

NINGI RESEARCH

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List of abbreviations

SEV	Sono Group N.V.
Sono Motors	a subsidiary of Sono Group N.V.
Sion	the car being developed by Sono Group N.V.
Kraftfahrtbundesamt (KBA)	german federal agency for transportation
Vehicle-2-Vehicle	charging between two electric vehicles
Vehicle-2-Home	feeding surplus energy into a house
Vehicle-2-Grid	feeding surplus energy into the grid
NEVS	National Electric Vehicle Sweden AB

List of references

All citations, references and sources are publicly available. Annual reports and other official documents were obtained through the respective issuer's website, through regulatory filings and commercial registries. Documents are cited as follow:

< company name >, < document title >, < year of publication >, < page >, (for online source) < url >

Some SEC filings were retrieved through direct URLs within the EDGAR system and those filings are quoted directly. As annual reports sometimes have the same ubiquities title, we have added the year for better distinction.

List of figures

If not stated otherwise all figures are obtained through the quoted references in the footnotes and can be found in the respective source.

Translations

All translations were done by our team or are based on Google Translate and DeepL.

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Executive Summary

We are short Sono Group N.V. (Ticker: SEV) because we think that the company did not disclose material information regarding target groups, does not have a viable product up to now, customers cancelations are accelerating, any further funding is unlikely and there is a severe misalignment of interests between management and shareholders.

Already several hundreds of million Euros have been invested and to this day only a handful prototypes have seen the daylight.

Sono Group N.V.	
Ticker:	SEV
Market Cap:	\$395m
Share Price:	\$5.47
Consensus	\$22.00

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In our opinion,

- the company has **failed to disclose the target group structures** for its car prior to its IPO and thus failed to identify risks in the marketing of the product
- the company is thereby **developing a niche product** based on wrong target group surveys
- the Sono Group has been **promoting** its product to customers and investors for years with **unrealistic comparisons, promises, and statements**
- the **cancelations** of the reservation holder **have been increasing** for several months because **there are now adequate substitutes** for the main product.
- Sono Motors **pays for reservation holders to drive the car of a direct competitor** so that these customers do not cancel their down payment
- **priorities are set wrongly** by hiring marketing employees and instead of tackling operational problems
- **financing is very unlikely** in the near term future
- management **is driven by a false idealism** and this leads to a classic principal-agent problem.

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Sono Group N.V.

Company overview and its business model

Sono Group N.V. (Ticker: SEV) is an EV company based in Munich, Germany. Its flagship product is a solar-powered electric vehicle, which is currently in development. SEV was founded as Sono Motors GmbH in 2016 by three students: Laurin Hahn, Jona Christians, and Navina Pernsteiner. The first proof of concept was financed by the crowdfunding campaign and in late 2018 the production start was announced for late 2019. Since then the company did several crowd founding campaigns due to the lack of venture capital interest and investments. In the end, Sono Motors was listed on the NASDAQ in November 2021 with its initial price at \$15.00. The capital raised will be used for further development of the car and production validation.

The company sees itself as a pioneer and technological leader in the field of solar-powered electric vehicles and calls the technology disruptive. The primary proprietary technology SEV owns is a patent to a polymer body part in which solar panels will be integrated.¹ Solar panels e.g. on a roof are usually coated with glass but due to the design features of a modern car, those glass solar panel structures would be too complex, expensive, and dangerous. The concept of integrating solar panels in a car is not new and has been shown by several manufacturers. It was mainly done as a marketing feature and to show what the manufacturer was capable of. The solar panels powered on-board electronics for example.

But SEV lifts the idea to new spheres as the car should be powered by the sun as well as an electric battery.

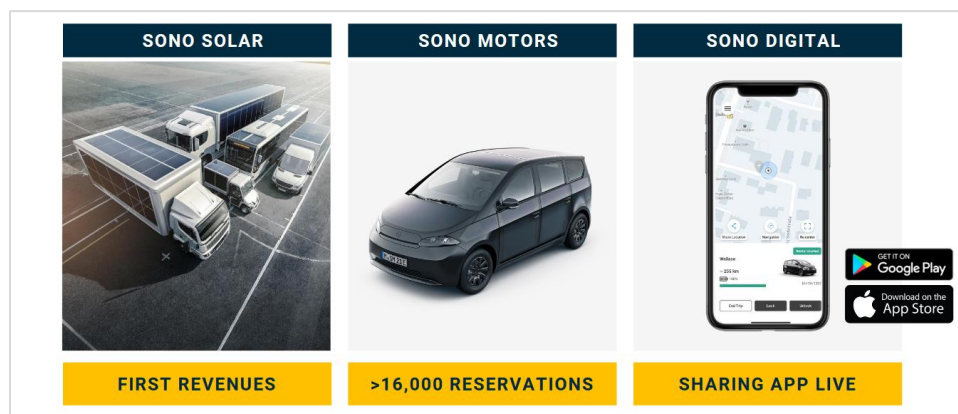


Figure 1 three segments of Sono Group N.V.

These technologies should be the key element for its business model. First SEV wants to license its technology to other OEMs for integration within their motor vehicle. Second, the Munich-based company wants to use the funds from its license agreements to finance the development and manufacturing of its car. Lastly, the company will develop a non-for-profit car-sharing app for the Sion.²

In our report, we will focus on the problems around the Sion car and its consequences for Sono Group.

¹ <https://patents.google.com/patent/EP3532365B1/en?inventor=Laurin+Hahn&assignee=Sono+Motors+GmbH>

² <https://youtu.be/A2pxPIpuHCY>

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The Sion odyssey

The price tag isn't the only wrong estimate

The Sion is SEV's heart and soul. It's been in development since 2016 and several prototypes have been built. Its earliest drivable version was revealed in 2017. Current lab tests and estimates expect a range of 417 km or about 260 miles at a price of \$34,000.³ In the past, Sono announced a price tag of \$17,500 for the car excluding the battery and \$24,000 including the battery.⁴ This has been revised upwards and nowadays only the battery-included version is available for reservation.⁵

Whether the price of €28,500 can be maintained until the start of production is questionable in our opinion, as all major car manufacturers are raising the prices of their products due to supply chain and inflationary pressure.^{6 7}



The Sion

Down Payment From €500	Purchase Price €28,500
Right of Cancellation 2 Weeks	Delivery EU
Purchase Contract 2022	Start of Production 2023

[Preorder Your Sion](#)

Image of the SEV Sion car with license plate M-SM 21E.

Figure 2 SEV's main product: the Sion

The exact list of features is not yet clear, but SEV has asked its customers in several Google Surveys which features they would like to see. Unfortunately, it is not known which options will then be included in the vehicle.

³ <https://sonomotors.com/en/sion/>

⁴ <https://www.indiegogo.com/projects/sion-a-solarcar-for-everyone>

⁵ <https://sonomotors.com/en/preorder/>

⁶ <https://www.theverge.com/2022/3/15/22978817/tesla-ev-price-increase-raw-materials-inflation>

⁷ <https://www.bloomberg.com/news/articles/2022-03-15/electric-vehicles-will-be-pulled-in-different-directions-by-war>

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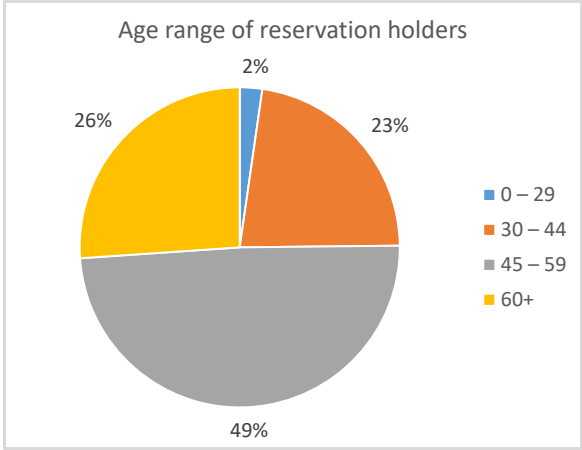


Figure 3 age range based on 6,306 votes in January 2021

Much more interesting about these surveys are the insights into the future customer group itself. **It turns out that 75.0% of reservations come from customers over the age of 44** and 25.0% of all customers are even over 60. Just 2.0% of reservations were made by people under the age of 29. **Despite that the marketing is focused on young families and urbanites.**⁸ This shows that the mass market and target groups like young families won't be attracted by the car and its features at all. The focus is clearly on a target group with a decreasing market share.

The brand preference of reservation holders is characterized by a high degree of heterogeneity. The vehicles currently being driven include more than 35 brands such as Volkswagen, Nissan, Toyota, BMW, Mercedes, and Tesla. A strikingly large number of vehicles come from brands that are sold exclusively in Europe: Renault, Opel, or Skoda.

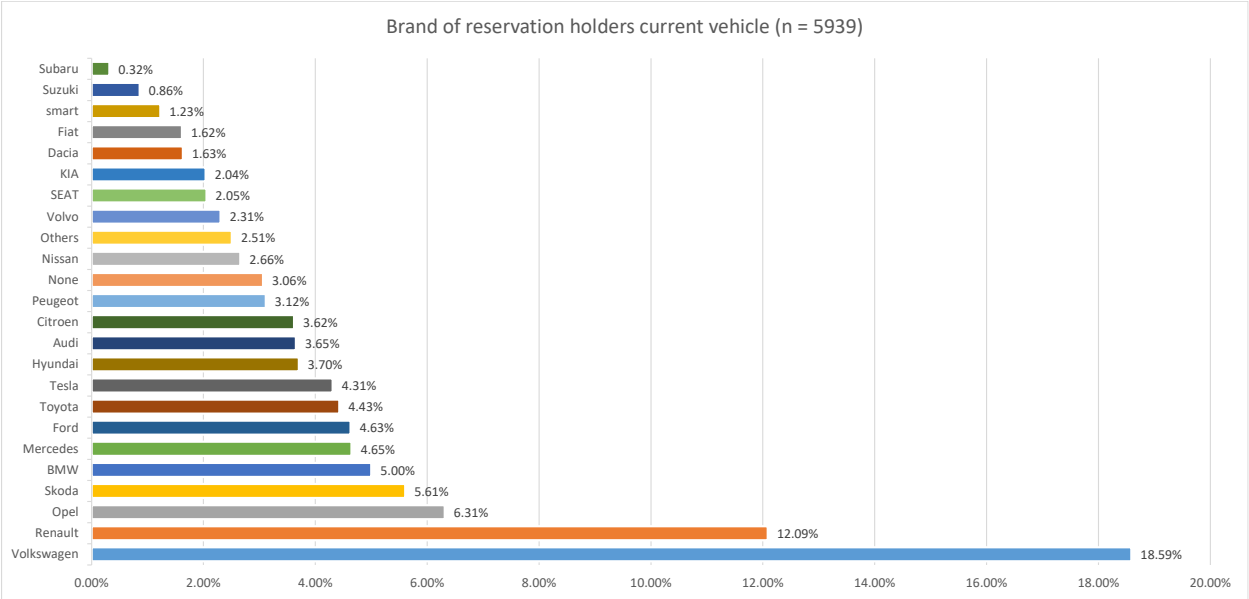


Figure 4 different brands driven by reservation holders based on 5,939 votes in January 2021⁹

⁸ <https://sonomotors.com/en/sion/>

⁹ Actually there were 6278 votes, but unfortunately we could not assign a part of the pie chart to the respective brand. We have then removed these votes from our analysis.

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All this information was unfortunately not published in the IPO prospectus but was hard to find on SEV's website.¹⁰ Other customer data is published by executive management on Twitter instead of disclosing it in the S-8 filing.¹¹ It turns out that a large proportion of Sono Motors' customers are located in Germany, Austria, Switzerland, and the Netherlands.



Figure 5 tweet by co-founder and Sono CEO Laurin Hahn

In our opinion, this information, which was already known to the company before the IPO, is highly important for an investor and a reasonable investor would want to know this information before making an investment in SEV. Especially since Sono Motors had neither sales nor a finished product at the time of the IPO. The proceeds from the IPO were to be used for further development and production of their main product, the Sion. We even believe that this information is "material".¹²

Likewise, since an evaluation of the competitive environment, opportunities, and risks - e.g. by Porter's Five Forces - is part of an investment analysis, this information has a strong influence on an investment in the company. We think the company failed to present this information and insight to investors in advance of the IPO.

In our opinion, this makes it clear that SEV is developing a car that will not be marketable to different target demographics, nor globally, nor even across Europe. However, in addition to not meeting market needs, the survey also shows - we believe - how quickly the Sion can be substituted.

¹⁰ <https://sonomotors.com/en/downloads/results-design-survey-january-2021-en/>

¹¹ <https://twitter.com/LaurinHahn/status/1433103741561999367>

¹² <https://www.cfainstitute.org/en/ethics-standards/codes/standards-of-practice-guidance/standards-of-practice-II-A#material>

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How did all these EVs suddenly appear?

First off: a third of all reservation holders drive either a Volkswagen or a Renault (a French manufacturer with no distribution network in the United States). In our opinion the high proportion of Renault is mainly influenced by a 2020 lease program Sono Motors offers to avoid cancellations. Reservation holders can offset the Renault lease payments with up to €4,000 of their advance payment for the Sion.¹³

While we finalize development and prepare the launch of production of the Sion, we offered selected customers who made an advance payment for the Sion to convert this advance payment into a lease contract for a Renault Zoe in 2020. This offer allowed consumers to already drive an electric car and positioned us to avoid cancellations and generate income from commissions we receive for every lease agreement entered

Figure 6 extract from the S-8 filing

Although this distorts the true proportion of Renault drivers, we have continued to leave this as the contractual ownership relationship does not affect the perceived substitutability of a Sion with a Renault electric vehicle.¹⁴

brand	votes	% of total votes	possible substitute
Volkswagen	1104	18.59%	ID 3 Pro
Renault	718	12.09%	Megane E
Opel	375	6.31%	Mokka E
Skoda	333	5.61%	Enyaq iV 50
BMW	297	5.00%	i3
Mercedes	276	4.65%	EQA 250
sum		52.25%	

Figure 7 brands driven that are represented by more than 50% of all reservation holders, source: Ningi Research

More than half of the cars currently driven by reservation holders are thus divided among six brands.¹⁵ **Most driven brands have caught up with SEV's potential lead in the time since Sono Motors was founded, and each Top 6 brand can offer a similar electric vehicle.** We compared the Sion to its competitors based on this and data sets from an electric vehicle database. The lowest-cost five-seat version within the database was always used to select the substitute.¹⁶


¹³ Sono Group N.V., S-8 filing, 2021, F-35.

¹⁴ We believe up to 600 Renault „votes“ are based on leased Renault Zoe cars paid by Sono Motors

¹⁵ <https://sonomotors.com/en/downloads/results-design-survey-january-2021-en/>

¹⁶ <https://ev-database.org/>


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	Sono Sion	Volkswagen ID3 Pro	Renault Megane E-Tech EV40
Price	28,500 €	35,460 €	35,200 €
Effective range in km	260	350	250
Efficiency in Wh/km	181	166	160
Battery usable in kw	47	58	40
Seats	5	5	5
Towing Weight Unbraked in kg	750	0	500
Availability	Pre-order	In production	Pre-Order
Other metrics			
Battery capacity in kw	54	62	40
Total power in kw	120	107	96
WLTP range in km	305	414	300
Top speed	140	160	150
Charge Time for 225km in hrs	5.25	6.25	6.5
Fastcharge Speed in km/h	310	490	360

Figure 8 comparison of possible substitutes, source: Ningi Research, ev-database.org

In comparison to the other products, the Sion stands out because the car offers features at a price that other manufacturers seem to be unable to match. Sono Motors wants to build a cheaper and more efficient car than Volkswagen, the world's second-largest car company. **We think this is unrealistic.** Also because there are only four prototypes of the Sion to date, which cost several million euros.




	Sono Sion	Opel Mokka-e	Skoda Enyaq iV 50
Price	28,500 €	34,110 €	34,600 €
Effective range in km	260	255	295
Efficiency in Wh/km	181	176	176
Battery usable in kw	47	45	52
Seats	5	5	5
Towing Weight Unbraked in kg	750	0	0
Availability	Pre-order	In production	In production
Other metrics			
Battery capacity in kw	54	50	55
Total power in kw	120	100	109
WLTP range in km	305	338	340
Top speed	140	150	160
Charge Time for 225km in hrs	5.25	7.25	8.5
Fastcharge Speed in km/h	310	410	240

Figure 9 comparison of possible substitutes, source: Ningi Research, ev-database.org

Even European low-cost brands such as Opel (equivalent to Chevy) or Skoda (Volkswagen's low-cost brand) can't seem to keep up in terms of price and features – although global automotive groups are backing them. According to SEV's estimates and product claims, the Sion can outperform any major car company.

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	Sono Sion	Mercedes EQA 250	BMW i3
Price	28,500 €	47,541 €	39,000 €
Effective range in km	260	355	235
Efficiency in Wh/km	181	187	161
Battery usable in kw	47	66.5	37.9
Seats	5	5	5
Towing Weight Unbraked in kg	750	750	0
Availability	Pre-order	In production	In production
Other metrics			
Battery capacity in kw	54	69.7	42.2
Total power in kw	120	140	125
WLTP range in km	305	426	308
Top speed	140	160	150
Charge Time for 225km in hrs	5.25	7.25	4.25
Fastcharge Speed in km/h	310	510	270

Figure 10 comparison of possible substitutes, source: Ningi Research, ev-database.org

We believe that SEV is stacking the deck far too high. The company has to justify itself to its customers if a feature is now deleted. **To date, no objective comparison with competitors by trade journalists has taken place.** In the course of the IPO, a PR campaign was also launched, in which influencers and YouTubers were allowed to test drive a prototype of the Sion on a closed-off area.^{17 18}

In our opinion, Sono Motors deliberately does not face a stand-off with other EVs by the trade press, as this would mean a damning verdict because all the Sion's data is based only on estimates, simulations, and lab tests. SEV has also admitted this in the prospectus.

152 miles. **However, these specifications indicate our current expectations and development targets with respect to the battery- and solar-based range of our vehicles until the series production of our vehicles and there is no guarantee that our vehicles will ultimately achieve these specifications,** which depend on the success of the development efforts of our battery supplier and/or us.

Figure 11 extract from the S-8 filing

Wishful thinking is practiced and this is not to be questioned. This is also shown by the distorted representation of the competitor's products.

¹⁷ <https://www.youtube.com/watch?v=U5LKU6bWSc>
¹⁸ <https://www.youtube.com/watch?v=39zhPGL7CfA>

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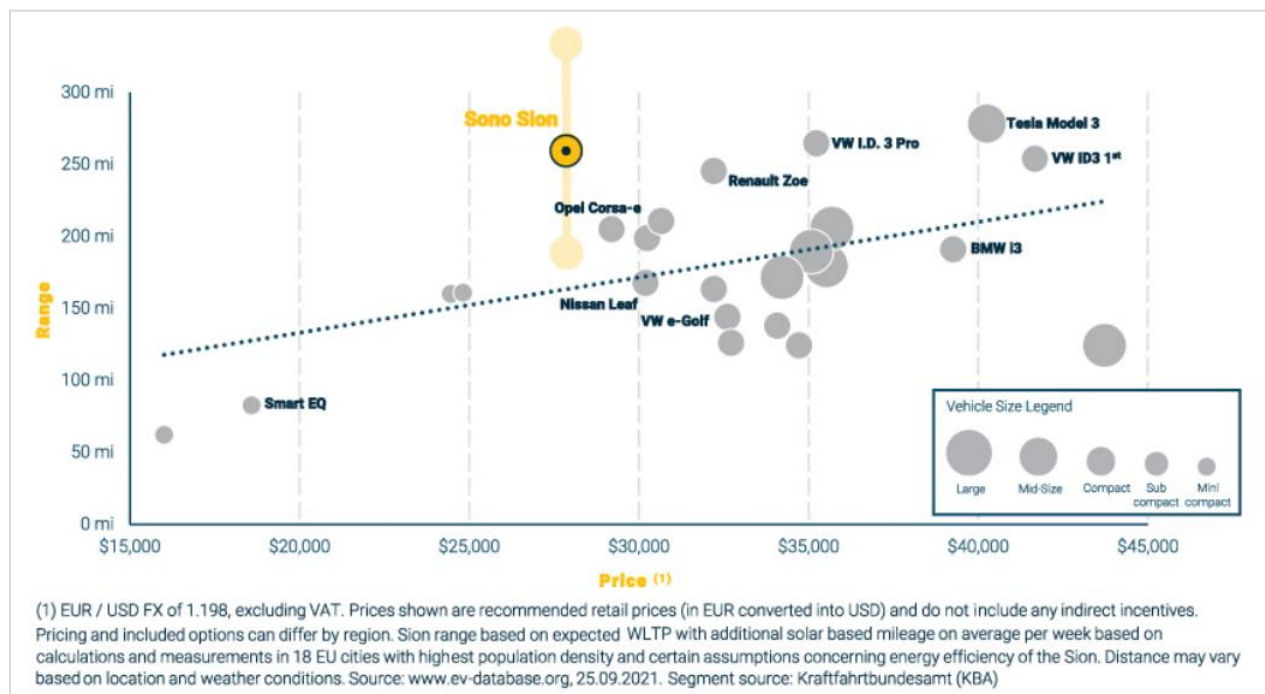


Figure 12 extract from the S-8 filing

On page 113 of the IPO prospectus, a comparison is made with other competitors and the Volkswagen ID3.Pro and Nissan Leaf vehicles are placed in the "compact" segment, with the Sion seemingly in the "mid-size" segment.¹⁹ However, the database sees all three of the aforementioned vehicles in the same segment called "c-medium."

Sono Motors has intentionally used the classification of the German regulatory body "Kraftfahrtbundesamt (KBA)", as their many substitutes fall into a lower segment, but even there SEV has partially distorted the comparison. The classification of the "Kraftfahrtbundesamt (KBA)" sees for example the Renault Zoe and the Volkswagen ID3.Pro in different segments, respectively "sub-compact car" and "compact car". The graphic undoubtedly presents this differently.²⁰

In our opinion, there is a clear attempt to present an overly positive bias of the Sion towards Tesla Motors and its Tesla Model 3. We believe that SEV's graphic suggests that the closest competitor for the Sion is a Tesla Model 3 - which offers a similar range, but at a much higher price.

Such a comparison is misleading as we see it. **We believe that Sono Motors wants to falsely position not only their product but also themselves as a stock company with this representation.** This should be seen because, before SEV's IPO, Tesla Motors' market value and the stock price had increased significantly. The fact that the Sono Motors company is trying to transfer various positive associations of Tesla Motors, whether related to the first-mover effect or stock market value, to itself is also shown by the marketing within the company's press kit and the Sion product brochure.

¹⁹ Sono Group N.V., S-8 filing, 2021, p. 113.

²⁰ https://www.kba.de/EN/Statistik_en/Fahrzeuge_Vehicles/vehicles_node.html

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The fairy tale of the Tesla competitor

As already described, Sono Motors seemingly likes to compare itself with Tesla. In addition to the competitive comparison, this is also reflected in the presentation of its product. The company wants to integrate bi-directional charging into its car and advertises this with a picture of the Sion charging a Tesla Model S in bi-directional charging.^{21 22} Of course, the picture does not show two Sion charging each other – but a Sion charging a Tesla Model S. The image is shown in Sono Motors' press kit. Despite photos of bi-directional charging of both Sions were even taken during the same photo shoot.²³

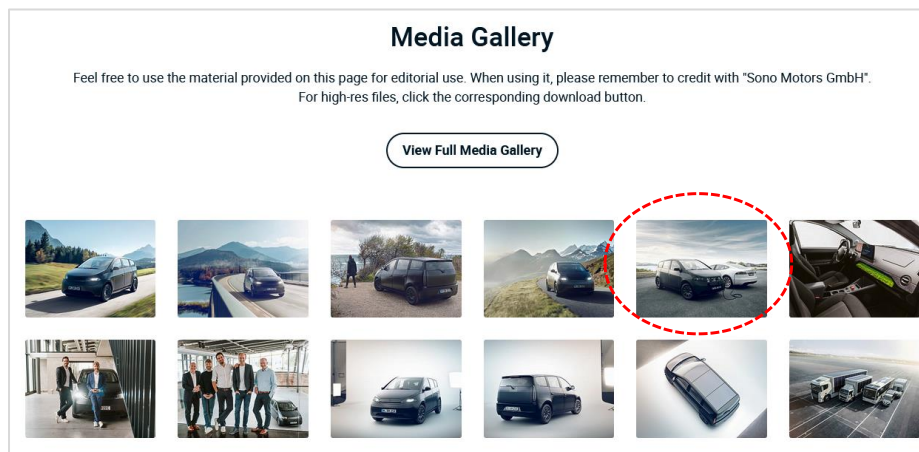


Figure 13 screenshot of Sono's media gallery

Likewise, founder and CEO Mr. Hahn promotes the car on social media with the same image.²⁴

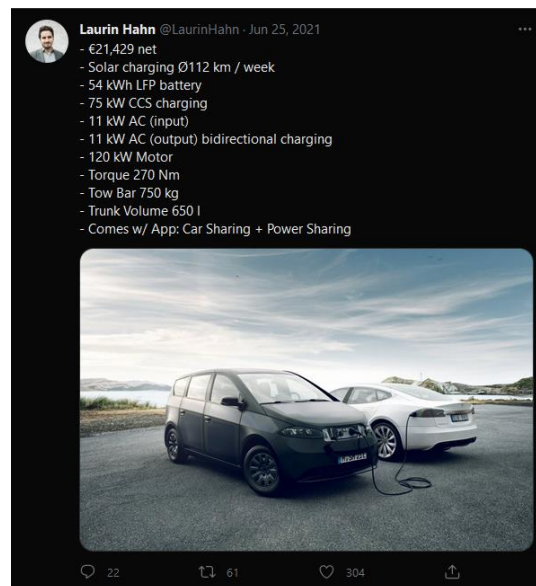


Figure 14 tweet by co-founder and Sono CEO Laurin Hahn

²¹ <https://sonomotors.com/en/downloads/information-sheet/>

²² <https://sonomotors.com/en/press/media-gallery/>

²³ <https://twitter.com/laurinhahn/status/1181930192681541632?lang=cs>

²⁴ <https://twitter.com/LaurinHahn/status/1433103741561999367>

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In our opinion, this comparison with Tesla leads to negative consequences, since the press, buyers, and potential customers will always compare the Sion with Tesla in the future. It's even worse because the function shown in the picture and advertised in documents is not even ready for production yet.

Despite the statement in the product brochure: "SERIES DISCHARGING CAPACITY up to 11kW AC with Type 2" is still not possible. In several videos, it was admitted that currently only uniphase 3.7 KW can be charged, i.e. equivalent to a standard socket.²⁵ To reach 11 KW, the discharge would have to be triphase.

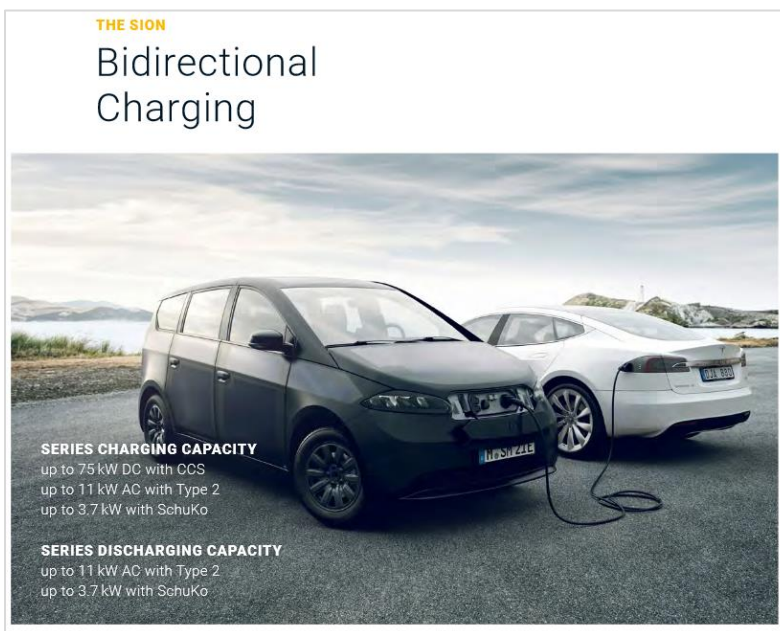


Figure 15 extract from the product brochure

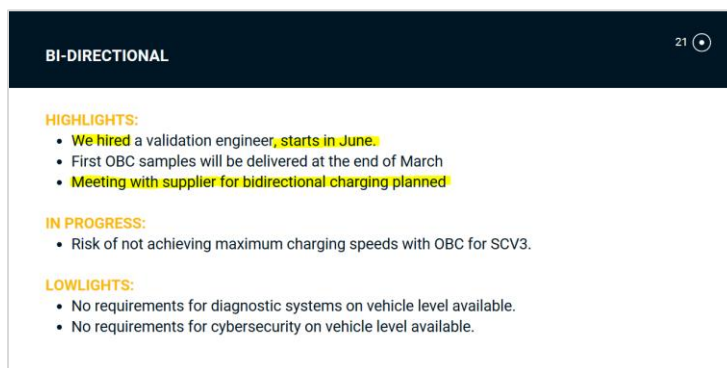


Figure 16 extract from a recent development presentation

The picture has already been in the product brochure since mid-2021 and many press representatives took this photo as a hook for positively coined articles. In our opinion, the public was deceived here. Especially since up to now there was not even an exchange with a supplier and an engineer for the validation only starts in June this year.²⁶ Almost three and a half years after this was first presented in a short video, the technology is not yet ready for series production.²⁷ Even though Sono Motors considers

²⁵ <https://www.youtube.com/watch?v=CkjAPPRUyUc>

²⁶ <https://sonomotors.com/en/downloads/development-sprint-review-cw-08-2022/>

²⁷ <https://twitter.com/LaurinHahn/status/1057591940445822976>

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itself at the forefront of this technology.²⁸ In addition, according to company information, only single-phase Vehicle-2-Vehicle discharging was possible and even the supervisory board member Sebastian Böttger, an expert in electrical engineering, did not sound convinced in January 2021:²⁹

[...] If the Sion can do 11kw, then I'll pay for it in full. That's what I said on the first test drive, if the Sion charges my car for 60 seconds with three-phase 11kw, then I pay in full. Until then I will stick to the lower deposit. [...]

In a current development presentation from Sono Motors, not reaching the desired charging speed is presented as a risk.³⁰ This risk should no longer exist if you believe the statements and promises of the company.³¹ **We doubt whether Vehicle-2-Vehicle will remain a feature in series production.**

A 2022 press release only talks about Vehicle-2-Home and Vehicle-2-Grid charging, but the product brochure and press materials continue to use the Sion-Tesla image.³²

We believe Sono is intentionally overstating the case with past and current announcements that it will soon become a massive problem for the company.

²⁸ Sono Group N.V., S-8 filing, 2021, p. 6.

²⁹ <https://youtu.be/JFTfffcZW3U?t=390>

³⁰ <https://sonomotors.com/en/downloads/development-sprint-review-cw-08-2022/>

³¹ <https://twitter.com/SonoMotors/status/1032236940735799296>

³² <https://sonomotors.com/en/press/press-releases/sono-motors-launches-bidirectional-wallbox/>

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How long can you put off customers?

To date, there are 16,700 reservations for the SION with an average down payment of 2,500 euros.^{33 34} The first reservations for the car were made in 2016.³⁵ At that time, some of these were full down payments of approximately €14,000. Many customers were promised the start of production and first deliveries in 2017, 2019, and again in 2020.^{36 37} Then the start of production was announced for September 2021 and the first deliveries for 2022.³⁸ But to date, SEV remains in the development and pre-validation phase. The current start of manufacturing and first deliveries are scheduled for mid-2023.³⁹ Customer frustration is evident to everyone from the repayments due to cancellations. **In 2020 alone, 36.0% of all reservation holders who had the right asked for their money back.**⁴⁰

	Balance as of Jan. 1, 2021	Additions	Repayment	Interest effect	Balance as of June 30, 2021
	kEUR	kEUR	kEUR	kEUR	kEUR
Advance payments received from customers	38,972	-1,403	-488	806	40,693
	38,972	1,403	-488	806	40,693
	Balance as of Jan. 1, 2020	Additions	Repayment	Interest effect	Balance as of Dec. 31, 2020
	kEUR	kEUR	kEUR	kEUR	kEUR
Advance payments received from customers	11,164	30,565	-4,116	1,360	38,972
	11,164	30,565	-4,116	1,360	38,972

Figure 17 extract from the S-8 filing

In our opinion, 31% of the down payments can be canceled since January 1, 2022.⁴¹ **We assume that almost 12 million euros in advance payments can be reclaimed at any time.**⁴²

later than November 25, 2020, cancellation is possible on July 1, 2023, or later. Deviating from these conditions, in November 2020, **Sono Group approached all German-speaking customers** that had made their latest installment during the Crowdfunding Campaign from December 1, 2019, until and including January 20, 2020, and asked them to accept a change in the terms and conditions **to waive their cancellation right until December 31, 2022.** In effect, those customers who accepted the change may cancel their advance payment on January 1, 2023, or later.

As of June 30, 2021, currently 11% are cancelable. **20% will be cancelable from January 1, 2022,** 64% will be cancelable from January 1, 2023, and 5% will be cancelable from July 1, 2023. The percentages calculated are based on the nominal values of the advance payments excluding IFRS adjustments (interest effect).

Figure 18 extract from the S-8 filing

The withdrawal of such liquidity would mean severe stress for the company. We believe that customer cancelations are accelerating because the average down payments have declined from \$3,550 to \$2,700

³³ <https://sonomotors.com/en/about-us/>
³⁴ https://www.sec.gov/Archives/edgar/data/0001840416/000117184322000607/exh_991.htm
³⁵ <https://www.indiegogo.com/projects/sion-a-solarcar-for-everyone#/>
³⁶ <https://www.indiegogo.com/projects/sion-a-solarcar-for-everyone#/>
³⁷ <https://twitter.com/sonomotors/status/1159043534613340160>
³⁸ <https://futurride.com/2020/12/29/sono-motors-to-show-latest-sion-prototype-at-ces-2021/>
³⁹ Sono Group N.V., S-8 filing, 2021, p. 23.
⁴⁰ Sono Group N.V., S-8 filing, 2021, F-11.
⁴¹ Sono Group N.V., S-8 filing, 2021, F-10.
⁴² €40,693 – €1,360 – €806 = €38,527 * 0.31 = €11,944

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within the last six months. If all new reservations would deposit only the minimum amount of €500 (equivalent to \$550), according to our calculations the average down payment should be \$3,020.

date	7/18/2021	9/1/2021	10/28/2021	11/9/2021	13/12/2021
# of reservations	13,000	14,000	15,000	16,000	16,700
% growth		7.69%	7.14%	6.67%	4.38%
avg. dollar amount	\$ 3,550	\$ 3,300	\$ 3,300	\$ 3,000	\$ 2,700
% growth		-7.04%	0.00%	-9.09%	-10.00%

Figure 19 average down payment in USD declined for months, source: Ningi Research

We believe this acceleration of cancellations has been rising for several years and will rise in the future. This is also clear to Sono Motors, which is why - as mentioned above - they initiated a leasing program with a Renault Zoe to avoid a tsunami of cancellations.⁴³

cancellations. We have already had to delay the start of production, which has resulted in some cancellations, and any further delay in the launch of serial production may lead to additional cancellations. In order to mitigate the effect of delays of the expected start of the production of the Sion on our customers, we had entered into a cooperation with a traditional car manufacturer and for a limited period offered our customers the option to convert parts of their advance payment into a lease arrangement for another electric vehicle at a discount until the delivery of the Sion. We have recently renewed this offer to our customers under slightly modified conditions and, in addition, alternatively offered them to lease a vehicle at discounted conditions from a start-up car rental company, which claims to focus on sustainability. However,

Figure 20 extract from the S-8 filing

This program is still in place, i.e. SEV shareholders indirectly pay Sono Motors reservation holders for driving a competitor's electric vehicle.⁴⁴ The customer surveys already show that 718 reservation holders drive a Renault. Since leasing fees of €300,000 have been paid to Renault, we assume that between 100 and 600 Renaults are partially financed by Sono Motors.

On February 3, 2020, Sono Motors entered into a framework agreement with Renault Deutschland AG (Renault) for electric vehicles (Renault ZOE). According to the agreement, customers, who have made advance payments for the Sion, can enter into a lease agreement with Renault for a Renault ZOE and use their advance payments to partly offset their lease payments. Customers can use advance payments made up to EUR 4,000. According to the framework agreement with Renault, Sono Motors receives a fixed agency fee per lease contract and transfers the advance payment to Renault. Sono Motors recognizes the respective

Figure 21 extract from the notes to the consolidated financial statements

Customers can use €4,000 of their down payment for a leasing contract to get discounted conditions.⁴⁵ According to our research, this applies to all reservation holders before March 15, 2021. At the average down-payment of only €2,500⁴⁶, this would mean massive liquidity problems, as Sono Motors would then have to transfer this money to French automaker and direct competitor Renault.

That's why as of mid-March 2021 only €500 of each deposit could be used for the lease agreement. But according to our calculations, this could still drain up to €2.2 million.

Ultimately, the down payments were intended for further development and production but now this capital must be made available by the investors and shareholders. The down payments by the future customers are used to retain these future customers.

⁴³ Sono Group N.V., S-8 filing, 2021, p. 82.
⁴⁴ Sono Group N.V., S-8 filing, 2021, p. 82.
⁴⁵ Sono Group N.V., S-8 filing, 2021, F-35.
⁴⁶ https://www.sec.gov/Archives/edgar/data/0001840416/000117184322000607/exh_991.htm

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In addition to the quantitative indications, it is becoming apparent in German message boards that reservation holders are withdrawing their reservations because they have found a substitute.

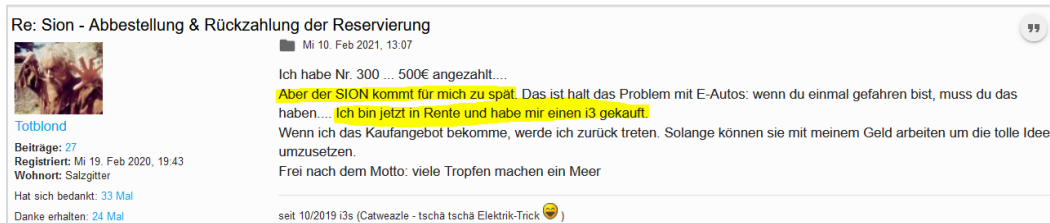


Figure 22 screenshot from a message board, translation below

[...] I have no. 300 ... 500€ deposited....

But the SION is too late for me. That's just the problem with e-cars: once you've driven it, you have to have it.... I'm retired now and bought an i3.

When I get the offer to buy, I will step back. Until then they can work with my money to implement the great idea. [...]

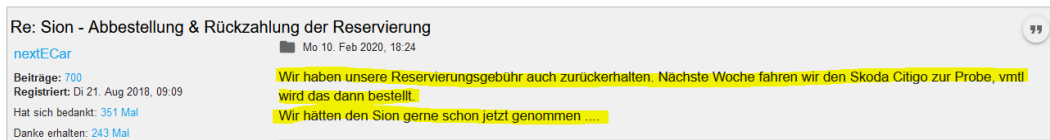


Figure 23 screenshot from a message board, translation below

[...] **We have also received our reservation fee back. Next week we will test drive the Skoda Citigo, vmtl that will be ordered then.**

We would have liked to take the Sion already now [...]

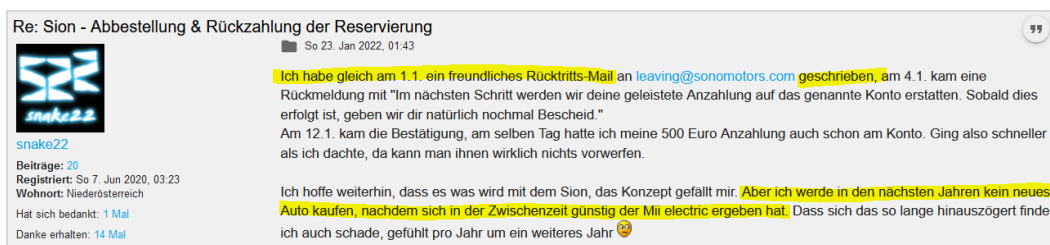


Figure 24 screenshot from a message board, translation below

[...] **I wrote a friendly cancellation email to leaving@sonomotors.com on 1.1., on 4.1. [...]**

I still hope that it will be something with the Sion, I like the concept. But I won't be buying a new car in the next few years, after the Mii electric came up cheaply in the meantime. That this is delayed so long I also find a pity, felt per year by another year [...]

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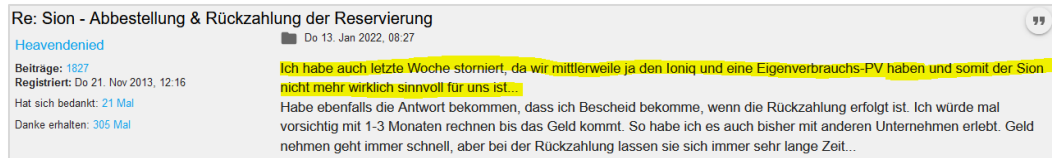


Figure 25 screenshot from a message board, translation below

[...] I also canceled last week, as we now have the Ioniq and a self-consumption PV, so the Sion no longer really makes sense for us [...]

Sono was able to rely on its perceived status as an EV pioneer in its early days when electric mobility was ignored by the dominant market players. But those days are over.

We believe that the cancellation rate will increase within the next few months. SEV is no longer a pioneer in the electric car industry and established car manufacturers offer - as shown - immediately available substitutes.

But now that the big brands are coming up with their products, it will be difficult to continue to attract customers with them or to put off existing customers.

NINGI RESEARCH

Shifted perception of priorities

That the company and the management continue to live in a bubble is also shown by the fact that SEV published a new corporate branding a few weeks ago.⁴⁷

We are shocked that apparently investments are made in the fourth corporate redesign in five years and its third product restructuring in three years.⁴⁸ Also, more personnel are to be hired for a positive external presentation instead of tackling operational problems and securing the future of the company.⁴⁹



Figure 26 screenshot from the career website

Operational problems have not been addressed for years. The fact that priorities within the company seem to have shifted is also shown by the fact that to this day part of the reservation proceeds from SEV cannot be used. In the prospectus, it is meekly admitted that PayPal has blocked funds amounting to almost 5 million euros.⁵⁰ This issue is known since March 2020.⁵¹

we may not achieve our projected level of revenue, even if all of our cars currently reserved are sold or otherwise commercialized. In addition, certain of our customers used the online payment system PayPal for their reservations and advance payments. We have not been able to immediately access these funds due to PayPal's relevant terms and conditions and may have to wait a substantial amount of time before PayPal releases these funds to us. It cannot be precluded that future advance payments made via PayPal may be subject to similar restrictions.

Figure 27 extract from the S-8 filing

The other current financial assets as of June 30, 2021 (kEUR 5,241; Dec 31,2020: kEUR 5,404) mainly consist of PayPal reserves (kEUR 4,980; Dec 31,2020: kEUR 4,655), receivables from crowdfunding and deposits (kEUR 226; Dec 31,2020: kEUR 179) and debtor creditors (kEUR 19; Dec 31,2020: kEUR 539).

Figure 28 extract from the notes to the consolidated financial statements

This problem has existed for years, with the company and executive management failing to reach an agreement with PayPal to date. And up to this day, PayPal is offered as a payment method for Sion reservations.⁵²

⁴⁷ <https://sonomotors.com/en/blog/a-community-company-supporters-decide-on-new-sono-logo/>

⁴⁸ https://web.archive.org/web/*/https://sonomotors.com/

⁴⁹ <https://sonomotors.com/en/career/>

⁵⁰ Sono Group N.V., S-8 filing, 2021, p. 87.

⁵¹ Sono Group N.V., S-8 filing, 2021, p. 87.

⁵² <https://sonomotors.com/en/preorder/>

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In addition, we believe the question of future contract manufacturing in Sweden remains. Sono Motors has been planning for some time to have the Sion produced in a former Saab production facility in Trollhättan. Before the IPO, there was no binding contract with National Electric Vehicle Sweden and this has not been communicated further to date.⁵³ One problem Sono has to face is that NEVS parent company, Evergrande Group, is heavily indebted and is already looking for buyers for NEVS.⁵⁴ Since the IPO of Sono Motors, Evergrande has been declared as "in default", so the situation for NEVS has also become even more serious.⁵⁵

The first assets of NEVS were sold to competitors of Sono Motors and almost half of all employees were laid off last October.⁵⁶ ⁵⁷ The remaining employees are dedicated to the PONS system. NEVS is in final discussions with the new investors and Evergrande.⁵⁸ Whether these new owners of NEVS would even agree to production is questionable in our opinion.

The timely realization of the IPO transaction with the proceeds of at least mEUR 149 as well as obtaining further required financing, based on management's current estimates, of at least mEUR 205 (by a second offering or other means of financing) is crucial for the Sono Group's ability to achieve start of serial production within the first half of 2023. For the period after SOP, the management expects that the operating

Figure 29 extract from the notes to the consolidated financial statements

If a contractual agreement is nevertheless reached between NEVS and SEV, Sono Motors will need at least €205 million to start production.⁵⁹

The liquidity situation has been tight for years and, as it now turns out for Sono Motors, development and manufacturing are very capital-intensive.

⁵³ <https://www.electrive.com/2021/10/27/sono-still-hasnt-reached-a-production-agreement-with-nevs/>

⁵⁴ <https://www.reuters.com/business/autos-transportation/evergrandes-swedish-electric-vehicle-unit-sale-talks-ceo-says-2021-10-15/>

⁵⁵ <https://www.bloomberg.com/news/articles/2021-12-09/evergrande-defaults-for-first-time-as-china-debt-strains-spread>

⁵⁶ <https://www.proteanelectric.com/bedeo-acquires-protean-electric-from-national-electric-vehicle-sweden-nevs-part-of-evergrande-groups-automotive-business/>

⁵⁷ <https://www.dn.se/ekonomi/nevs-varslar-nastan-halfften/>

⁵⁸ <https://www.di.se/live/nevs-vd-om-agarfragan-narmar-oss-en-losning/>

⁵⁹ Sono Group N.V., S-8 filing, 2021, F-7.

NINGI RESEARCH

Burning cash faster than Nero burning Rome

At year-end 2021, SEV still had €133 million in cash, although €137 million had been raised through the IPO six weeks earlier.⁶⁰ Seemingly we believe on the day of the IPO, there was no more cash in the accounts. We believe that Sono Motors has expensed €30 million in the second half of 2021 – almost twice as much as in the first half of 2021.⁶¹

- On 17 November 2021, the Company listed on NASDAQ under the ticker “SEV”. **The net proceeds of €137 million** (\$156 million) generated through the IPO enable Sono Motors to continue development of the Sion, the world's first solar electric vehicle (SEV) featuring the Company's patented solar technology, as well as further development of Sono Motors' proprietary solar technology. This technology is engineered to enable integration and licensing for a wide range of vehicle architectures that go beyond the Sion, such as buses, trucks, and last-mile vehicles.
- Sono Motors has amassed about 16,700 refundable reservations by year-end 2021; reservations increased by nearly 4,000 in 2021, which is equivalent to a 31% y-o-y increase. Reservations in the fourth quarter of 2021 amounted to around 2,300, and the average down payment per reservation is nearly €2,500 net, while the minimum requirement is €500 (incl. 19% VAT).
- Cash position at year-end 2021 **was €133 million**. As was previously highlighted in the Company's prospectus, filed with the SEC on 18 November 2021, to commence series production of the Sion, the Company will need to raise significant additional capital.

Figure 30 extract from the 6-K filing

This makes sense, as Sono Motors says it would have been insolvent by December 31, 2021, without the funds from the IPO.⁶²

statements included in this prospectus. Accordingly, there is substantial doubt about our ability to continue as a going concern within twelve-months from the date of issuance of these financial statements. Based on the cash position as of August 31, 2021 and our business plan, **excluding any targeted proceeds from an initial public offering, as of August 31, 2021, the Group would become insolvent by December 2021 or shortly thereafter if no additional financing can be raised.**

Figure 31 extract from the S-8 filing

The funds raised will now be used solely for further prototype development. This is because at least €205 million will be needed for the actual production of the SION, and this has to be raised through other channels.

Given that SEV currently only holds cash and intangible assets on its balance sheet and no collateralizable assets are being acquired for manufacturing, we consider a credit facility agreement by a bank consortium to be out of the question. **In our opinion, the risk for banks is simply too high.**

As a result of the material weaknesses, made journal entries without proper underlying documentation and failed to identify adjustments in various areas, including, but not limited to, **capitalization of intangible assets; did not maintain accurate customer and creditor data, did not remit correct VAT declarations, made disbursements for which the Company did not retain sufficient supporting documentation, including underlying invoices; did not have sufficient knowledge of IFRS, including understanding of new accounting standards, in order for the preparation of consolidated financial statements in accordance with IFRS and consideration of the impact of changes on our internal control over financial reporting; did not have an effective risk assessment process to identify and assess the financial reporting risks caused by changes in**

Figure 32 extract from the S-8 filing

In addition, Sono Motors still has significant problems within its financial reporting and IFRS.⁶³ We can speak from experience that the past accounting weaknesses alone are a no-go for banks.

⁶⁰ https://www.sec.gov/Archives/edgar/data/0001840416/000117184322000607/exh_991.htm

⁶¹ Sono Group N.V., S-8 filing, 2021, p. 88.

⁶² Sono Group N.V., S-8 filing, 2021, p. 88.

⁶³ Sono Group N.V., S-8 filing, 2021, p. 93.

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The investment capital could be raised on the private market, but since Sono Motors already had problems in the past to convince venture capital or private market participants, we also consider this unlikely.

Currently, there is a loan agreement with the shareholder Mr. Willenbacher in the amount of €10 million, which could be used until the end of 2023. But in our opinion, this is only a drop in the bucket.

Ultimately, only the stock market remains for raising capital. The capital can be raised by issuing new shares: i.e. at the price of \$5 per share, 40 million new shares would thus have to be issued, which would further dilute the share price. **A sell-off by existing shareholders prior to any capital increase is very likely, in our opinion. Due to the subsequent price decline, Sono Motors would have to significantly increase the number of shares to be issued. In our opinion, this will lead to a price decline spiral and it will become impossible to raise financing.**

Just how delicate the situation is at Sono Motors, is also shown by the fact that the chairman of the supervisory board, Wilko Stark - a veteran in the automotive industry - suddenly quit in January.⁶⁴ He left SEV to join the supervisory board of a SPAC called Levere Holdings.⁶⁵ Levere Holdings is the new company of Ulrich Kranz, the founder of Canoo. Canoo is currently under SEC investigation.⁶⁶ As a member of SEV's supervisory board, preferring to move to Canoo's next offshoot speaks volumes, in our opinion. Mr. Stark has also deleted the chapter Sono Motors from his public profile.⁶⁷

We think that successful financing will not take place within the next few months.

⁶⁴ https://www.sec.gov/Archives/edgar/data/0001840416/000117184322000607/exh_991.htm

⁶⁵ <https://www.levereholdings.com/>

⁶⁶ <https://www.bloomberg.com/news/articles/2021-05-17/electric-vehicle-startup-canoo-s-ceo-discloses-sec-investigation>

⁶⁷ <https://se.linkedin.com/in/wilko-stark-576482172/>

NINGI RESEARCH

Money, Money, Money⁶⁸

We think that the company will fail despite different business segments because of the Sion car. A product that the founders knew investors would immediately terminate if they entered and monetize the technology elsewhere if possible.⁶⁹

The founders saw themselves following in the footsteps of Henry Ford, Tesla, and Apple.^{70 71} We think that they believe they were destined for something greater.

In our opinion, this is interestingly made clear by the so-called Sono Points program. It is a kind of incentive program, as every customer with a reservation gets so-called Sono Points. These Sono Points have a monetary value because, according to the company, they give each customer a profit drawing right on future dividends, stock sales, and liquidation proceeds.⁷² This was created because, according to the founders, they had given all profit drawing rights in a so-called community pool. This means that the profits go to the customers with reservations through the sale of shares or potential dividends.

(5) Laurin Hahn and Jona Christians, together with Navina Pernsteiner, gave profit participation rights originally associated with their shares in Sono Motors GmbH and now, after our corporate reorganization, equivalent to 18,399,456, 16,556,510 and 1,839,946 common shares in Sono Group N.V., respectively, to a "community pool" as further described under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Significant Accounting Judgments, Estimates and Assumptions—Sono Points."

Figure 33 extract from the S-8 filing

Our research shows that the founders have surrendered 92.9% of their profit participation rights on the common shares to a VIE type-like structure and still hold around 7% in common shares.⁷³ The VIE is controlled by the founders themselves, i.e. the voting rights of the common shares fall to them.⁷⁴ In addition, both CEOs, Mr. Hahn and Mr. Christians, still own 100% of all "High Voting Shares", which include 25 votes instead of one.⁷⁵

We believe that the decision-making ability of the board of management, and thus the long-term success of the company, is impaired by insufficient monetary incentives.

The executive management, which also controls the supervisory board, is not pursuing the same goals as the shareholders and investors.

In our opinion the founders hence chief executives are driven by idealism and a false sense of rationalism.

This false sense of rationalism and false decision-making has been even stylized in a video. The co-founder Mr. Hahn explicitly states that he decided against a funding by institutional investors because he knew that it would have been the death of the Sion car.⁷⁶ The title of the video: "Money".

⁶⁸ To be read or even sung in the same rhythm as ABBA did it in 1982

⁶⁹ <https://www.youtube.com/watch?v=O5AGEvSoC84>

⁷⁰ <https://youtu.be/A2pxPlpuHCY?t=745>

⁷¹ <https://www.forbes.com/sites/edgarsten/2021/07/19/tesla-ties-leads-to-german-solar-electric-car-company-choosing-sibros-connectivity-platform/?sh=33b9e6e138a3>

⁷² Sono Group N.V., S-8 filing, 2021, p. 50.

⁷³ Sono Group N.V., S-8 filing, 2021, p. 134.

⁷⁴ Sono Group N.V., S-8 filing, 2021, p. 50.

⁷⁵ Sono Group N.V., S-8 filing, 2021, p. 134.

⁷⁶ <https://www.youtube.com/watch?v=O5AGEvSoC84>