higher than 2019) and very likely reaching 30% in 2021, the main driver expected to be the Household segment

**€ 300 m funding** commitment from IPCEI in June 2020, used for further development of **large lithium-ion cells** (new product segment prototype being explored)

## Operating Costs Structure

**155% increase.** Disproportionate relative to revenue explained by the higher cost of materials ratios of VARTA Consumer, consolidated for the first time on 2020.

**Decline in R&D expense ratio** against sales attributed to the consolidation. (€15,5m in 2019 and €20,9m in 2020). **167% increase in Other Operating Costs** mainly due to acquisition related expenses.



## COVID-19 Impact – Overall null impact for VARTA

- COVID 19 pandemic has caused a **significant number of deaths worldwide**, mainly in the **elderly population**, directly impacting the **short-term demand for hearing aids** segment for VARTA. However, this effect is punctual and the average life expectancy is expected to increase.
- Disruption in the automotive market** affects VARTA when it comes to the **sale of batteries for automotive gadgets**. However, VARTA is not yet selling EV batteries and, hence the automotive market is not yet a determinant market for the company.
- Many of VARTA’s costumers in Asia, TWS manufacturers, were hit by partial lockdowns of their plants and energy failures **causing prices and orders to go down in the Microbatteries segment**.
- Consecutive **lockdown measures** forced people to invest in **household comfort and entertainment**, raising demand for both household and Microbatteries segments, offsetting part of the negative impact of other drivers.
- Use of **medical equipment increased significantly** during the pandemic, **raising demand for batteries applicable in medical devices**. In particular, VARTA was the **first time supplier for “Senova”**, an innovative medical equipment that develops high-precision antibody tests for Covid. Awareness around healthcare concerns is expected to increase and hence the **rise in demand is expected to prevail**.

1) LTM (last twelve months) from June 2020 to June 2021

## VARTA's strategic turnover and business expansion improved significantly the firm's KPIs and market positioning

Income statement (in €m)	2016	2017	2018	2019	2020	LTM
Microbatteries & Solutions	200,5	228,7	253,4	340,9	508,1	501,6
Household Batteries	11,5	12,5	17,2	21,4	361,1	374,6
Reconciliation	1,8	0,9	1,0	0,4	0,3	0,0
<b>Total Revenues</b>	<b>213,8</b>	<b>242,2</b>	<b>271,7</b>	<b>362,7</b>	<b>869,6</b>	<b>876,2</b>
<i>Growth %</i>		13,3%	12,2%	33,5%	139,8%	0,8%
Variation of Production	-11,3	3,1	3,9	0,6	-4,2	18,6
COGS	-78,5	-99,9	-106,9	-123,5	-315,5	-315,5
<b>Gross Profit</b>	<b>124,0</b>	<b>145,4</b>	<b>168,7</b>	<b>239,8</b>	<b>549,9</b>	<b>579,2</b>
<i>Gross Margin %</i>	58,0%	60,0%	62,1%	66,1%	63,2%	66,1%
Other Operating Income	11,4	18,0	11,3	12,1	42,4	42,6
Personnel Expenses	-76,7	-86,0	-92,4	-114,4	-257,1	-257,1
Other Operating Expenses	-24,1	-31,9	-27,2	-30,4	-101,6	-122,5
R&D	-10,8	-12,3	-12,9	-15,5	-20,9	0,0
<b>Total EBITDA</b>	<b>23,8</b>	<b>33,1</b>	<b>47,4</b>	<b>91,6</b>	<b>212,6</b>	<b>242,2</b>
Adjustments to EBITDA*	2,3	6,0	2,8	5,9	28,4	9,0
<b>Normalized EBITDA</b>	<b>26,1</b>	<b>39,1</b>	<b>50,2</b>	<b>97,5</b>	<b>241,0</b>	<b>251,2</b>
<i>Margin %</i>	12,2%	16,2%	18,5%	26,9%	27,7%	28,7%
<b>Net Income</b>	<b>9,4</b>	<b>13,5</b>	<b>25,7</b>	<b>50,5</b>	<b>95,5</b>	<b>100,4</b>
<i>Profit Margin</i>	4,4%	5,6%	9,5%	13,9%	11,0%	11,5%

### HIGHLIGHTS

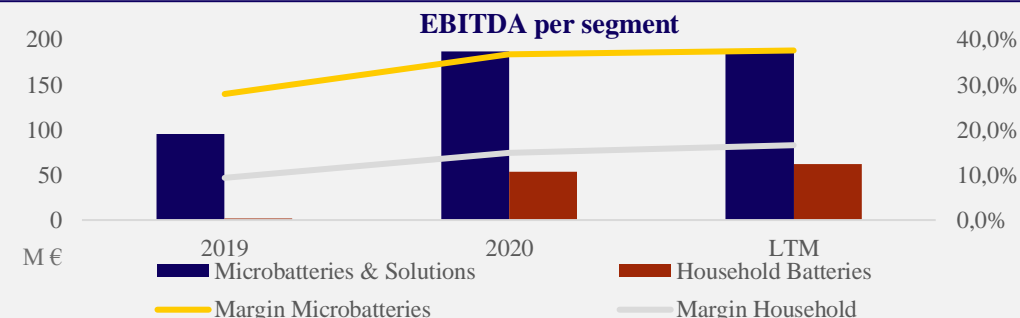
- 1 Strategic turnover: 2019 observed a **strategic re-segmentation** of the operating business, derived by **substantial growth in market demand** in Microbatteries & Solutions, and Household batteries
- 2
  - i. Significant **revenue growth (139,8%)**, boosted by the first time consolidation of VARTA Consumer. Excluding the M&A transaction, **organic growth in revenues amounted 47,2%**
  - ii. Geographically, **Asia and Europe** represent VARTA's major markets. Both registered the highest growth rate over the period under analysis
- 3 Increase in **finished and unfinished goods**, accounting for ~€18 M in the LTM, explained by VARTA's latest increase in stocks to respond to very high expected levels of demand in the end 2021
- 4
  - i. Income from **IPCEI grants** and other public donations amounted €18,35m in first half of 2021.
  - ii. **Services provided from VARTA Consumer** to the former owner until the end 2020 and discontinued thereafter, amounting € 17,6 M in 2020
- 5 Exponential growth explained by the extra **legal and consulting costs** related to the acquisition (incurred mainly in the end of 2020 thus influencing LTM), as well as, additional **energy expenditure and higher maintenance costs** associated to the expansion of production facilities
- 6 **Acquisition related costs**: Restructuring costs for VARTA Consumer (€ 17.6 m) and Measurement of Inventories within the Power Purchased Allocation (€ 8.7 m)

### EBITDA GROWTH DRIVERS

2 main drivers

1 In response to the growing demand in the **Microbatteries segment**, VARTA is massively investing in increasing capacity, diversity of products, production facilities' efficiency and innovation. **Here the growth potentiating high revenues and EBITDA is essentially organic.**

2 VARTA Consumer's acquisition has strengthened the firm's positioning as a **leading global manufacturer** of battery solutions by allowing the firm to include device batteries for end consumers in its product portfolio (representing more than 90% of the **household batteries segment's** revenues and EBITDA).



## Decreasing NWC needs together with significant expansion efforts strongly increased VARTA's Cash Flow generation capacity

Balance Sheet (in €m)	2016	2017	2018	2019	2020
Cash and Equivalents	12,3	138,5	149,7	244,8	121,9
Total Debt	99,6	101,0	142,3	253,6	623,7
Net Debt	87,3	-37,5	-7,5	8,8	501,8
Shareholders Equity	65,3	230,5	259,4	415,9	499,1
Net Debt/EBITDA	3,7x	-1,1x	-0,2x	0,1x	2,4x
Cash Flow Statement (in €m)	2016	2017	2018	2019	2020
<b>Adjusted EBITDA</b>	<b>26,1</b>	<b>39,1</b>	<b>50,2</b>	<b>97,5</b>	<b>241,0</b>
Net Financial result	1,7	0,7	0,3	0,5	5,0
Income Tax Paid	-3,3	-5,6	-6,9	-12,9	-39,1
Other Income and Expenses	-5,1	-0,9	1,3	-1,4	-1,6
<i>Inventories</i>	0,9	-12,3	-2,3	-7,2	-20,4
<i>Trade receivables</i>	-3,9	-9,2	-8,0	-28,2	13,3
<i>Trade payables</i>	8,6	15,1	38,0	58,0	43,0
<i>Provisions &amp; liab. pensions</i>	2,9	1,9	0,6	4,9	32,9
Changes in NWC	8,5	-4,4	28,3	27,5	68,9
<b>Cash Flow From Operations</b>	<b>27,8</b>	<b>29,0</b>	<b>73,2</b>	<b>111,3</b>	<b>274,2</b>
Estimated Maintenance Capex	0,0	-3,5	-4,2	-4,3	-5,0
Expansion Capex	-22,5	-17,0	-56,3	-102,8	-302,2
Investments Acquisitions	0,0	0,0	0,0	-0,2	-67,8
Sales	0,5	0,0	0,1	0,5	1,5
<b>Cash from investing</b>	<b>-22,0</b>	<b>-17,0</b>	<b>-56,2</b>	<b>-102,5</b>	<b>-368,5</b>
<b>Unlevered FCF</b>	<b>5,8</b>	<b>12,0</b>	<b>17,0</b>	<b>8,8</b>	<b>-94,3</b>
<b>FCF excluding Expansion &amp; M&amp;A</b>	<b>28,3</b>	<b>25,5</b>	<b>69,1</b>	<b>107,5</b>	<b>270,7</b>

### HIGHLIGHTS

1. i. Sharp **decrease in cash and equivalents** due to substantial investments in PP&E and the acquisition of VARTA Consumer  
 ii. Increase in **Total Debt**: (1) incorporation of the 1<sup>st</sup> tranche of a **syndicated loan**; (2) increase in **contracts of Leases** due to expansion (buildings, warehouses, plant, vehicles); (3) **Provisions for employee benefits** (pensions, severance payments) due to sharp increase in staff; (4) **Accounts Payables** due to the acquisition
2. i. Capital increase of € 150,5 M from the IPO in 2017  
 ii. Capital increase of € 104 M in 2019
3. i. Sharp **reduction of NWC** in 2018 and 2019 mainly due to **advance payments received from costumers** (i.e., obligations from pending transactions to deliver batteries in the future) amounting €41,8 M and €20 m respectively  
 ii. 2020: **NWC significantly reduced**, again due to **advance payments received from costumers** of €56,1 M (€31,6 M from VARTA consumer), followed by significant **improvements in the inventory turnover**, reducing in 64 days against 2019 the average days of inventory outstanding, and the **increase in the provisions for pensions**, due to average increase of 60% in workforce
4. i. **Extensive investment program** that continued across 2019 and 2020, aiming to **increase capacity in the Microbatteries segment** and funded with cash inflow from the IPO in 2017 and from the capital increase in 2019  
 ii. **Acquisition** of VARTA Consumer in 2020

### CASH CONVERSION RATIO (CCC)

#### Receivables (DSO)

- Increased 9,9 days, from 30,7 in 2017 to 40,6 days in 2020
- Slightly negative impact in NWC

#### Inventory (DIO)

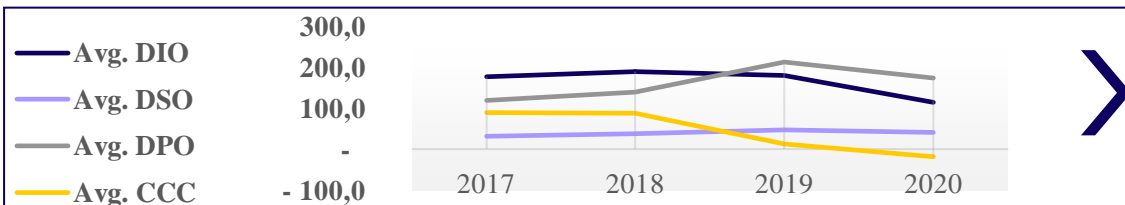
- Decreased 61,9 days (176 in 2017 to 114,1 in 2020)
- Very positive impact in NWC (due to acquisition)

#### Payables (DPO)

- Increased 55,8 days (117,5 in 2017 to 173,3 in 2020)
- Very positive impact in NWC (due to advanced payments)

#### Cash Cycle (CCC)

- Has become negative thanks to DPO and DIO
- Reflects decreasing NWC needs



**Considering a multiple of 12,56x and using an adjusted run-rate EBITDA for maturity effects of the expansion, VARTA is valued at € 3 042,1 M to be paid upfront in 2022**

Methodology	Football Field	EV/EBITDA	Comments	VALUATION
DCF Exit Multiple Method	<p>Legend: 25th - Median (dark blue), Median - 75th (light grey), Enterprise Value (dashed orange line)</p> <p>DCF yields the highest valuation</p>	<b>10%</b> <b>16,4x</b> 14,3x – 18,0x	<ul style="list-style-type: none"> <li>Based 2021 comparables, the <b>Terminal Value is determined using the average median 11,6x 10 year EV/EBITDA multiple</b></li> </ul>	<p><b>Run-rate EBITDA used for valuation purposes:</b></p> <ol style="list-style-type: none"> <li>1) Implied costs of capacity expansion efforts incurred in 2021 will only see returns in 2022</li> <li>2) Run-rate EBITDA takes into account the maturity effects of the business unit expansion assuring an accurate forecast</li> <li>3) Avoids the underestimation of valuation, potentiating an attractive bid</li> </ol>
DCF Gordon Growth method		<b>10%</b> <b>19,4x</b> 17,8x – 25,2x	<ul style="list-style-type: none"> <li>Discounted <b>steady state FFCFs forecasts</b> until 2026, assuming only market growth drivers</li> <li>Terminal Value computed assuming the <b>risk free rate of 1,62%</b> as the yield of a US 10-year T-bill</li> </ul>	
EV/EBITDA Precedent Transactions		<b>10%</b> <b>11,8x</b> 9,9x – 28,7x	<ul style="list-style-type: none"> <li>Only transactions from <b>industry players with similar business models and end markets</b> and within a 10-year time frame are considered</li> </ul>	
EV/EBITDA 10-year Trading Comparables		<b>35%</b> <b>11,6x</b> 7,7x – 13,4x	<ul style="list-style-type: none"> <li>Peer group selected based on <b>trading competitors and comparables</b> according to different financial platforms</li> <li><b>Median multiple used as the best proxy</b>, given the differences in the <b>relative size of the comparable firms</b> (as per VARTA relative size)</li> <li><b>Relatively low spread</b> of median multiples throughout the considered years, ranging from 8,7x to 13,7x</li> </ul>	
EV/EBITDA LTM Trading Comparables		<b>35%</b> <b>10,6x</b> 8,1x – 13,4x		

Valuation at an EV/EBITDA Multiple of 12,56x leading to an Enterprise Value of € 3 042,1M

**Trading comparable methods yield a closest estimation** given VARTA’s context, therefore considered with a higher weight - up to 70%, the remaining being equally distributed between other methods, in order to **capture market/firm specific information** that trading comparables may not be able to include:

1. **Large enough sample** of comparables to mitigate firm-specific risks/opportunities and **close business models** are being considered
2. Precedent transactions are **highly biased by the higher willingness to pay for synergies**, as it is usually associated with strategic purchases
3. DCFs are highly sensitive to future assumptions, which may not accurately reflect value in **fast growing companies** such as VARTA



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## How did COVID-19 impacted the battery industry?

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The **global pandemic** caused by COVID-19 brought a lot of **challenges to the global economy**. Lockdown measures and many restrictions were imposed by governments in an attempt to contain the spread of the virus at a time of high **global uncertainty**. Businesses around the world were faced new threats and experienced **drastic shifts in customer's behavior**, resulting in significant increase in the overall business risk, forcing companies to **either adapt to this new reality or ultimately face extinction**. Having passed more than one year since the beginning of the pandemic, it has become clear that while some industries failed or had difficulties to adapt to changes in macroeconomic environment and the challenges posed by the pandemic (tourism, real estate), others managed to benefit directly from the pandemic environment (tech, pharma). But, after all, what was the outlook for the battery industry?

For batteries manufacturers', the overall **impact of the pandemic was neutral**. Yet, it is important to note that different segments, end markets and geographies registered different impacts: while some directly benefited from consumers spending more time at home, others were severely damaged by the direct effects of lockdown measures. Hence, in order to understand the real impact of this global crisis within the battery industry, we must focus our analysis on specific factors.

Starting with negative effects, the high number of deaths prompted by the pandemic resulted in significant reductions in demand of products used most by elderly population (such as hearing aids). On top of this and with a higher negative impact in battery manufacturer's business models are the **disruptions in the products supply chain**: not only the market registered disturbances in the supply of commodities used in battery manufacturing but also most companies within the battery industry suffered lockdowns in their production plants which were concentrated in Asia, the region suffering the most with the drastic lockdown measures imposed. Additionally, a significant portion of battery manufacturers count with few major customers on their portfolio, increasing firm's risk exposure in case those customers face disruptions in their operations, which was highlighted by the global pandemic. Therefore, the major conclusion we are able to withdraw from the crisis and the battery industry is the **high overdependence on both third parties and the Asian region** that the battery industry is exposed to.

## How did COVID-19 impacted the battery industry?

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In contrast to the above-mentioned effects, the global pandemic **highlighted the need for innovation as key to succeed** at a time filled with global uncertainty. Technology and automation play, now, a critical role within the battery industry scope. Competition within the industry was already being intensified prior to the global crisis, forcing companies to invest in R&D and rely on technology edge as the way to anticipate consumer needs and actively shape future preferences and, this way, reinforce positioning in the market. The global crisis has **accelerated this process of technological innovation** that the battery industry was already experiencing, resulting in firms increasing investments and improving operations. Note that, as a result, we are observing the emergence of new end markets, which may reflect new opportunities for battery manufacturers to capture expand their offerings. The Drone market is a clear example of a high growth market that was positively impacted with the pandemic: with an expected CAGR of 19% from 2021 to 2026, Drones are emerging as innovative and autonomous solutions aimed to reduce human interaction activities, reflecting, this way, an opportunity for battery manufacturers to capture some of the future potential growth.

Regarding customer trends, **Household segments enjoyed a significant increase in demand directly associated with consumers spending more time at home, focusing in improving household comfort and entertainment.** The higher use of medical equipment intensified with the pandemic, coupled with **the increasing need to adapt to more technological solutions** proved to be a real opportunity for battery manufacturing companies to serve this high growth market. Apart from the above-mentioned disruptions in companies supply chain, the Electric Vehicle market registered an overall positive outlook during the crisis: even with customers shifting and adapting their habits, people around the world have been reflecting an **increasing preference towards greener, safer and more sustainable alternatives**, boosting demand for EVs.

What can we learn from all this? The major conclusion to withdraw from the impact of the global crisis in the battery industry is the importance of diversity within the company's end markets: by diversifying product portfolio offering with batteries suitable for different applications, firms can mitigate future risks that may arise with shifts in market trends. Additionally, **technology has strengthened its position as a game changer in the industry** and those companies that fail to recognize this won't be able to keep up with increasing competition.



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## Acquisition of VARTA Consumer in 2020

### VARTA Consumer

VARTA Consumer Batteries is one of the **leading manufacturers of consumer portable batteries in Europe**.

VARTA Consumer Batteries' successful business development is based on its **well-developed European distribution network** with numerous local companies and longstanding customer relationships with nearly all European key retailers.

The product portfolio includes batteries, rechargeable batteries, chargers, portable power (Power Banks) and lamps.

The segment acquired contributed revenue of € **335,7M** and a profit of € **8,0M** to the Group's results between January 1 and December 31, 2020

- The transaction expands VARTA AG's portfolio to include portable batteries for retail consumers
- VARTA AG gains access to attractive retail distribution channel ("retail")
- Worldwide VARTA trademark rights will be reunited under the aegis of VARTA AG
- VARTA Consumer Batteries' high, stable cash flow will principally be invested in the medium term in the expansion of VARTA AG's fast-growing, highly profitable, lithium-ion production and in the VARTA Consumer Batteries business area

### Transaction

Steffen Munz, CFO of VARTA AG:

*"The expected purchase price is well below the sum paid in transactions among comparable companies."*

<b>Deal Announcement</b>	2 Jan 2020
<b>Deal Type</b>	Acquisition of 100% Stake
<b>Acquirer</b>	VARTA AG
<b>Target</b>	VARTA Consumer Batteries GmbH & Co KGaA
<b>Seller</b>	Energizer Holdings Inc
<b>Deal Enterprise Value</b>	EUR 180 M
<b>Deal Status</b>	Completed
<b>Deal Geography</b>	Cross border
<b>Deal Nature</b>	Friendly
<b>Acquirer Sector</b>	Industrials
<b>Acquirer Country</b>	Germany
<b>Acquirer Ownership Type</b>	Publicly Listed Company
<b>Target Sector</b>	Industrials
<b>Target Country</b>	Germany
<b>Target Ownership Type</b>	Private
<b>Deal EV/2019 Revenue</b>	0.6x
<b>Deal Payment Mode</b>	Cash
<b>Deal Funding Mode</b>	Debt

### Identifiable assets acquired and liabilities assumed

<b>Intangible assets</b>	€44 631
<b>Property, plant and equipment</b>	€64 753
<b>Long-term Investments</b>	€50
<b>Other non-current assets</b>	€18
<b>Deferred tax assets</b>	€4 961
<b>Inventories</b>	€51 108
<b>Trade receivables</b>	€89 142
<b>Contract assets (IFRS 15)</b>	€1 594
<b>Tax refund claims</b>	€763
<b>Other current assets</b>	€47 565
<b>Cash and cash equivalents</b>	€29 408
<b>Deferred tax liabilities</b>	-€10 658
<b>Financial liabilities</b>	-€33 185
<b>Provisions for employee benefits</b>	-€41 073
<b>Other provisions</b>	-€57 935
<b>Trade payables and advance payments received</b>	-€31 824
<b>Contract liabilities (IFRS 15)</b>	-€1 415
<b>Tax liabilities</b>	-€27 637
<b>Other liabilities</b>	-€19 502
<b>Total identified net assets acquired</b>	<b>€110 764</b>

## VARTA has numerous strengths and attractive opportunities against weaker weaknesses and threats

### Strengths

- **High diversification within end markets** and unique product portfolio ensuring outperformance against economic down risk
- **Proactive response to market trends** and changes backed by the R&D unit and large network of research partners, ensuring constant innovation
- **Low dependence on third parties'** production facilities owning highly automated in-house developed technologies and machinery, with patented know-how
- **Vertical structure** enables strong and constant collaboration between engineers and manufactures
- **Technological leader:** latest production technology and know how of internationally qualified specialists
- **Large distribution channels** and efficient supply chain management
- **First mover advantage** in the production of coin-shaped rechargeable batteries
- **Strong, capable management team** backed with more than 130 years of experience

### Opportunities

- **Expected high growth in core end-markets:**
  - Technological progress mainly in wireless devices, increasing the demand for quality Microbatteries and energy solutions
  - renewable energies boosting energy storage
  - Digital networking is driving demand for batteries in many different sectors, such as IT, Medical, Communications
  - Demographic change, resulting in a higher demand for hearing aid batteries
- Expansion of production facilities in Germany allows VARTA to **meet the increasing demand for lithium-ion batteries**
- **Stable and high cash generation** provides liquidity for add-on improvements to accelerate growth
- Possibility to expand to **new strategic locations** and, thereby, to serve more markets

### Weaknesses

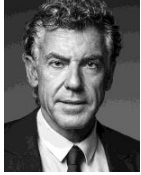
- **Sales highly dependent on major costumers** (such as Apple, Samsung, Bose), specially in the Microbatteries & solutions segment.
- Operations are subject to a variety of **environmental, health, and safety laws** and regulations that expose the firm to potential financial liability
- **Small scale of business against major competitors**, such as Energizer, Exide and EVE Batteries
- **Low international presence**, with the majority of the firm's operations and revenues concentrated in Europe
- **Dependence on strategic partners** within the companies' value chain that may create a gap in case of failure by any partner

### Treats

- **Risk of technological substitution**
- **Price pressure from competitors** (mainly from Asia) due to their labor cost advantage
- **Increasing competition** trying to benefit from increasing demand for lithium-ion batteries
- Unfavorable **Exchange Rates:** exposure to **interest rate risk and exchange risk**
- **High dependence commodities' price volatility**, particularly colbat, zinc, nickel and lithium
- Exposure to **suppliers' contracts** and **current terms of payments**
- **Lost of demand on hearing aids strong segment** due to significant decrease in elderly population derived from the pandemic
- Potential **long-term persistence of automotive market disruption** due to consecutive lock down scenarios of COVID-19 and consequent changes of preferences

## The supervisory board is formed by top professionals backed with excellent academic and professional backgrounds

### Management Team – Supervisory Board



#### **Prof. DDr. Michael Tojner**

Chairman of supervisory board since 2006. Mr Tojner has a strong academic background: a doctorate in Law and a doctorate in Business Administration. Regarding his professional background, Mr.Tojner is a real entrepreneur, counting with more than 20 years of experience in investment banking, Private Equity and Venture Capital financing. He is the founder and owner of Montana Tech Components AG, the founder and CEO of Global Equity Partners Beteiligungs-Management GmbH, a member of the Board of the Federation of Austrian Industries and a member of the supervisory Board of Dorotheum GmbH und Co KG.



#### **Dr. Harald Sommerer**

Mr. Sommerer is a Deputy Chairman at the supervisory board of VARTA AG. His strong academic background counts with a doctorate in Business Administration and an MBA. Dr.Harald is an entrepreneur and an investor since 2013 and, on top of these occupations, he is also a member of the supervisory board at Kapsch Traffic Com AG and a member of the management board at Federation of Austrian Industry.



#### **Frank-Dieter Maier**

Frank is a member of the supervisory board since 2016. With a degree from University of Karlsruhe, Frank has an outstanding professional background with leading positions in 6 companies. His past experience we include positions as chairman of executive board at Telefunken Elektronik GmbH, at Rosenthal Isolatoren GmbH, ANT Nachrichtentechnik GmbH and Chairman-Executive Officer at Draloric Electronic GmbH, among others.



#### **Sven Quandt**

Sven was 23 years old when he became a member of the company's supervisory board, which made him the youngest member of a supervisory board in Germany. He is also a former co-owner of VARTA AG, a long-term entrepreneur and a managing director. Mr. Quandt's prior experience counts with positions in advisory boards for different companies, namely, Hamburger Privatbank Wölbern and SQ Beteiligungs AGH.



#### **Dr. Georg Blumauer**

Member of VARTA AG's supervisory board since 2016. Mr.Blumauer is an attorney and managing director at Blumauer & Partner Rechtsanwälte GmbH. Mr.Blumauer occupies other board positions, such as Chairman-Supervisory Board for Wertinvest Entertainment Und Veranstaltungen AG and Chairman-Supervisory Board at VARTA Microbattery GmbH.



#### **Dr. Michael Pistauer**

Dr. Pistauer is a member of the Supervisory Board of VARTA AG since 2019, a member of the executive board of two VARTA pension associations and CFO of Montana Aerospace AG. Prior to these positions, he occupied the CFO position at VARTA AKTIENGESELLSCHAFT from 2016 to 2018 and he was also Director of M&A and Investor Relations. Dr.Pistauer's academic background includes a degree and a PhD in Business Administration by Vienna University of Economics and Business.

## EBITDA is growing exponentially as a result of VARTA’s strategic acquisitions, investment efforts and business units restructurations

	2016	2017	2018	2019	2020
<b>EBITDA</b>	<b>23,8</b>	<b>33,1</b>	<b>47,4</b>	<b>91,6</b>	<b>212,6</b>
<i>EBITDA Growth</i>		39,1%	43,2%	93,2%	132,1%
Costs of IPO	2,3	6,1	-	-	-
Reimbursement claims from pensions	-	-3,6	-	-	-
Costs of share-based remuneration	-	3,6	2,8	2,9	1,1
Expenses for M&A transactions	-	-	-	3,0	0,9
Measurement of inventories PPA	-	-	-	-	8,7
Integration costs for M&A transactions	-	-	-	-	0,1
Restructuring costs for subsidiary (M&A)	-	-	-	-	17,6
<b>Normalized EBITDA</b>	<b>26,1</b>	<b>39,1</b>	<b>50,2</b>	<b>97,5</b>	<b>241</b>
<i>EBITDA Growth</i>		49,8%	28,4%	94,2%	147,2%

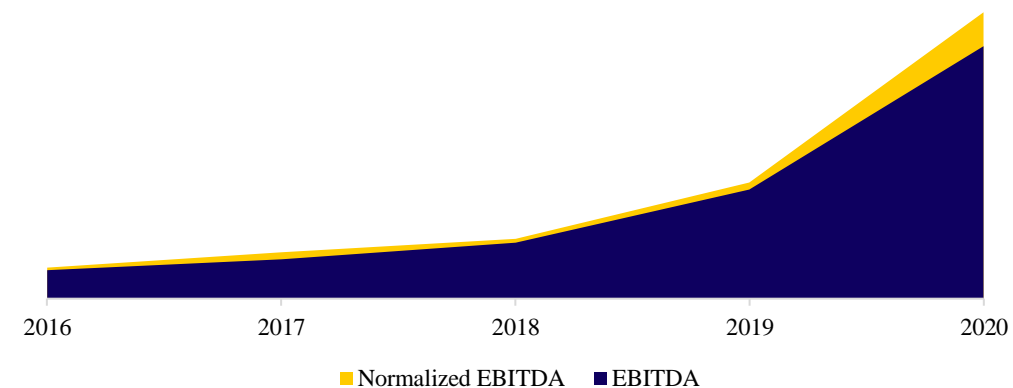
### EBITDA GROWTH DRIVERS

2 main drivers

1. In order to meet the enormous and continuously growing demand in the microbatteries segment in the future, VARTA is massively investing in increasing capacity, diversity of products, production facilities’ efficiency and innovation. These investments are responsible for the **organic growth of adjusted EBITDA, for potentiating very high and profitable revenues in lithium-ion cells and hearing aid batteries.**
2. The acquisition of VARTA consumer has strengthened the firm’s positioning as a **leading global manufacturer** of battery solutions by allowing VARTA to include device batteries for end consumers in its product portfolio that represent ~90% of the household batteries segment’s revenues.

### HIGHLIGHTS

1.
  - A. The period under analysis is marked by **abnormal events**, including an IPO event, significant investments in PPE, acquisitions and business restructuring resulting in extraordinary income and expenses unrelated with VARTA’s operating activity.
  - B. Adjusted EBITDA will be considered as a **more rigorous and accurate indicator** of the business
  - C. Normalized EBITDA grew by 147% in 2020, from which 90% is associated to organic growth.
  - D. When compared to EBITDA, the latest is substantially higher (by roughly 15,1%), for excluding extraordinary activity such as the costs of an M&A transaction
2. Costs of IPO are **punctual** and hence, considered when determining adjusted EBITDA.
3. The acquisition and consolidation of VARTA Consumer entailed some extraordinary costs, in particular € 8,7 m related to price allocations and € 17,6 m of restructuring costs.



## Historic Balance sheet

Balance Sheet (in €m)	2016	2017	2018	2019	2020
<b>ASSETS</b>					
Cash And Equivalents	12,3	138,5	149,7	244,8	121,9
Accounts Receivable	15,7	20,1	26,3	52,0	120,1
Inventory	42,6	53,8	56,7	64,0	133,3
Tax refund claims	0,5	0,7	0,5	0,2	1,9
Other financial assets	2,8	0	0,0	0,0	1,1
Other assets	9,4	13,1	14,2	17,4	54,9
Contract assets	0,0	0,0	2,4	2,0	2,6
<b>Total Current Assets</b>	<b>83,3</b>	<b>226,2</b>	<b>249,9</b>	<b>380,4</b>	<b>435,9</b>
Tangible assets	52,0	63,4	112,8	247,9	596,6
Intangible Assets	20,8	21,6	21,2	20,8	63,9
Long-term Investments	3,4	1,7	0,3	0,1	0,1
Deferred Tax Assets	3,8	2,3	1,5	1,2	6,1
Other Financial Assets	1,6	0,4	0,4	0,5	0,3
Other Assets	0	15,8	15,7	17,9	19,9
<b>Total Non-Current Assets</b>	<b>81,6</b>	<b>105,3</b>	<b>151,8</b>	<b>288,4</b>	<b>686,9</b>
<b>Total Assets</b>	<b>164,9</b>	<b>331,5</b>	<b>401,7</b>	<b>668,8</b>	<b>1 122,8</b>

	2016	2017	2018	2019	2020
<b>LIABILITIES</b>					
Accounts Payable & Adv. Payments	22,1	32,5	35,0	88,8	137,4
Accruals	14,3	16,6	12,0	16,6	92,0
Lease liabilities	-	0,0	0,0	4,6	14,2
Taxes Payable	4,2	4,7	7,3	14,3	45,7
Other Financial Liabilities	3,1	2,2	2,7	4,1	6,3
Provisions for employee benefits	1,0	1,1	1,0	1,2	2,4
Contract liabilities	0,0	0,0	8,4	11,2	5,9
Other liabilities	7,4	10,3	11,0	20,0	34,7
Other provisions	3,0	4,3	4,3	4,4	39,2
<b>Total Current Liabilities</b>	<b>55,1</b>	<b>71,6</b>	<b>81,9</b>	<b>165,2</b>	<b>377,7</b>
Lease Liabilities	0,0	0,0	0,0	20,5	63,8
Other Financial Liabilities	21,8	6,2	6,2	2,8	51,1
Provisions for employee benefits	22,7	22,8	23,6	27,2	77,1
Advanced payments recieved	0,0	0,0	30,2	34,3	47,2
Def. Tax Liability	0,0	0,0	0,0	0,0	4,2
Other provisions	0,0	0,0	0,2	3,4	1,9
Accruals	0,0	0,0	0,0	0,0	0,6
Other liabilities	0,1	0,4	0,1	0,1	0,1
<b>Total Non-Current Liabilities</b>	<b>44,6</b>	<b>29,4</b>	<b>60,4</b>	<b>88,3</b>	<b>246,0</b>
<b>Total Liabilities</b>	<b>99,6</b>	<b>101,0</b>	<b>142,3</b>	<b>253,6</b>	<b>623,7</b>
Subscribed capital	29,6	38,2	38,2	40,4	40,4
Capital reserve	2,7	146,7	149,4	250,7	251,7
Retained Earnings	18,0	28,6	41,6	69,7	114,4
Net Income	9,4	13,3	25,3	50,4	95,4
Other reserves	5,6	2,7	3,5	4,5	-3,2
<b>Total Equity of VARTA AG Group</b>	<b>65,3</b>	<b>229,5</b>	<b>258,0</b>	<b>415,7</b>	<b>498,8</b>
Minority Interest	0,0	1,0	1,4	0,2	0,3
<b>Total Equity</b>	<b>65,3</b>	<b>230,5</b>	<b>259,4</b>	<b>415,9</b>	<b>499,1</b>
<b>Total Liabilities And Equity</b>	<b>164,9</b>	<b>331,5</b>	<b>401,7</b>	<b>669,5</b>	<b>1 122,8</b>

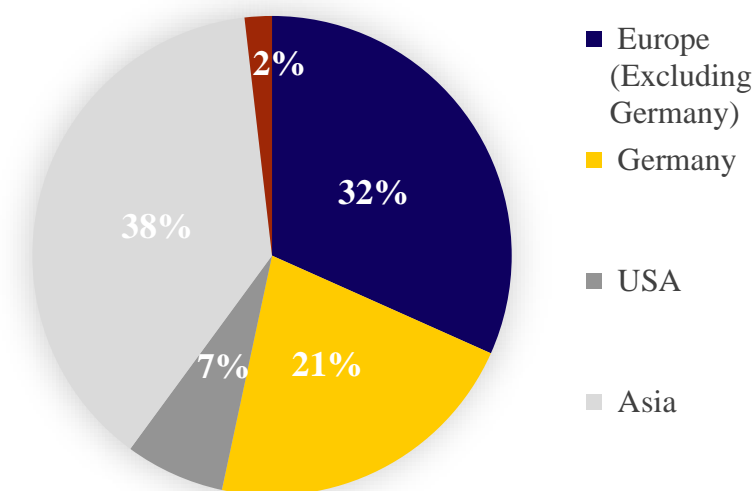
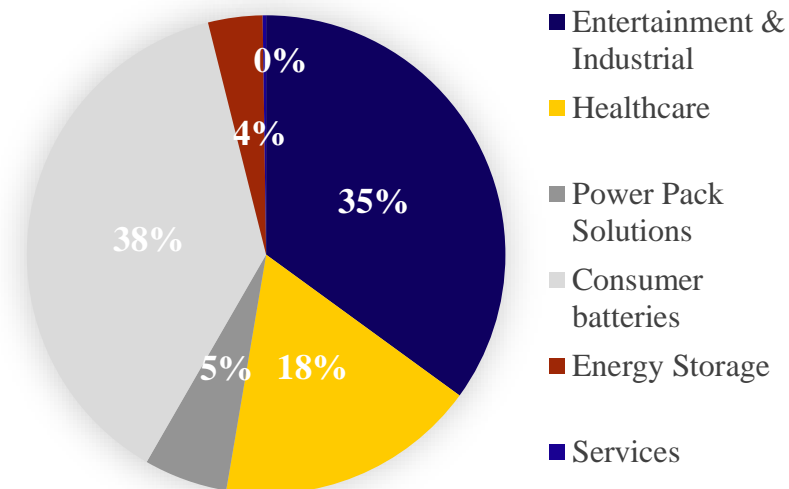
## Historical Cash Flow statement

Cash Flow Statement	2016	2017	2018	2019	2020
Earnings before taxes	12,1	21,0	36,4	71,1	133,1
Net financial result less sundry financial expense/sundry financial income	1,7	0,7	0,3	0,5	5,0
Results from at equity measurement	1,5	1,7	-0,1	0,0	0,0
Depreciation and amortization	8,9	9,4	10,5	20,9	66,6
Gains and losses from the sale of property, plant and equipment and intangible assets	-0,4	0,1	0,0	0,1	0,2
Other non-cash income and expenses	-4,7	-1,0	1,3	-1,5	-1,8
<b>Change in working capital</b>	<b>8,5</b>	<b>-4,4</b>	<b>28,3</b>	<b>27,5</b>	<b>68,9</b>
Inventories	0,9	-12,3	-2,3	-7,2	-20,4
Trade receivables and other current assets	-3,9	-9,2	-8,0	-28,2	13,3
Trade payables and other current and non-current liabilities	8,6	15,1	38,0	58,0	43,0
Provisions and liabilities from pensions	2,9	1,9	0,6	4,9	32,9
Income tax paid	-3,3	-5,6	-6,9	-12,9	-39,1
<b>Net cash flow from ongoing operating activities</b>	<b>24,2</b>	<b>22,0</b>	<b>69,7</b>	<b>105,7</b>	<b>232,9</b>
Capital expenditure on the acquisition of intangible and tangible assets	-22,5	-17,0	-56,3	-102,8	-302,2
Own work capitalized	0,0	-3,5	-4,2	-4,3	-5,0
Cash receipts from the sale of intangible and tangible assets	0,1	0,0	0,1	0,5	1,5
Payments by joint ventures into the capital reserve	-2,0	0,0	0,0	0,0	0,0
Payments from raising loans	0,0	0,6	-0,4	0,0	0,0
Investment in investments less acquired cash and cash equivalents	0,0	0,0	0,0	-0,2	-67,8
Receipts from the repayment of loans	1,5	0,1	0,1	0,0	0,0
Repayment of capital reserve from associated companies	0,0	0,0	1,5	0,4	0,0
Receipts from the repayment of loans to affiliated companies	0,8	2,8	0,0	0,0	0,0
Interest received	0,1	0,1	0,2	0,6	0,3
<b>Cash flow from investing activities</b>	<b>-21,6</b>	<b>-16,9</b>	<b>-59,0</b>	<b>-105,8</b>	<b>-373,1</b>
Receipts/payments from capital measures	-1,5	150,5	0,0	103,8	0,0
Payments for the costs of the IPO	0,0	-1,5	0,0	0,0	0,0
Payments for the costs of the capital increase	0,0	0,0	0,0	-1,6	0,0
Payments for leasing liabilities	0,0	0,0	-1,5	-9,1	-14,0
Payments from the payment of interest-bearing financial liabilities	1,7	-15,8	1,5	2,2	41,4
Repayments of interest-bearing current financial liabilities	0,0	0,0	0,0	0,0	-3,4
Payments from the assumption of the joint debt obligation	0,0	-11,2	0,0	0,0	0,0
Interest paid	-1,4	-0,5	-0,1	-0,4	-4,1
<b>Cash flow from financing activities</b>	<b>-1,2</b>	<b>121,6</b>	<b>-0,1</b>	<b>94,9</b>	<b>19,9</b>
<b>Net change in cash and cash equivalents</b>	<b>1,3</b>	<b>126,7</b>	<b>10,8</b>	<b>94,8</b>	<b>-120,2</b>
Cash and cash equivalents as of January 1	10,9	12,3	138,5	149,7	244,8
The effects of changes in foreign exchange rates	0,1	-0,5	0,5	0,2	-2,7
<b>Cash and cash equivalents as of December 31, 2020</b>	<b>12,3</b>	<b>138,5</b>	<b>149,7</b>	<b>244,8</b>	<b>121,9</b>

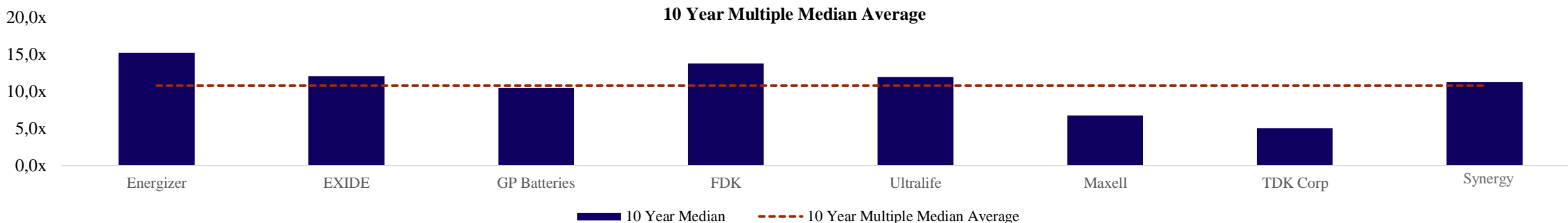
## Diversified sales per product market and geographically

	2016	2017	2018	2019	2020
<b>Sales by Segment</b>	<b>218 891</b>	<b>244 692</b>	<b>276 130</b>	<b>366 346</b>	<b>871 297</b>
<b>Microbatteries &amp; Solutions</b>	<b>200 461</b>	<b>228 718</b>	<b>253 410</b>	<b>340 862</b>	<b>508 132</b>
Entertainment & Industrial	63 618	69 332	79 561	150 510	305 100
Healthcare	113 733	134 371	139 301	150 950	153 800
Power Pack Solutions	23 110	25 014	34 548	39 402	49 232
<b>Household batteries</b>	<b>11 512</b>	<b>12 523</b>	<b>17 209</b>	<b>21 382</b>	<b>361 147</b>
Consumer batteries	-	-	-	-	329 100
Energy Storage	11 512	12 523	17 209	21 382	32 047
<b>Services</b>	<b>6 918</b>	<b>3 451</b>	<b>5 511</b>	<b>4 102</b>	<b>2 018</b>
IT Services	828	862	1 031	600	300
Product Design	513	306	1 922	1 000	500
Services to research institutes	5 577	2 283	2 558	2 502	1 218
<b>Sales by Region</b>	<b>213 815</b>	<b>242 157</b>	<b>271 650</b>	<b>362 692</b>	<b>869 583</b>
Europe excl. Germany	56 650	61 700	74 900	75 500	275 500
Germany	46 350	57 000	62 500	67 700	188 500
USA	52 500	55 800	56 200	60 200	58 400
Asia	54 300	63 400	72 900	154 900	331 200
Other	4 015	4 257	5 150	4 392	15 983

### FY20



## Representative selection of peers used in EV/EBITDA Multiple Valuation and DCF EMM Terminal Value



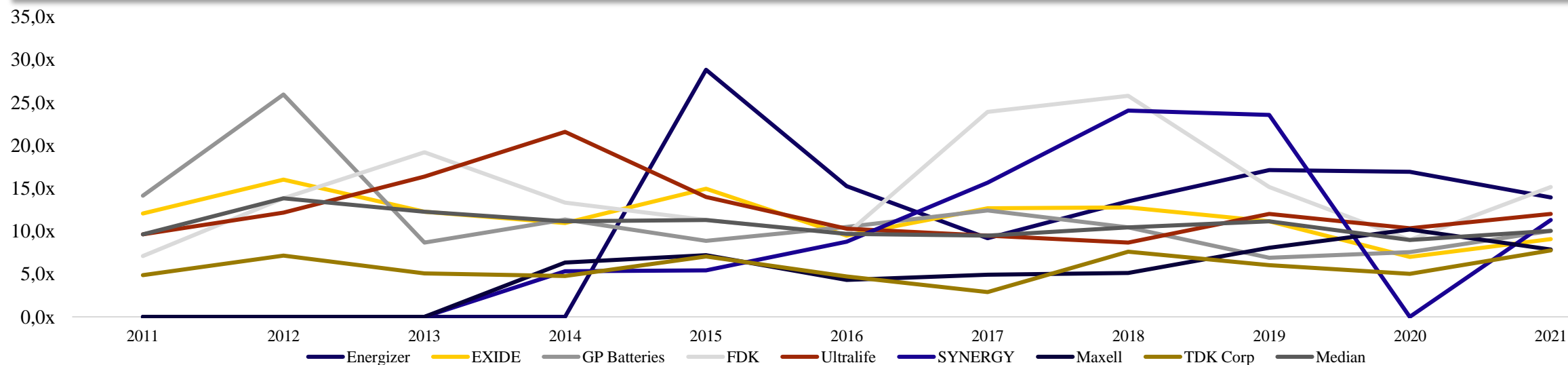
Peer	Relative Size <sup>1</sup>	EBITDA (€ M)	Description	Comparability
<b>Energizer</b>	280 %	370	Performance batteries, rechargeable batteries and battery chargers, hearing aid, special batteries and other power products	High
<b>EXIDE</b>	137 %	170	Automotive, Industrial, Inverter, Submarine batteries, Solar solutions, Home UPS systems and E-Rickshaw vehicles	Low
<b>GP Batteries</b>	80%	58	Lithium, Alkaline and Carbon Zinc (single and rechargeable) batteries for a wide range of applications (radio, electric toothbrush)	Medium
<b>FDK</b>	71%	7	Consumer batteries: alkaline batteries, re chargeable batteries, carbon zinc batteries and Industry batteries: Ni-Nhm batteries, Lithium batteries, Alkaline batteries and electronic components	Medium
<b>Ultralife</b>	11%	5	Two main segments: Battery & Energy products and Communication systems. The first segment includes several lithium rechargeable batteries that are sold to the military and OEM industrial end markets and Communication systems comprise RF amplifiers, power supplies, power cables, connector assemblies, amplified speakers, equipment mounts, case equipment, etc.	High
<b>Maxell</b>	114%	80	Product portfolio comprises batteries (Alkaline, Zinc and Lithium), headphones and earphones	High
<b>TDK Copr</b>	1 029%	1 919	Product portfolio includes: capacitors, inductors, EMC Components. RF components, Temperature protection devices, Sensor systems, Solar cells, Biosensor, Solid state batteries, Lithium.ion batteries and power suppliers, all applicable in IT, Communication, Automotive, Industrial and Energy, Consumer and Medical end markets	Low
<b>Synergy</b>	6%	5	Design, development and production of rechargeable lithium-ion and lithium-ion polymer batteries. Product suitable for wearable devices, Bluetooth devices, Medical applications, IoT and computers.	Medium

1) Relative size against VARTA (Peer Sales / VARTA sales) – Source: Bloomberg / Annual Reports

## Detailed trading comparables

Companies	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Energizer	n.a.	n.a.	n.a.	n.a.	n.a.	28,8x	15,3x	9,1x	13,5x	17,1x	16,9x	13,9x
EXIDE	10,8x	12,1x	16,0x	12,3x	10,9x	14,9x	9,5x	12,7x	12,7x	11,1x	7,0x	9,0x
GP Batteries	107,9x	14,1x	25,9x	8,7x	11,4x	8,9x	10,5x	12,4x	10,4x	6,9x	7,5x	10,0x
FDK	12,2x	7,1x	13,8x	19,2x	13,3x	11,3x	9,7x	23,9x	25,8x	15,2x	8,9x	15,1x
Ultralife	6,9x	9,6x	12,2x	16,3x	21,6x	14,0x	10,3x	9,4x	8,6x	12,0x	10,3x	12,0x
Maxell	n.a.	n.a.	n.a.	n.a.	6,3x	7,2x	4,3x	4,9x	5,1x	8,1x	10,2x	7,8x
TDK Corp	7,8x	4,8x	7,1x	5,0x	4,7x	7,1x	4,7x	2,9x	7,6x	6,0x	5,0x	7,7x
SYNERGY	n.a.	n.a.	n.a.	n.a.	5,3x	5,4x	8,8x	15,6x	24,0x	23,6x	n.a.	11,3x
<b>Median</b>	10,8x	9,6x	13,8x	12,3x	11,1x	11,3x	9,7x	9,4x	10,4x	11,1x	8,9x	10,0x

### Historical EV/EBITDA



## Representative selection precedent transactions

Date	Target	Buyer/Investor	Implied TEV/LTM EBITDA	Target Description
11-2011	Shin-Kobe Electric Machinery Co Ltd	Showa Denko Materials Co., Ltd.	9,39 x	Storage batteries manufacturer; Power supply systems and molded plastics for automobile parts
12-2013	Tesson Holdings Limited (59.98% Stake)	Double Key International Limited	4,12 x	Investment holding company mainly engaged in the production and sale of lithium ion motive batteries
09-2014	Hefei Guoxuan High-Tech Power Energy Co Ltd	Gotion High-tech Co., Ltd.	15,24 x	Battery manufacturer mainly engaged in Lithium phosphate materials, power battery packs and energy storage battery packs
10-2014	Ener-Tek International, Inc.	Vectra Co.	8,60 x	Manufacturer of lithium-ion batteries; provides silver-zinc cells and batteries for niche applications in defense and aerospace markets
09-2015	Sunwoda Electronic Co.,Ltd	-	18,40 x	Li-ion battery manufacturer mainly suitable for phones, lightning, medical, and digital camera areas
11-2016	DLG Power Battery (Shanghai) Co., Ltd. (49.6% Stake)	MeiDu Energy Corporation; Hangzhou Shuhan Investment Management Partnership	67,20 x	DLG provides customized green energy solutions based on core technology of battery cell manufacturing
05-2017	CITIC GUOAN MGL Co., Ltd. (28.78% Stake)	Hangzhou Purun Xinneng Equity Investment Partners	10,72 x	Energy storage battery manufacturer; engaged in production of new composite metal oxide materials and lithium-ion secondary batteries
09-2017	Shenzhen Zhuoneng New Energy Co., Ltd. (87.58% Stake)	Zhejiang Kan Specialities Material Co., Ltd.	37,89 x	Manufacturing and sales of lithium ion battery and electric vehicle power systems
11-2017	Jiangsu Zhihang New Energy Co., Ltd. (49% Stake)	Zhejiang Unifull Industrial Fiber Co., Ltd.	10,46 x	High-tech enterprise focusing on R&D, production and sales of power-type li-ion battery cathode materials, lithium batteries, battery packs
01-2018	Global Battery and Lighting Business of Spectrum Brands Holdings, Inc.	Energizer Holdings, Inc.	11,80 x	Consumer products company, leading supplier of consumer batteries (household and lightening services)
06-2018	CITIC GUOAN MGL Co., Ltd. (51.16% Stake)	Rise Sun Holding Co., Ltd.	46,45 x	Energy storage battery manufacturer; engaged in production of new composite metal oxide materials and lithium-ion secondary batteries
07-2018	Shenzhen Herewin Technology Co., Ltd. (39.4% Stake)	Sichuan Golden Summit (Group) Joint-stock Co., Ltd.	19,49 x	Leading hi-tech enterprise specializing in polymer lithium ion battery R&D and manufacturing
03-2020	Shandong Xingfeng New Energy Technology Co., Ltd. (49% Stake)	Shanghai Putailai New Energy Technology Co., Ltd.	11,02 x	Materials manufacturer focused in the production of lithium-ion battery anode materials and high-quality carburant

## DCF valuation: Gordon Growth Model and Exit Multiple model

DCF – Gordom Growth Model									Assumptions
Free Cash Flows to the Firm	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	
Present Value of Cash Flows	91 131	179 573	211 062	228 514	234 540	239 330	248 222	253 437	<ul style="list-style-type: none"> <li>• WACC of 6,52%</li> <li>• Tax rate 29,1%</li> <li>• Terminal value growth rate in the base case was assumed to be 1,62%, equal to the risk free rate</li> <li>• Growth rate in both pessimistic and optimistic scenarios of 1% and 3%, respectively</li> </ul>
<b>Terminal Value Computation</b>							Multiples		
Scenario 1: Pessimistic							17,8	2 982 558	
Scenario 2: Base Case							19,4	3 380 825	
Scenario 3: Optimistic							25,2	4 771 439	
<b>Final EV</b>									
Scenario 1: Pessimistic	4 306 998								
Scenario 2: Base Case	4 705 265								
Scenario 3: Optimistic	6 095 879								
DCF – Exit Multiple									Assumptions
Free Cash Flows to the Firm	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	
Present Value of Cash Flows	91 131	179 573	211 062	228 514	234 540	239 330	248 222	253 437	<ul style="list-style-type: none"> <li>• WACC of 6,52%</li> <li>• Tax rate 29,1%</li> <li>• Exit EV/EBITDA multiple in the base case was assumed to be 11.8x, multiple obtained through past transactions approach</li> <li>• Exit multiple in both pessimistic and optimistic scenarios of 9.6x and 13.6x respectively</li> </ul>
<b>Terminal Value Computation</b>									
2028 Forecasted EBITDA	347 794						Multiples		
Scenario 1: Pessimistic							14,3	2 146 200	
Scenario 2: Base Case							16,4	2 638 037	
Scenario 3: Optimistic							18,0	3 040 450	
<b>Final EV</b>									
Scenario 1: Pessimistic	3 470 640								
Scenario 2: Base Case	3 962 477								
Scenario 3: Optimistic	4 364 890								

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