



### Pharus Electric Mobility Value Niche

# Portfolio Update 30th September 2022 – 31<sup>st</sup> December 2022



€ 140.86

€ 151.60

€ 151.45

Launch date: 10.06.2019

Total Net Asset as of 31.12.22: € 18,367,659.36

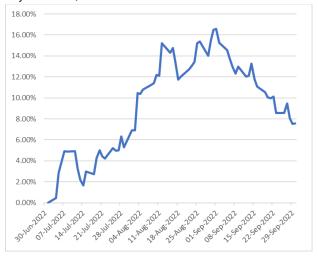
Currency: EUR

Net Asset Value	Class A – ISIN: LU1867072149
per share as of 31.12.22:	Class B – ISIN: LU1867072222
u3 01 31.12.22. –	Class Q – ISIN: LU1867072495

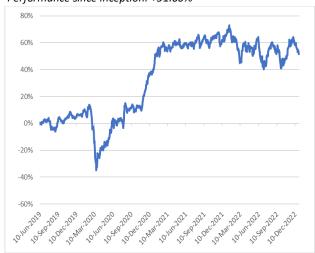
	Q4	Year to Date	1 Year	Since inception
Performance (Class B)	+7,56%	-8,75%	-8.75%	+51.60%

#### Net Asset Value per share

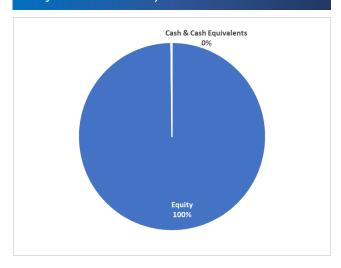
#### Performance Q4 2022: +7.56%



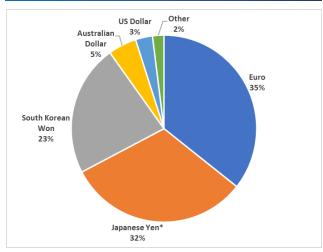
#### Performance since inception: +51.60%



#### Portfolio breakdown by asset class



#### Portfolio breakdown by currency



<sup>\*</sup>net of JPY hedging

<sup>\*</sup> rating at 31/01/23 = Class 0

#### **Quarterly Comment**

The fund achieved a positive performance of 7.56% during the quarter, ending the year with a decline of 8.75%.

The fund is a vehicle that exposes investors to electric mobility through a value approach. The portfolio has a P/E 2022 of less than 8x and P/TBV close to 1x. The management team invests in companies exposed to traditional sectors, such as engineering, chemicals, mechanics, commodities, materials, which have divisions exposed to electric mobility, whose growth can lead to a strong revaluation of the companies. These are often medium-sized and small companies located in Japan and Korea that the market overlooks. Profitable and financially sound companies. This makes the portfolio safer than investing in new companies. This strategy has been adopted for 7 years now, 3 of them through the world's first electric mobility fund launched in 2015, which the Niche team managed for 3 years since inception with the previous management company, before leaving it and creating their own firm, Niche AM. This approach also allows us to look beyond economic cycles, which are always difficult to predict, to focus on the inevitable expansion of electric mobility. Let us therefore not waste the reader's time trying to predict the economic cycle.

The moment the fund's particular target market rises significantly and valuations are no longer in line with the fund's approach, the fund will be closed and investments returned to investors. Before that time, we see very significant upside potential to benefit from.

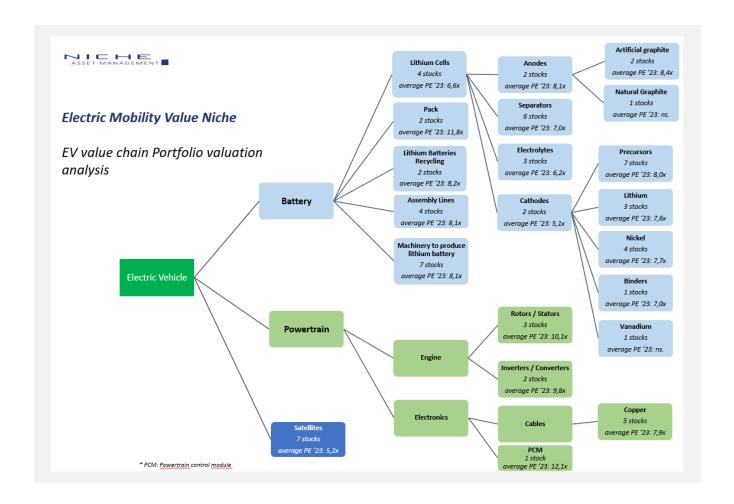
During the fourth quarter, the acceleration in the adoption of electric mobility was still a supporting factor. In November, the market share of electric cars (100% electric + plug in) reached 35% in China and 27% in Europe. In some markets, the trend was somewhat supported by the presence of incentives that will be scaled back from 2023, but basically these results are far higher than assumed at the beginning of the year. In terms of sentiment, the increased availability of cars, in conjunction with the overcoming of the bottleneck resulting from the semiconductor industry, also had a positive influence.

At the level of individual niches, the most positive contributions came from Commodities (+20%), Anodes (+12%), Lithium Cells (+11%) and Powertrains (+8%). The Commodities niche benefited from the good performance of Syrah, an operator that is developing production capacity in the United States for materials used in the manufacture of anodes, in respect of which it has already signed supply contracts with some of the leading manufacturers of electric cars and for which it has received funding from the Department of Energy. In fact, the US is an important growth driver for the electric car industry by virtue of its huge funding to support the creation of an industry there (so-called Inflation Reduction Act). These measures also supported the performance of the Lithium Cells niche, thanks to the rebound of Panasonic and LG Chem, which will develop additional gigafactories for battery production in this country, further increasing their already extremely robust order books.

Geographically, the fund maintained significant exposure to Japan and Korea due to the attractive valuations of these markets, coupled with the strong know-how held in battery and battery component production capacity. Coupled with this, it should be noted that the current geopolitical situation means that Western carmakers are more inclined to sign non-Chinese trade deals. Japanese and Korean players should take advantage of this, as well as other players in the portfolio, including the aforementioned Syrah, one of the few alternatives to Chinese suppliers with the largest market share in the anode materials market.

We are approaching the steepest side of the S-curve of the e-mobility revolution, which should favour the explosion of sales and profitability of players exposed to this sector. The fund provides exposure to this trend, but with limited risk of permanent capital loss thanks to the value approach mentioned above.

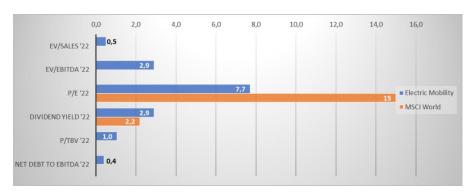
Below we present the portfolio's valuation broken down by the different segments that make up the portfolio.



### Niche Performance Q4 2022

NICHE	Performance
Lithium Cells	+10,61%
Cathodes	+2,73%
Anodes	+12,07%
Electrolytes & Elecfoils	+5,39%
Separators	-6,88%
Commodities	+20,15%
Powertrains & Ultracapacitors	+7,78%
Satellite Areas	+6,80%

### Portfolio valuation



Source: Niche AM, Thomson Reuters, MSCI

### Top holdings

ISIN	SECURITY	%	NICHE	SUB-NICHE
JP3866800000	PANASONIC	7.73%	Lithium Cells (LC)	NCA
KR7051911006	LG CHEMICAL PREF	7.50%	Lithium Cells (LC)	NMC
JP3402600005	SUMITOMO METAL MINING	5.96%	Cathodes (CM)	NCA
JP3627400009	TODA KOGYO CORP	5.17%	Cathodes (CM)	NCA
JP3544000007	TEIJIN LTD	4.43%	Separators (SM)	WET
FR0013176526	VALEO SA	3.82%	Power Trains & Ultracapacitors (PTU)	POWER TRAINS
KR7005490008	POSCO HOLDINGS INC.	3.68%	Anodes (AM)	ARTIFICIAL GRAPHITE
JP3368000000	RESONAC HOLDINGS CORPORATION	3.61%	Anodes (AM)	ANODES
KR7096771001	SK INNOVATION CO	3.49%	Lithium Cells (LC)	NMC
DE000VTSC017	VITESCO TECHNOLOGIES GROUP	3.25%	Power Trains & Ultracapacitors (PTU)	POWER TRAINS

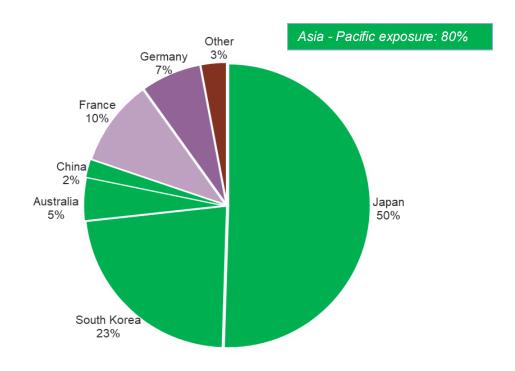
#### Main increases in weight

Holdings	Weight at 30/09/22	Weight at 31/12/22
Eramet	0.5%	3.1%
Mitsubishi Materials	0.7%	1.4%
Nittetsu Mining	0.0%	0.6%
Hirano Tecseed	0.7%	1.3%
CKD	0.0%	0.6%

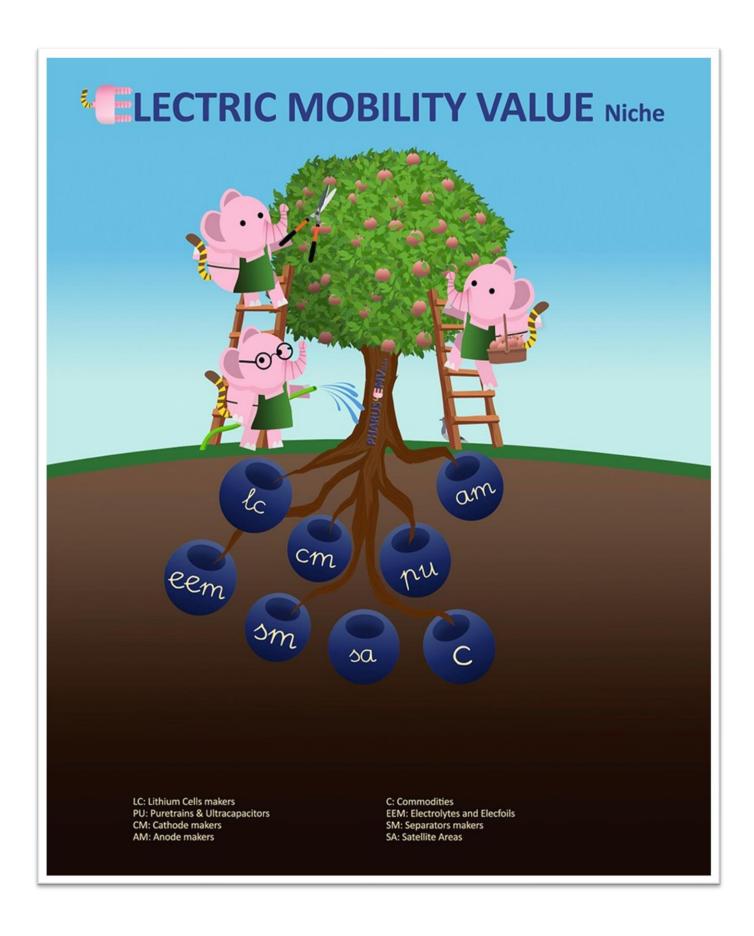
#### Main decreases in weight

Holdings	Weight at 30/09/22	Weight at 31/12/22	Total Return
Vitesco Technologies Group	4.9%	3.3%	+17.9%
Toda Kogyo	6.5%	5.2%	+7.1%
Syrah Resources	3.8%	3.0%	+388.9%

#### Equity breakdown by geographical exposure



Source: Niche AM



### **Lithium Cells**



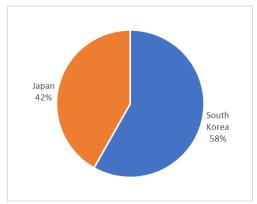
# stocks: Average Market Cap (mln €) 22.516 956 Median Market Cap (mln €):

#### Lithium cells - segment breakdown

		EM Fund	Lithium Niche
Lithium Cells	LC	20.3%	100.0%
Nickel Manganese & Cobalt	NMC	12.5%	61.9%
Nickel Cobalt & Aluminium	NCA	7.7%	38.1%

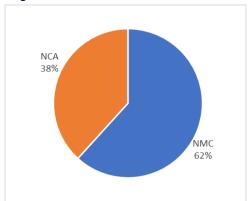
Source: Niche AM

#### Geographical breakdown

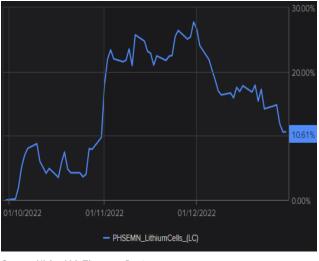


Source: Niche AM

### Segment breakdown

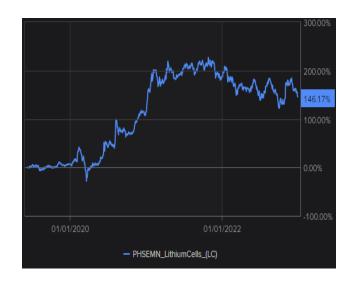


Performance Q4 2022 (30/09/22-31/12/22)



Source: Niche AM, Thomson Reuters

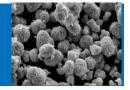
#### **Performance since inception (10/06/19 – 31/12/22)**



#### Niche description

Electric mobility will grow dramatically in the next few years, with a speed still unexpected by most and changing the world for good. The electric mobility will be pervasive, affecting land, air and water transportation. At the base of the electrification of mobility we found the lithium batteries that are made up of several lithium cells bundled together. Each lithium cell is a small battery with a cathode, an anode, a separator and filled with electrolyte solution. There are different kinds of lithium cells, depending on the chemistry used, although the NCA and NCM will be those by far most used in the electrification of mobility.

### **Cathodes**



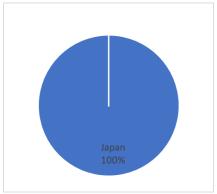
# stocks: 7 Average Market Cap (mln €): 3.530 Median Market Cap (mln €): 234

#### Cathodes – segment breakdown

		EM Fund	Cathodes Niche
Cathodes		17.4%	100.0%
Nickel Manganese & Cobalt	NMC	1.7%	10.0%
Nickel Cobalt Aluminium	NCA	11.1%	63.9%
Cathode Materials	CM	4.5%	26.1%

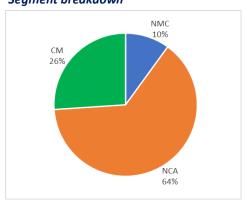
Source: Niche AM

#### Geographical breakdown

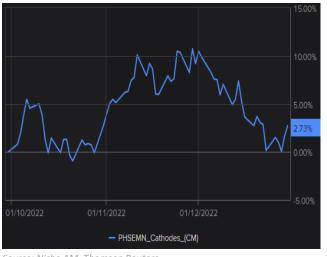


Source: Niche AM

#### Segment breakdown

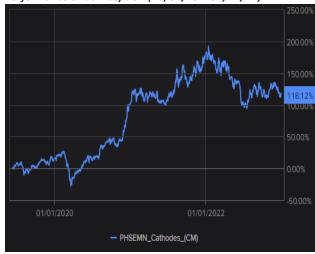


Performance Q4 2022 (30/09/22-31/12/22)



Source: Niche AM, Thomson Reuters

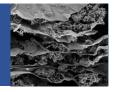
#### Performance since inception (10/06/19 - 31/12/22)



#### Niche description

Cathodes represent the most valuable component of EV batteries (making up about 1/4 of the whole cost of the cell) and their chemistry is pivotal in determining energy density and capacity of the battery. Cathodes composition for EVs, for at least the next 5/7 years, will be mainly based on two different chemistries, NCA (nickel, cobalt and aluminium) and NMC (nickel, manganese and cobalt), as they provide the energy density needed to drive the electrification of mobility mass market. Lithium cells are normally named after the chemistry of their cathodes (NCA, NMC, LFP, etc).

### **Anodes**



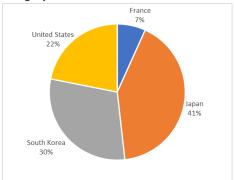
6 6.599 # stocks: Average Market Cap (mln €) Median Market Cap (mln €): 2.415

#### Anodes – segment breakdown

	EM Fund	Anodes Niche
Anodes	12.3%	100.0%
Coating	4.2%	34.3%
Anodes	4.6%	37.0%
Artificial Graphite	2.7%	21.9%
Needle Coke	4.2%	34.3%

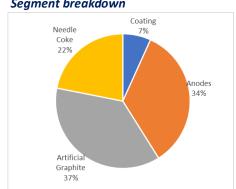
Source: Niche AM

#### Geographical breakdown



Source: Niche AM

#### Segment breakdown

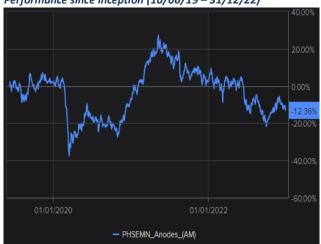


Performance Q4 2022 (30/09/22-31/12/22)

- PHSEMN\_Anodes\_(AM)

Source: Niche AM, Thomson Reuters

#### Performance since inception (10/06/19 - 31/12/22)



#### Niche description

Anodes play an important role in determining the energy capacity and density of a battery, as they perform the role of storing and emitting Li-ions to and from the cathode. The anodes are coated on top of a copper foil, a metallic foil which acts as a current collector for the anode. Selecting a high-quality active material for anodes allows Li-ion battery cells to deliver both higher capacity retention and greater power. The selection of materials used in anodes plays a significant role in determining a battery's transmission and lifespan, which is the most important criteria in the material selection process.

### **Separators**



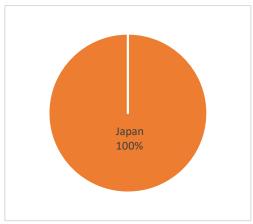
# stocks: 2.763 Average Market Cap (mln €): Median Market Cap (mln €):

#### Separators - segment breakdown

	EM Fund	Separators
Separator Maker	6.1%	100.0%
Wet Separators	5.0%	82.0%
Dry Separators	1.1%	18.0%

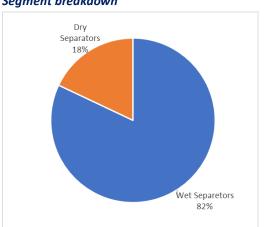
Source: Niche AM

#### Geographical breakdown

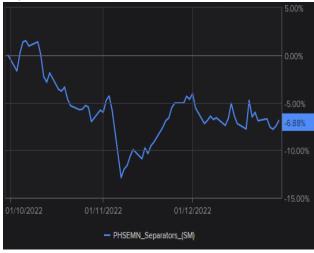


Source: Niche AM

Segment breakdown



Performance Q4 2022 (30/09/22-31/12/22)



Source: Niche AM, Thomson Reuters

**Performance since inception (10/06/19 – 31/12/22)** 



#### Niche description

Separators determine the safety of a Li-ion battery as they act as an absolute barrier between the cathode and anode. Although separators account for only 5% of the battery cell content, they are the second-most significant raw material in terms of cost (about 10% of a Li-ion battery cost). The automotive separator market was worth some USD600m in 2015, and in the same year totalled 0.5bn sqm on a surface-area basis. This figure could grow to 20bn sqm by 2025, in line with the growth of the EV battery market. However, there is a risk in the future for this component as separators would be unnecessary if all solid-state batteries replace Li-ion batteries from 2030.

## **Electrolytes & Elecfoils**



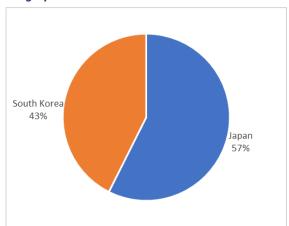
# stocks: 3 Average Market Cap (mln €): 314 Median Market Cap (mln €): 301

#### Electrolytes & Elecfoils - segment breakdown

	EM Fund	Electrolytes Niche
Electrolytes & Elecfoils	3.4%	100.0%
Electrofoils	0.0%	0.0%
Electrolytes	3.4%	100.0%

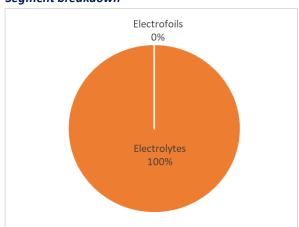
Source: Niche AM

#### Geographical breakdown

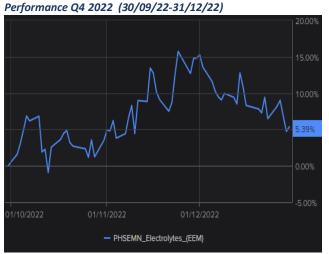


Source: Niche AM

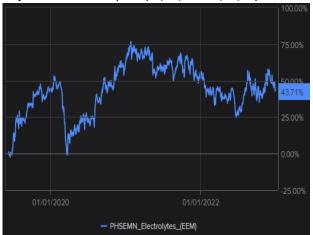
#### Segment breakdown



- 4



Performance since inception (10/06/19 – 31/12/22)



Source: Niche AM, Thomson Reuters

#### Niche description

Electrolytes play a key role in enabling the use of electricity as they promote the movement of Li-ions between the cathode and anode. Electrolytes consist of solvents, salts and additives. Solvents act as dissolvers of the conducting salts. Salts are used as the passage for Li-ions to move and determine the ion conductivity. Additives serve a specific purpose and are usually added to the electrolyte to modify its properties. Materials with high ionic conductivity are essential so that lithium ions can freely move between the anode and the cathode. Therefore, the type of electrolyte used affects the speed of movement of Li-ions and the overall performance of the battery.

### **Commodities**



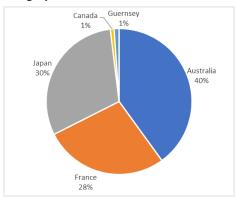
# stocks: Average Market Cap (mln €): Median Market Cap (mln €): 1.229 1.545

#### Commodities – segment breakdown

	EM Fund	Commodities Niche
Commodities	11.4%	100.0%
Natural Graphite	3.0%	26.2%
Cobalt	1.2%	10.5%
Nickel Sulphate	4.2%	36.4%
Lithium	1.4%	12.0%
Copper	1.6%	13.8%
Vanadium	0.1%	1.1%

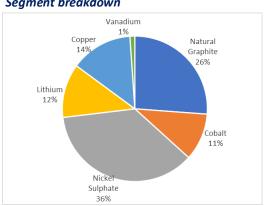
Source: Niche AM

#### Geographical breakdown



Source: Niche AM

#### Segment breakdown



Performance Q4 2022 (30/09/22-31/12/22)



Performance since inception (11/06/19 - 31/12/22)



Source: Niche AM, Thomson Reuters

#### Niche description

Commodities are vital to electric mobility. The need for cobalt, lithium and graphite will increase many times by 2025 while the need for nickel will almost double. Today the world looks unprepared for such a change and a gradual increase in the price of these commodities is likely. The path will be volatile but potentially highly rewarding.

## **Powertrains & UTs**



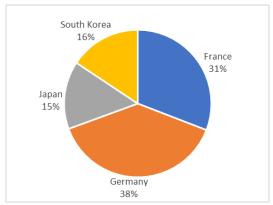
# stocks: 5 5.018 Average Market Cap (mln  $\in$ ): Median Market Cap (mln ∈): 3.126

#### PTs & UTs - segment breakdown

	EM Fund	Powertrains & UT
Powertrains & UTs	12.4%	100.0%
Powertrains	10.5%	85.1%
Ultracapacitors	1.8%	14.9%

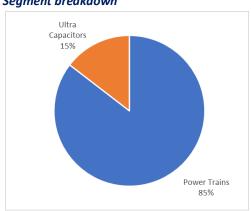
Source: Niche AM

#### Geographical breakdown



Source: Niche AM

#### Segment breakdown







Source: Niche AM, Thomson Reuters

#### Niche description

Powertrains will have to adapt to the electrification of mobility and many players are already active in providing new solutions to optimise the functioning of the EVs. Those better equipped to master the change could be able to gain market share and increase margins. At the same time ultracapacitors could become an important complement of the electric powertrain, providing high power when needed, and in doing so increasing the performance and lengthening the life of the batteries.

### **Satellite Areas**



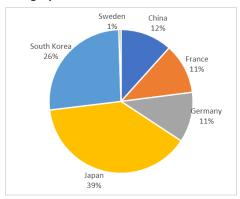
# stocks: 12 Average Market Cap (mln €): 10.432 Median Market Cap (mln €): 937

#### Satellite Areas – segment breakdown

	EM Fund	Satellite Areas Niche
Satellite Areas	15.7%	100.0%
Sensors	2.5%	15.9%
Cars	5.7%	36.3%
Forklifts	0.1%	0.5%
Assembly Lines	2.3%	14.6%
Electric Airplanes	0.6%	4.0%
Electrodes Cutting Equipment	3.0%	19.0%
Charging Stations	0.7%	4.2%
New Materials For Mobility	0.4%	2.7%
Lithium Batteries Assembly Machinery	0.4%	2.9%

Source: Niche AM

#### Geographical breakdown



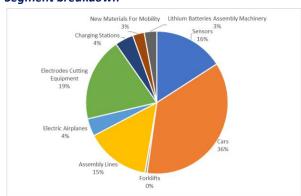
Source: Niche AM

### Performance Q4 2022 (30/09/22-31/12/22)

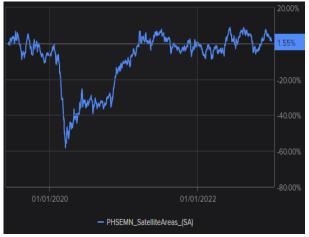


Source: Niche AM, Thomson Reuters

#### Segment breakdown



#### Performance since inception (10/06/19 - 31/12/22)



#### Niche description

The passage from the internal combustion powered vehicles to battery powered vehicles will a seismic shift. The underlining market for batteries is likely to multiply by more than 30 in less than ten years by value, reaching that of semiconductors. One billion of cars and hundreds of millions of other vehicles will be affected. The spill over effect will be massive and many sectors will morph radically. This niche tries to pick the companies that could indirectly benefit from this historical shift.

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