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### ***Note to the reader***

This paper tries to convey our research on Zaptec and the industry they operate in. The first half of the paper focuses on the big picture and general industry characteristics which is important to fully appreciate Zaptecs competitive position and long-term outlook.

The second half is focused on Zaptecs fundamentals, good and bad, and compares Zaptec with its relevant peers. At the very end, you can find our conclusion which you may find helpful to read first, especially if you are not already familiar with the basics of Zaptec and the industry.

## **The big picture – electric vehicles (EV) and the green transition**

After a significant period of nearly complete consensus among scientists that global warming is real, likely to have disastrous consequences, and driven by human activities, citizens, politicians, and corporations are starting to realize the need for action. Addressing global warming is a momentous task that will require all the ingenuity and cooperation humans are known to muster in times of need.

The results of early efforts in the green transition are already altering the world as we know it. After decades of private and public effort, renewable energy sources such as wind and solar can now produce energy cheaper than conventional sources such as coal, oil, and gas. This is a huge milestone and a testament to what humans can achieve when we have the will and determination to solve seemingly insurmountable challenges. Today we are increasingly reaping the benefits in the form of cheap, clean electricity when the sun is shining, and the wind is blowing.

Some of the next big challenges in the green transition are to make renewable electricity available all the time, also when there is no sun and wind, and to make the renewable energy available for consumption outside the electrical grid, e.g. for transportation or industrial use (which together makes up 40% of global greenhouse gas emissions and 55% of global energy consumption<sup>1</sup>). As a stepping stone for making sure electricity is always available, wind and solar energy are paired with swing capacity such as hydropower or natural gas. Hydropower is a great, clean source of energy but requires very specific terrain features which severely limits expansion opportunities. Natural gas is another obvious choice from an environmental perspective which to some degree explains why Europe became so dependent on Russian natural gas. In any case, natural gas is only a temporary solution as it does emit significant amounts of greenhouse gasses. The long-term solution is to efficiently store renewable energy for later consumption without jeopardizing the security of supply. Batteries are one of the obvious choices for short-term storage of energy, but we need other solutions for long-term storage.

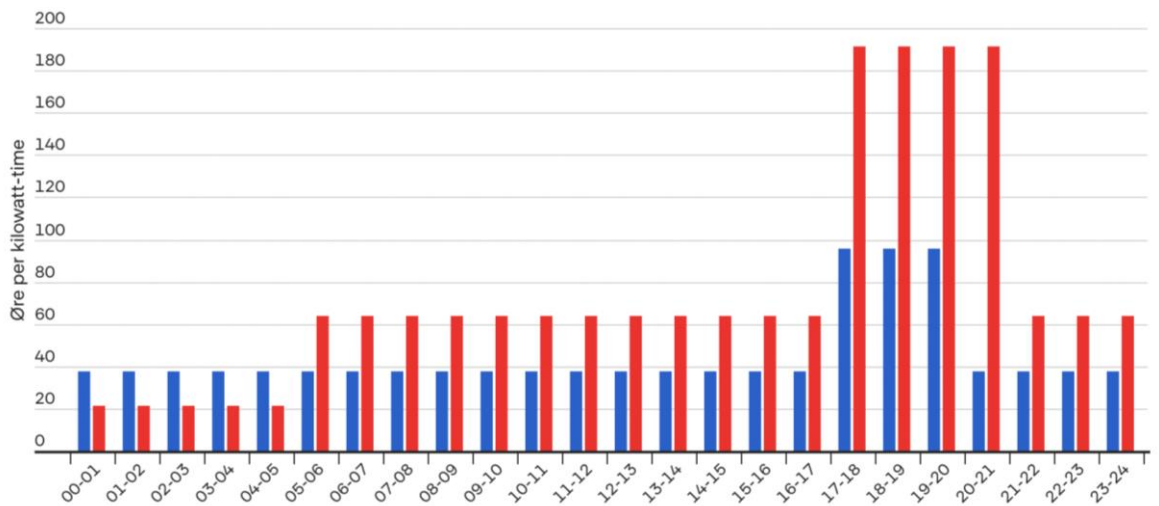
Road transport makes up 12%<sup>1</sup> of global greenhouse gas emissions and 16%<sup>1</sup> of global energy consumption. Electric Vehicles (EV) and hydrogen-powered vehicles are the two likely technologies that can drive the green transition of road transport. For light vehicles electrification is the obvious choice because the use patterns allow most of the charging to take place when there is free capacity in the grid (e.g. during nights and weekends) and/or when there is plenty of cheap renewable energy available. Obviously, some charging also needs to take place when the grid is strained, and the energy comes from expensive fossil fuels but overall EVs can efficiently use the spare capacity of the grid and excess renewable energy when there is plenty of wind and solar. In the future Vehicle to Grid (V2G) technology is likely to allow EVs to discharge and deliver electricity to the grid when demand is peaking and in effect provide some of the short-term storage of energy, we need to increase our overall consumption of renewable energy.

Denmark is a great case study for the future direction of the energy markets in many countries because the share of renewable energy in Denmark is very high. The price of

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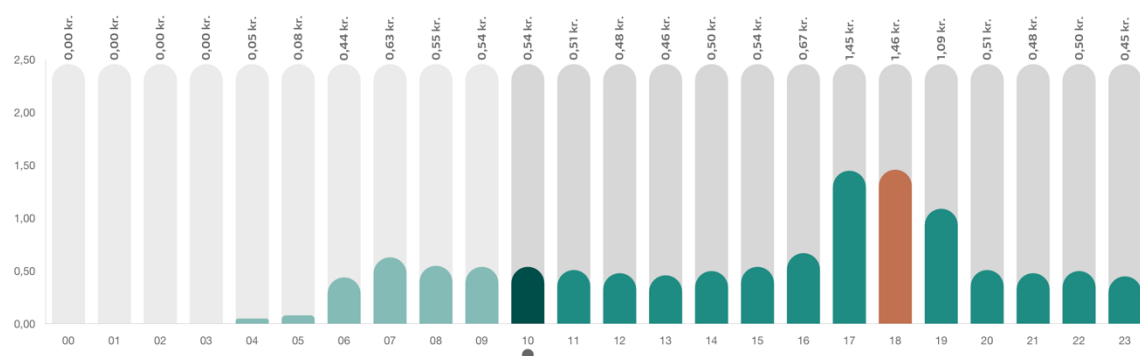
<sup>1</sup> According to our world in data - <https://ourworldindata.org/emissions-by-sector>

electricity is usually made up of three components, the 'raw' energy price, transmission costs, and taxes. Taxes obviously varies from country to country, in Denmark, there are two components, a VAT of 25% and a tariff that used to be 90 øre per kWh but is temporarily lowered to 0,8 øre per kWh because of the European energy crisis. In Denmark, EVs are exempt from paying the tariff.



Transmission cost in øre per kWh from October to March in Copenhagen. The blue lines are the historical costs, the red lines are the new costs with effect from January 1<sup>st</sup> 2023.

The graph above shows the transmission costs for electricity in Copenhagen. The blue lines represent the historic costs and the red lines are the new costs with effect from 1<sup>st</sup> of January 2023. The transmission costs are meant to represent the cost of running the grid and nudge the consumers to consume electricity when there is spare capacity in the grid. Peak consumption is in the afternoon when people are home, cooking dinner, watching TV and to some degree doing the laundry and other tasks that we are not able to do when we leave the house during the day. The grid needs to be built out to meet peak demand, leaving plenty of capacity outside of peak demand. EV's should avoid charging at peak demand if possible and charge during the night when there is plenty of capacity and most cars usually are parked at home anyway.



'Raw' cost of electricity in kroner per kWh on November 7<sup>th</sup> 2022, a windy day in Denmark

The 'raw' cost of electricity often follows a similar pattern to the transmission costs but with the added volatility of how much electricity is generated from wind and solar. In Denmark, the peak price of electricity during a day is often several times the lowest price and

sometimes during windy periods electricity can be free, as seen in the graph above from November 7<sup>th</sup> this year. During the summer electricity is often cheap during the day, outside of peak demand.

Hydrogen is also a promising technology that allows for efficient long-term storage and quick transmission to vehicles. However, electrification is an inherently better technology for all applications where electricity can be meaningfully applied. Green hydrogen is generated from electricity and usually needs to be converted back to electricity to be consumed. The conversions lead to a large loss of energy and require special equipment which is quite expensive today. In addition, Hydrogen is a tricky molecule to handle and the infrastructure needs to be built up almost from scratch. EVs are much more energy efficient (because of less energy losses) and fits very nicely with the existing energy infrastructure. The main drawback of EVs is that charging takes a long time and the batteries become cumbersome if large amounts of energy need to be stored, which makes electrification impractical in some applications. Our research indicates electricity is the obvious choice for light vehicles and the likely choice for short-haul heavy road transport while hydrogen is the likely choice for long-haul heavy road transport. Hydrogen is also very promising in other areas such as shipping and long-term energy storage which cannot be solved by electrification.

Batteries are relatively heavy and expensive which despite advantages in other areas makes EVs more expensive than Internal Combustion Engine (ICE) cars today. When an EV leaves the factory, it has a higher carbon footprint than an ICE car and how quickly the EV become a net positive compared to ICE depends on the source of the electricity consumed. The higher the share of renewable energy, the quicker the EV becomes net positive compared to ICE cars. As the production of EVs and in particular batteries are scaled up, efficiency and technological advancements are expected to reduce costs significantly while scarcity of raw materials for batteries is likely to increase costs. If history is any guide, there is plenty of raw materials to be found, but there are likely to be bottlenecks in extracting and processing raw materials, especially if EV adoption really starts to take off globally. Today northern Europe and China are leading the adoption of EVs.

We think it is very, very likely EVs will be the dominant light vehicle of the future, especially in regions like northern Europe with a high share of renewable energy and relatively strong grids. The strong support from politicians, car manufactures, and consumers will help the technology develop further and become more competitive both from an economic and environmental point of view. If we are to get anywhere close to the ambitious long-term emission reduction targets most governments have committed to, EVs are a relatively cheap and noninvasive part of the solution. Reducing emissions from other areas such as aviation or livestock requires technological breakthroughs, which likely entail high costs and ultimately risks limiting the citizens' consumption options. In comparison electrification of light vehicles looks like a no-brainer.

### **EV charging options**

Broadly speaking charging can be divided into slow AC home and destination charging and fast 'on the move' DC charging. Fast DC charging is expensive, requires a lot of grid capacity, and is absolutely necessary to drive the adoption of EVs. Without the ability to quickly

charge when needed, range limitations would make EVs impractical for most users. However, unless you absolutely need to charge quickly, AC home or destination charging is the far superior choice, both from an economic and environmental standpoint.

The table below shows a rough estimation of the costs associated with installing different types of chargers. Obviously, the costs vary significantly from country to country, location to location, and depends on the capabilities of the charge. The cost variations for DC chargers are by far the largest.

(NOK, ex VAT)	AC single user, ex grid	AC multiuser, ex grid	AC multiuser, incl grid	DC fast charger, incl grid
kW output	11,0	22,0	22,0	150,0
Chargetime, hours	~5,0	~2,5	~2,5	~0,3
Charger price	5.500	10.000	10.000	200.000
Groundworks	0	15.000	15.000	15.000
Installation and cables	4.500	10.000	10.000	30.000
Cost of grid connection	0	0	40.000	300.000
Total price per charger	10.000	35.000	75.000	545.000

- Chargetime is an approximation of charging from 20% to 80% capacity for a 80 kWh battery
- Charger prices, Groundworks, Installation and cables are estimated based on market research
- Cost of grid connection is based on grid connection costs in Denmark, but can vary significantly

AC single-user chargers are commonly known as wallboxes and are typically installed on walls in single-family houses and uses the existing grid capacity of the house. This means the total installation costs are low and the user has great opportunities to charge when there is cheap, clean energy available in the grid.

AC multiuser chargers are typically installed at multi-family housing, workplaces, and parking lots. Most often the chargers cannot be installed on walls which means groundworks are needed for the wiring. If possible, the chargers are installed within the existing grid connections of the associated building but as more chargers are installed over time, extra grid connections will increasingly be needed. The actual charger needs to be more advanced to handle multiple users and effectively use the grid capacity available which can vary depending on the number of cars charging and the use of the associated building. Depending on the location and time of year there are still significant opportunities to charge when there is cheap clean energy available in the grid, e.g. at work during sunny summer days or at home during windy nights. Sometimes charging may be provided at cost, e.g. at home or at work, sometimes charging may be provided with at margin to a company that manages the parking lot.

Fast DC chargers are typically installed along highways or similar locations with a lot of traffic to provide fast charging when on the move. DC chargers almost always need to acquire a grid connection and the charger is technologically complex and expensive. DC charging is almost always provided with at margin to a company and there are basically no opportunities to time charging with the availability of cheap clean energy.

## EV charging market size and growth outlook

The market for EV chargers is clearly very closely associated with the sale of EVs. When an EV is produced, the owner will need to charge the car. If the owner of the new EV already owns an EV and a charger, the owner will likely sell the old EV to another person who then needs to charge the old EV. Eventually, the relationship between EVs and chargers will depend on the relative life expectancy of the charger and the car and the network density of chargers that are needed (mainly relevant for DC fast charging as the market matures). However, that is a question for the future as it will take decades to convert the entire car fleet to EVs, even if all cars sold today were EVs.

For the next decade we think the important figure to monitor is new EV sales. If a constant number of new EVs are sold, the market for chargers is also likely to be constant. If EV sales double, the market for chargers is also likely to double. Local regulations and subsidiaries can give short-term deviations and technological advances could impact the installed base of chargers, e.g. vehicle-to-grid (V2G) technology could make the installed base of chargers partly obsolete, increasing the replacement rate and thus sales of chargers.

	Adoptation rate, Battery Electric (BEV), YTD	Adoptation rate, Plug-in Hybrid (PHEV), YTD	Implied growth, BEV to 90%	New car sales, thousands, YTD
Norway	78%	10%	12%	135
Sweden	30%	23%	149%	253
Denmark	19%	17%	290%	187
Netherlands	17%	9%	377%	281
Switzerland	16%	8%	388%	204
Germany	16%	13%	379%	2.337
Austria	15%	6%	435%	197
UK	15%	6%	439%	1.486
France	13%	8%	499%	1.371
Luxembourg	12%	7%	572%	39
Belgium	7%	13%	782%	342
Italy	4%	5%	1733%	1.212
Europe	11%	9%	606%	8.359

*Implied growth is calculated as growth from YTD BEV adoption rate + 0,25 x YTD PHEV adoption rate and up to 90% BEV adoption rate.*

We use the full battery electric vehicle share of new sales and 25% of Plug-in hybrid vehicle share of new sales to estimate the remaining charger market growth from the market adoption of EVs. Plug-in hybrids are by design inefficient because they both need an internal combustion engine and an electric motor and associated battery, which is often too small to make a real impact. Our research indicates Plug-in hybrids drive far less charger sales than full battery electric vehicles. The implied market growth in the table above assumes that eventually 90% of new car sales will be fully battery electric, slightly above the current rate of 78% in Norway. Note that new car sales YTD are negatively impacted by supply chain constraints and the general economic downturn and thus a normalization of car sales would also result in a larger number of EV charger sales. Taken together, the table shows a very strong growth prospect for the EV charger market if cars sales normalizes and adoption rates continue to increase.

## **Competitive landscape**

With the notable exception of Norway, the adoption of EVs has only really started to take off in the last couple of years. This means the industry is very young and fragmented with many local companies that have been partly protected by local regulations and sometimes benefitted from access to existing distribution channels. Some companies have managed to grow truly internationally with significant sales in many countries. Some large conglomerates like ABB have a significant presence in especially fast DC charging which is more closely related to their other business units (B2B sale of expensive, complicated equipment). The large leap in EV adoption since 2020 has resulted in very high demand, that at times surpassed supply. Combined with plentiful cheap financing this has created an environment where most companies seemed to succeed, at least if success is measured by revenue growth. However, the economic and financial conditions have changed dramatically and the high growth, cash-burning strategy many charging companies pursued have become all but impossible to finance. This is hurting many companies with some already on the brink of bankruptcy. We also think many of the smaller local companies will struggle as the larger successful international companies fully adopts to the local regulations and supply catches up with demand in all markets. Companies with mediocre products that appeared successful because of excessive demand will struggle the most in a more balanced supply and demand situation.

Although the entire industry is hurting in the short term, the profitable companies with great products and significant international sales stand to benefit in the long term. They will not only benefit from the underlying market growth but operate in a healthier market with less deliberate money burning in the pursuit of growth.

The consensus seems to be that the charging industry is going to be very competitive and we concur. The basic functionality of charging cars is not very complicated and it is difficult to patent technologies because electricity is an old invention. We also acknowledge that the likely range of outcomes for any one company is large because the industry is young and competitive.

However, we think the consensus is too pessimistic and would like to explain why. The cost of the actual charger varies between ~15 to 55% of the total installation cost. Wallboxes are the most price sensitive, but they are partly helped by being installed on people's most valuable asset and used to charge people's likely second most valuable asset.

Distribution is complicated and thus greatly protected by the need for professional installation. This makes it much more difficult for new players to enter the market, especially for multiuser chargers where distribution is the most fragmented and dependent on installers. There is also some stickiness when the first multiuser chargers are installed in a given location. As the adoption of EVs grows and more chargers needs to be installed at the same location, the best choice is often to install more of the same type of chargers.

We also think many underestimate the complexity of making an efficient, smart, and safe charger that is fully adapted to local regulations. Norway is by far the most mature market for EV chargers and the Norwegian Automobile Federation (NAF) tested ten of the most



popular wallboxes in April 2022<sup>2</sup>. The test arguably showed that only one of the ten of the chargers met all regulatory and safety standards.

### **Zaptec - The Norwegian player**

Zaptec was founded in 2012 as a supplier of a broad set of technological devices but quickly started focusing on EV charging solutions which since 2016 has been the sole focus of the company. The original Zaptec Pro charger aimed at the market for multiuser AC charging was launched in 2016 and Zaptec's international expansion started in 2017. The Zaptec Home wallbox aimed at the single-user market was launched in 2019. Zaptec was listed on the Norwegian growth exchange in 2020 and has just moved to the Oslo Stock Exchange's main list. Zaptec Go was launched in March 2021, replacing Zaptec Home as Zaptec's offering for the single-user market. Zaptec Pro has been re-engineered several times over the years to include new technology, streamline production and reduce costs. Both Zaptec Go and Zaptec Pro have been adopted to local laws and regulations in several countries, most recently Germany and the UK with the adoption of local regulations in France expected shortly. The next wave of expansions is likely to be Benelux, Italy, Austria, and the USA.

Zaptec Go was named the best charger in NAFs (the Norwegian Automobile Federation) test of 10 wallboxes in April 2022. The test among others included chargers from Wallbox, Charge Amps, Easee, Garo and Tesla.

*"It is Zaptec Go that runs away with the victory in our comparison of electric car chargers. This charging station meets all safety requirements. In addition, it has smart functions and a good design, at a nice price.*

*On the safety front, Zaptec is the only supplier that has shown us that all requirements for DC monitoring are met, including strong enough disconnection of any fault current. This makes Zaptec Go the test's safest choice."*<sup>2</sup>

Unfortunately, there is no public test of the Zaptec Pro charger, but our research indicates that Zaptec Pro is a very competitive product. In addition to very high safety and compliance standards, smart capabilities, easy and cheap installation, and a good design, Zaptec Pro's phase balancing technology is among the very best at efficiently using the electricity that is available in the grid. Basically, all chargers have versions of load balancing which makes sure the chargers only use the electricity that is available by reducing the charging speed. Zaptec's phase balancing technology is among the very best at using whatever level of electricity that is available to charge at the fastest possible speed by intelligently balancing the phases among all connected chargers. When we talk with competitors most claim they have similar capabilities but when we dig deeper it becomes clear they most often do not.

A large part of Zaptec's investments in research and development is spent on software which can be divided into embedded software that is included in the hardware and value-added services. The current revenue generated from value-added services is insignificant

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<sup>2</sup> <https://nye.naf.no/elbil/lading/test-av-ladeboks>

and we do not have any strong opinions on what level of success Zaptec will achieve on value-added software sales, so we expect very little. However, having software that takes advantage of all the capabilities of the hardware is important to be competitive.

### **Abrupt change of CEO**

The former CEO abruptly left his position on the 28<sup>th</sup> of February 2022 with no successor in place. The former CEO had sold almost 1,1 million shares in Zaptec, equivalent to 37% of his stocks and options, on the 28<sup>th</sup> of January 2022 when Zaptec announced very strong Q4 financial results. According to the registry of owners the former CEO has since sold most or all his remaining shares. This obviously begs the question, are the former CEO's actions driven by his assessment of the future value of the company? If he had any plans to leave the company in February and sell all his shares, it makes no sense to sell some shares in January when the sale must be publicly announced when he could have quietly sold all his shares with minimal market impact after leaving the company in February. This combined with the lack of a permanent successor at the time of the announcement indicates something abrupt happened in February that initiated the change of CEO. We see no indications that the change is linked to the fundamental, long-term value of Zaptec. We would have been more worried if our research on Zaptec had not been as deep, extensive and conclusive as it is. We also did expect some sales from insiders because their lockup period had just expired, and several had become financially independent because of Zaptec's success. The CFO and CTO sold some shares but to a much lesser extent and the new CEO has since bought shares in the market and exercised options without selling shares to finance the acquisition cost. We would love to see more insiders buying shares, but they are already heavily exposed to Zaptec through options and shares acquired before the listing.

### **Current management**

After a 1,5-month long search process, Peter Bardenfleth-Hansen was appointed CEO of Zaptec on the 12<sup>th</sup> of April 2022. Peter knew Zaptec very well as he came from a position as a member of the board of Zaptec and has spent 10 years building out Tesla's presence in Europe. Peter's competencies and prior experiences fit perfectly with Zaptec's current expansion in Europe. We have a good impression of Peter from our interactions with him. Peter is accompanied by CFO Kurt Østrem who has been with Zaptec since 2014 and CTO Knut Braut who has been with Zaptec since 2016.

We have followed Zaptec and the management team closely since the IPO of Zaptec in October 2020 and we think they make a very good team. The business results speak for themselves, but they have also proven honest over time. Our main criticism is that their communication with the public has at times been a bit messy, but they have improved, which is great to see. Despite the good early impression and near-perfect credentials of Peter we think it is too early to definitely conclude. Peter has significantly increased the growth investments since becoming CEO in April, aggressively hiring and expanding the cost base. The economic and financial conditions have changed dramatically since Peter became CEO and we think and hope Zaptec will be able to adjust the strategy accordingly. How Peter handles this change in external conditions combined with the actual returns of his increased growth investments is what can move our assessment from promising with great credentials to proven great.

To be clear we think it is prudent to invest massively in the geographical expansion into Germany, the UK, and France (and beyond) as these three markets represent a long-term market opportunity that is 6 times larger than the long-term market opportunity of Norway, Sweden, Denmark and Switzerland combined where Zaptec is currently well established. We just argue it is also very valuable to be profitable and have a strong balance sheet, especially in the current financial environment.

## Financials

Zaptec's growth is almost exclusively organic and they have managed to stay profitable while expanding their international sales from zero to 66% today. In the short term, profitability is heavily impacted by the level of growth investments as the vast majority is expensed at once while the income comes down the road. A good way to gauge the underlying profitability is to look at the gross margin which has been stable on a yearly basis but with significant variance from quarter to quarter. Historically, the majority of sales has been generated by Zaptec Pro which has a higher gross margin than Zaptec Go. The gross margin was temporarily impacted by the phasing out of the old Zaptec Home charger in H1 2021 and positively impacted by redesigns of the Zaptec Pro that reduced production costs in H2 2021. The efficiency gains was then partly passed on to customers in H1 2022. The inflation surge has increased production costs negatively impacted the gross margin in H2 2022 which Zaptec plans to address by raising prices in H1 2023.

Income statement (MNOK)	NGAAP				IFRS		IFRS
	2018	2019	2020	2021	2021	TTM	In 5 years
Net sales	100	156	220	489	489	703	4.500
Gross profit	44	67	83	215	215	311	1.710
EBITDA (Adjusted)	19	23	30	87	N/A	N/A	N/A
EBITDA	19	23	17	39	75	72	675
EBIT	15	16	12	23	62	52	585
<i>Growth rate, Sales</i>	<i>N/A</i>	<i>56,5%</i>	<i>40,4%</i>	<i>122,5%</i>	<i>122,5%</i>	<i>87,3%</i>	<i>45,0%</i>
<i>Export ratio</i>	<i>N/A</i>	<i>9,3%</i>	<i>28,3%</i>	<i>50,9%</i>	<i>50,9%</i>	<i>65,7%</i>	<i>95,0%</i>
<i>Gross-margin</i>	<i>44,0%</i>	<i>43,0%</i>	<i>37,6%</i>	<i>44,0%</i>	<i>44,0%</i>	<i>44,3%</i>	<i>38,0%</i>
<i>EBITDA-margin (adjusted)</i>	<i>19,0%</i>	<i>15,0%</i>	<i>13,6%</i>	<i>17,8%</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
<i>EBITDA-margin</i>	<i>19,0%</i>	<i>15,0%</i>	<i>7,7%</i>	<i>8,0%</i>	<i>15,4%</i>	<i>10,2%</i>	<i>15,0%</i>
<i>EBIT-margin</i>	<i>15,0%</i>	<i>10,4%</i>	<i>5,5%</i>	<i>4,7%</i>	<i>12,8%</i>	<i>7,4%</i>	<i>13,0%</i>

Zaptec acquired their local distributor NovaVolt in Switzerland in July 2021. The acquisition has been a huge success and has positively impacted the gross margin. Since the acquisition, Zaptec has amortized almost 5 MNOK of goodwill each quarter. This amortization is not representative of the true underlying earnings if anything the goodwill of the NovaVolt has gone up since the acquisition. In effect, this means Zaptec's reported earnings have understated the true underlying earnings by 5MNOK per quarter since the acquisition. Share-based compensation is a real cost, but the historical accounting of Zaptec's share-based cost has also been significantly higher than what we consider the true underlying cost. Taken together this means Zaptec's reported earnings have understated the true earnings by a wide margin since the IPO in 2020. As part of Zaptec's process to enter the

Oslo Stock Exchange main list, Zaptec has changed from Norwegian Generally Accepted Accounting Principles (NGAAP) to International Financial Report Standards (IFRS) that basically, all listed companies follow in most countries with the very notable exception of the US. IFRS better captures the true underlying earnings both when it comes to the amortization of goodwill and expensing of share-based compensation. The difference between historical reported EBIT and true underlying earnings as measured by IFRS is very significant and can be seen in the table below. Going forward reported earnings are likely to no longer significantly understate true underlying earnings.

The range of likely outcomes is very wide so any estimate for future growth and earnings is likely to be wrong. We think Zaptec has all the prerequisites to succeed but we cannot say with certainty that they will. With that disclaimer, we have tried to give our best estimate of what a moderately successful scenario for Zaptec would be in 5 years. This scenario implies Zaptec would trade at an EV/EBIT of 2,4 in 5 years, not including any benefit from the earnings in between.

The new accounting standard does not capture the impact of the current growth investments, but we have tried to estimate the impact by looking at the performance of the core countries where Zaptec is well established. Denmark should be included as a core country alongside Norway, Sweden, and Switzerland, but we do not have sufficient data to make that calculation yet. The table below shows our best estimate using the currently available data.

	Norway	Sweden	Switzerland	Core countries	Growth countries
Revenue TTM	236,1	126,8	198,6	561,6	141,1
EBITDA TTM	59,0*	18,7	61,3	139*	-67,3
EBITDA-margin TTM	25%*	15%	31%	25%*	-48%
Growth, YoY	13%	125%**	140%**	~64%**	~331%**

\*: The EBITDA-margin in Norway is estimated, under the assumption of 25% EBITDA-margin.

\*\* : The Growth is calculated using the first 9 months of 2022 compared with same time in the prior year.

Judged by this calculation Zaptec's core business is trading at an enterprise value to TTM EBITDA of 10 with a growth rate of roughly 64%. This is equivalent to an enterprise value to TTM EBIT of 11,3. If we look at the performance in individual countries compared with the market growth it reveals Zaptec is gaining significant market share in Sweden, Denmark, and Switzerland. The market share gains indicate that Zaptec is in a strong competitive position and can outgrow the underlying market growth potential.

Zaptec has a strong financial balance sheet with a large net cash position. We expect Zaptec along with all the competitors will see a significant buildup of inventory as the constraints in the supply chain continue to ease. In moderate amounts, this would be a good thing, as Zaptec (and others) has struggled to keep up with demand, but there is a significant risk the buildup of inventory will be much larger than desired as large long-term (up to 12 months) orders for components have been placed in an attempt to secure supply while short-term demand from customers has cooled significantly along with the general economic downturn. This is part of the reason why we think it is important to strike the right balance between growth investments and short-term profitability.

## Peer analysis

When comparing Zaptec with all relevant listed peers and the unlisted Norwegian competitor Easee we can see Zaptec significantly outperforms the average competitors with higher organic growth and much better margins. Interestingly Zaptec's gross margin is 10 percentage points (pp) better than the average while the EBITDA margin is 25 pp better. This implies the competitors, are in general, making significantly larger growth investments relative to Zaptec but with much lower efficiency as Zaptec still significantly outgrows the average competitor. We argue the average competitor will have to reduce their growth investments to improve profitability before their financing options run out. We expect this will have a significant positive impact on Zaptec's business environment in the medium term. Zaptec trades in line with the peer group measured on enterprise value to TTM EBITDA and with a significant discount on enterprise value to TTM sales. Note that we have chosen to look at EBITDA because it significantly improved the availability of data, but we think depreciations and amortizations are real costs and if data were available, we would use EBIT.

	MCAP (MNOK)	NIBD (MNOK)	Enterprise value (MNOK)	Organic revenue growth TTM	Gross-margin TTM	EBITDA- margin TTM	Enterprise value / Sales TTM	Enterprise value / EBITDA TTM
ABB	568.370	40.580	608.950	2,2%*	32,4%	20,4%	2,1	10,4
Alfen	19.142	-298	18.844	79,0%	35,0%	20,0%	4,5	22,4
Chargepoint	28.775	-3.919	24.856	93,4%*	17,8%	-79,4%	6,4	Neg.
Compleo	N/A	N/A	N/A	~0-20%*	17,3%	-30,0%	N/A	N/A
CTEK	1.714	557	2.271	7,3%	50,0%	13,9%	2,6	18,4
Easee	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garo	5.035	7	5.042	15,2%	48,3%	16,7%	3,8	22,7
Pod Point	1.068	-928	140	60,4%	25,8%	-10,9%	0,2	Neg.
Wallbox	5.225	-534	4.691	144,8%	40,7%	-75,9%	3,3	Neg.
Zaptec	1.582	-194	1.388	87,3%	44,3%	10,2%	2,0	19,3
<i>Average</i>				<i>51,5%</i>	<i>33,4%</i>	<i>-15,6%</i>	<i>3,2</i>	<i>18,5</i>
<i>Median</i>				<i>37,8%</i>	<i>33,7%</i>	<i>1,5%</i>	<i>3,3</i>	<i>20,4</i>

\*ABB growth is including M&A, Chargepoint growth is including M&A, Compleo's organic revenue growth TTM is our best guesstimate

We've only seen Zaptec compared with peers as shown above and rarely with any focus on the differences in growth rates or margins. However, this is like comparing apples with oranges because many of the competitors have other business areas that are not related to EV chargers.

	MCAP (MNOK)	NIBD (MNOK)	Enterprise value (MNOK)	EV Charging share of total sales	EV Charging revenue TTM (MNOK)	Export ratio Q3 2022	Valuation other business areas (MNOK)	Enterprise value of EV Charging business (MNOK)
ABB	568.370	40.580	608.950	1%	3.183	N/A	N/A	N/A
Alfen	19.142	-298	18.844	58%	2.437	72%	7318*	11.526
Chargepoint	28.775	-3.919	24.856	76%	2.956	19%	6904*	17.953
Compleo	N/A	N/A	N/A	100%	1.048	N/A	N/A	N/A
CTEK	1.714	557	2.271	19%	169	N/A	1852*	419
Easee	N/A	N/A	N/A	100%	1.385	N/A	N/A	N/A
Garo	5.035	7	5.042	34%	446	22%	2220*	2.822
Pod Point	1.068	-928	140	97%	908	0%	0	140
Wallbox	5.225	-534	4.691	100%	1.442	N/A	0	4.691
Zaptec	1.582	-194	1.388	100%	703	70%	0	1.388

\*The valuation is our best estimate based on growth rates, EBIT-margin and capital requirements. Easee's numbers are 2021, not TTM.

To compare apples with apples we must look at only the EV charger part of the business of the competitors. This puts a few extra limitations on the available data and requires an

estimation of the value of the non-charger business areas if we are to compare the business on enterprise value to sales or EBITDA.

When comparing apples with apples Zaptec's advantage in margin is increased further while the advantage in organic growth is reduced. Measured both on enterprise value to revenue and EBITDA Zaptec trades at a huge discount of 50% to the average competitor. We argue Zaptec's business is of much higher quality than the average competitor and that Zaptec should trade at a premium to the average competitor.

	Organic revenue growth 2021	Organic revenue growth TTM	Gross-margin 2021	Gross-margin TTM	EBITDA-margin 2021	EBITDA-margin TTM	Enterprise value / Sales TTM	Enterprise value / EBITDA TTM
ABB	55,3%*	N/A	29,1%	N/A	1,5%	N/A	N/A	N/A
Alfen	93,8%	177,0%	N/A	N/A	N/A	N/A	4,7	N/A
Chargepoint	89,2%*	109%*	15,3%	11,4%	Neg.	Neg.	6,1	Neg.
Compleo	1,9%	~0-20%*	13,7%	17,3%	-25,0%	-30,0%	N/A	N/A
CTEK	76,0%	36,6%	N/A	N/A	-16,1%	-16,6%	2,5	Neg.
Easee	267,6%	N/A	53,0%	N/A	37,1%	N/A	N/A	N/A
Garo	51,5%	18,4%	N/A	N/A	21,5%	15,3%	6,3	41,4
Pod Point	85,6%	60,4%	26,6%	25,8%	-13,2%	-10,9%	0,2	Neg.
Wallbox	263,8%	144,8%	38,2%	40,7%	-63,0%	-75,9%	3,3	Neg.
Zaptec	111,4%	87,3%	44,0%	44,3%	15,4%	10,2%	2,0	19,3
Average	109,4%	79,5%	29,3%	23,8%	-8,2%	-23,6%	3,8	41,4
Median	85,6%	60,4%	27,9%	21,5%	-13,2%	-16,6%	4,0	41,4

\*ABB growth is including M&A, Chargepoint growth is including M&A, Compleo's organic revenue growth TTM is our best guesstimate

## Description of peers

**ABB E-mobility** offers hardware and software products for both AC/DC for single- and multi-user purposes. Their revenue is among the largest in the EV charging sector and they are operating with a rather low gross-margin of 22,5-30% in 2020-2021 and with a negative to breakeven level EBITDA. ABB planned an IPO of the E-mobility segment as a spin-off for Q2 2022 with a funding need of approx. 750 MUSD (7.400 MNOK) to fund organic growth, in-house production, and future M&A plans. The IPO was postponed in June 2022 without a new timetable due to "challenging market conditions".

**Alfen** is among the largest EV charging companies in Europe measured in revenues and offers hardware and software AC chargers for single- and multi-user purposes. Growing outside one's home market can be challenging, but Alfen's expansion strategy across Europe has worked well so far. This has allowed Alfen to grow significantly in 2022 and they have done so with increasing EBITDA margins. Alfen has two other business areas and a strong balance sheet with net cash.

**Chargepoint** offers hardware and software AC/DC single- and multiuser chargers. They also offer subscription services to access their own- and third-party charging networks. Their main operations are in the US and their growth has been good, but they have done so while having very low gross margins and negative EBITDA. Their gross margins were around 20%, but only 5-15% for the hardware part of their business. This is very low compared to peers and makes it much harder to become profitable. Chargepoint has high levels of net cash and is priced among the highest in the sector based on Enterprise Value / Sales.

**Compleo** offers hardware and software AC/DC single- and multi-user chargers and has some of the worst key financial numbers in the peer analysis with low organic growth, low gross

margins, and a negative EBITDA. On top of burning cash operationally, Compleo is producing in-house, giving them large cash requirements for production assets and net working capital while also acquiring several companies. On the 20<sup>th</sup> of December 2022 Compleo initiated an orderly insolvency proceeding.

**CTEK** has three operating units. Two of which (*Aftermarket* and *OE*) is based on their legacy business with low voltage chargers (1979) while the third (*E&F*) offers EV AC single- and multiuser chargers. The low voltage segment is highly profitable but operates in a mature market with low single-digit growth. Low-voltage products are used for regular-, maintenance- and portable charging of low-voltage applications like lawnmowers, motorbikes, and jet skis. The EV AC single- and multiuser charger segment was added through the acquisition of Chargestore in 2018 with an EBITDA-margin of 13,6% at that time. The EBITDA margin has declined and been negative since 2020 while the growth has been mediocre. CTEK has large net debt of 5 x EBITDA which could become a problem.

**Easee** was founded by three former Zaptec employees in 2018 and originally focused on the market for AC single-user chargers while Zaptec at that time was focused on the AC multiuser charger. Easee has been hugely successful with extremely high growth and industry-leading margins. Zaptec has arguably caught up with Easee on the AC single-user charger, but Easee has likewise expanded into AC multiuser chargers with an arguably very competitive charger. Easee is partly a history of lost opportunity for Zaptec, and partly an example of the business potential when product fit, marketing ability, and market opportunity aligns.

**Garo** is a well-known brand within electrical distribution products and electrification components in Sweden with its own production facilities. This has been a great asset for Garo in setting up their single- and multi-user AC offering in Sweden, which they have done with good profitability. Garo has previously had trouble growing outside of Sweden, an important test for the competitiveness of the products, value add, and go-to-market strategy. In 2022 Garo has for the first time had success growing substantially outside of Sweden, albeit from a low starting level. Garo has no net debt and is one of the most expensive EV charging companies trading at Enterprise value / Sales of 6,3.

**Pod Point** offers single- and multiuser AC chargers alongside third-party DC chargers coupled with their own software. Their growth has been respectable, but their gross margins are low with negative EBITDA. Pod Point used to have significant sales in Norway, primarily to Renault, but they have been losing market share to the point where they decided to exit Norway entirely. This is a poor sign of their competitiveness and with Zaptec among others about to enter Pod Points UK home market they may struggle.

**Wallbox** offers hardware and software AC/DC single- and multiuser chargers. Wallbox has had very high growth rates partly driven by very aggressive investments and spending. Their gross margin is healthy at around 40%, but their EBITDA losses are huge. Wallbox is currently burning a lot of cash to gain market share and it remains to be seen if and when they can turn profitable and how much their growth rates will be affected. Wallbox may need additional financing, which can be difficult to get in today's financial environment.

## **Conclusion**

To summarize, we think:

The range of likely outcomes for any specific company is very large because the industry is very young. This includes deviations to the upside as well as the downside.

The long-term competition is going to be intense, but the consensus is currently too negative. The consumer's price sensitivity is reduced by other costs such as installation, groundwork, and grid connection costs. The need for professional installation makes the distribution fragmented and more difficult to enter for new players. We also think the technology is (slightly) more advanced than most people think.

The short-term outlook has deteriorated with reduced market growth, increased capital requirement for inventory, and much worse access to financing. Many companies will struggle and some will fail. However, this is a net positive in the medium to long term for the profitable companies with strong financial balance sheets.

The long-term growth outlook for the industry is very favorable.

Zaptec has significantly increased growth investments under the new CEO which makes a lot of sense in the context that Zaptec's chargers are finally fully adopted to the UK and German markets with France following shortly. However, the deteriorating economic and financial conditions make the market look less favorable on the increased growth investments and increase the associated risks.

The abrupt change of CEO looks messy, but we see no signs that it should be an indication of underlying business problems. The new CEO has near-perfect credentials and we like the management team.

Zaptec's reported historical earnings have significantly understated the true earnings. Following the change in accounting standards reported earnings will more accurately state the true earnings in the future.

Zaptec has a strong track record of successful international expansion.

Zaptec has some of the best financials in the industry including a strong balance sheet.

Zaptec has some of the best products in the industry and gains significant market share.

Zaptec trade at a huge discount of 50% to the average competitors and should in our opinion trade at a premium.