RECOVERY OF THE ELECTRIC VEHICLE MARKET IN EUROPE—NEW MOMENTUM FOR TECHNOLOGY AND MARKETS

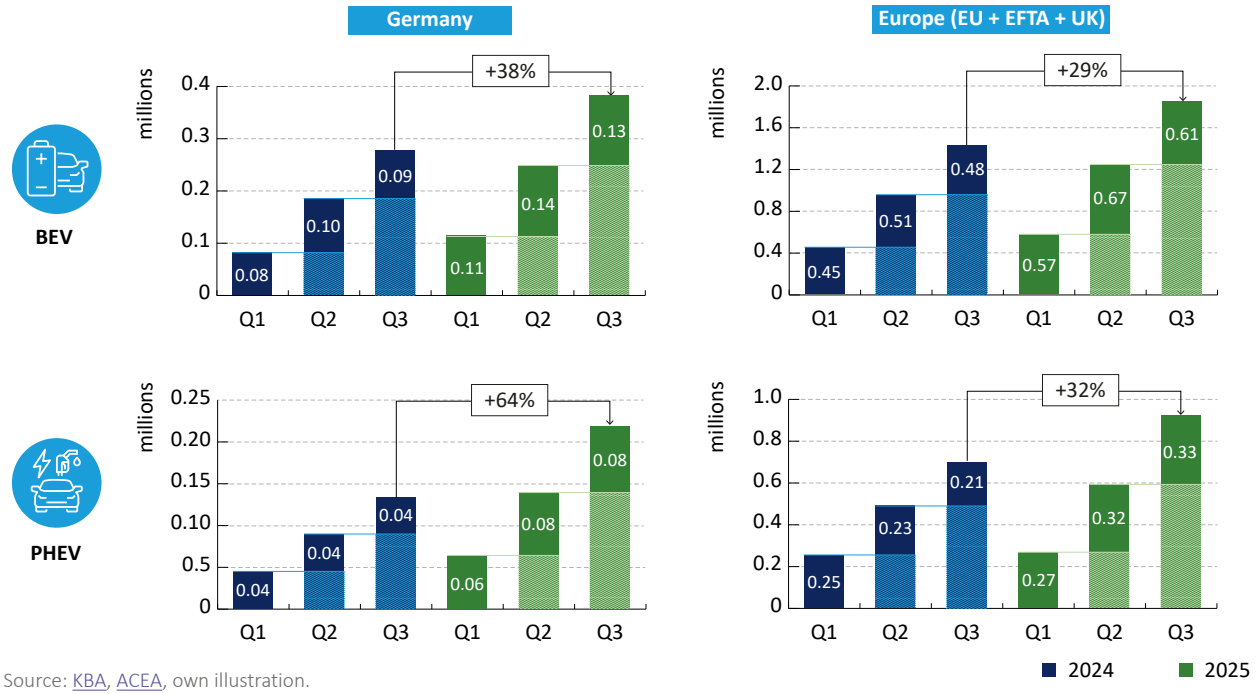
The European electric vehicle (EV) market has experienced a resurgence, with new registrations increasing by 30% compared to the previous year. In the first nine months of 2025, a total of 2.7 million fully electric (BEV) and plug-in hybrid (PHEV) vehicles with external charging capabilities were registered across Europe. Germany alone accounted for nearly 600,000 of these registrations, marking a growth rate of almost 50%. In contrast, market growth in the United States has been more restrained, following the discontinuation of federal subsidies for EVs on September 30. This policy shift is expected to slow the expansion of the EV market and, consequently, the battery industry in the U.S., falling short of earlier projections. Meanwhile, the European battery industry has demonstrated growth in the past years, driven by the accelerating adoption of EVs. However, despite this positive momentum, the sector faces several pressing challenges that must be addressed to sustain its trajectory and capitalize on emerging opportunities.

Electric vehicle market in Europe continues to thrive

As anticipated in the previous market update, new EV registrations in Germany and across Europe have returned to growth. In Germany alone, around 380,000 battery EVs (BEVs) and around 220,000 plug-in hybrid vehicles (PHEVs) were registered in the first three quarters. This represents year-on-year growth of 38% and 64%, respectively. Notably, the number of BEVs and PHEVs registered in the first nine months of 2025 has already surpassed the total registrations for the entire previous year.

Registration figures are also rising in Europe (EU + EFTA + UK). In the first nine months, approximately 1.8 million BEVs (+29% compared to the previous year) and approximately 920,000 PHEVs (+32% compared to the previous year) were registered. In terms of the overall vehicle market, the market share of BEVs and PHEVs is around 28%, which is 6 percentage points higher than the previous year. In addition, almost 3.5 million hybrid vehicles (HEVs) were registered in Europe in the first three quarters. These vehicles have an additional battery to increase efficiency but cannot be charged externally. Compared to PHEVs, the battery in HEVs is significantly smaller.

Figure 1: New BEV and PHEV registrations in Germany and Europe during the first three quarters of 2024 and 2025.



Source: KBA, ACEA, own illustration.

End of tax credits for EVs in the USA

Following Europe, the United States constitutes the second-largest electric-vehicle (EV) market outside China. Nevertheless, market expansion in the United States has been comparatively subdued. During the first nine months of the year, approximately one million battery-electric vehicles (BEVs) were sold—an increase of 11% compared with the previous year—while sales of plug-in hybrid electric vehicles (PHEVs) amounted to roughly 220,000, representing a decline of 7% year-on-year.

The third quarter was particularly strong in terms of sales, as the *One Big Beautiful Bill Act* passed on 4 July 2025 limited credits for EVs to purchases made before 30. September 2025. Electric cars were subsidised with up to USD 7,500 if they met the requirements for local value creation and the use of critical minerals.

In the long term, however, the removal of subsidies is expected to slow the adoption of electric mobility. A sharp decline in sales is anticipated, particularly in the first few months after the subsidy expiration, before stabilising again over time. In addition, emissions regulations in the US have been relaxed. As a result, car manufacturers scale back EV production for the North American market and adjust their expansion plans accordingly.

These shifts are directly impacting demand for lithium-ion batteries and thus the entire battery industry in North America. Expansion plans and production capacities are being reassessed to mitigate the risk of overcapacity. This particularly affects South Korean and Japanese companies, which have invested heavily in building up manufacturing capacity in North America in anticipation of a more pronounced market growth.

In response to the weakening EV market, battery cell manufacturers are expanding their application portfolio by increasingly targeting the rapidly growing market for stationary energy storage systems (ESS). In the wake of the expansion of data centres for artificial intelligence applications, the ESS market could at least partially compensate for the lack of demand from the automotive industry.

Cell production in Europe

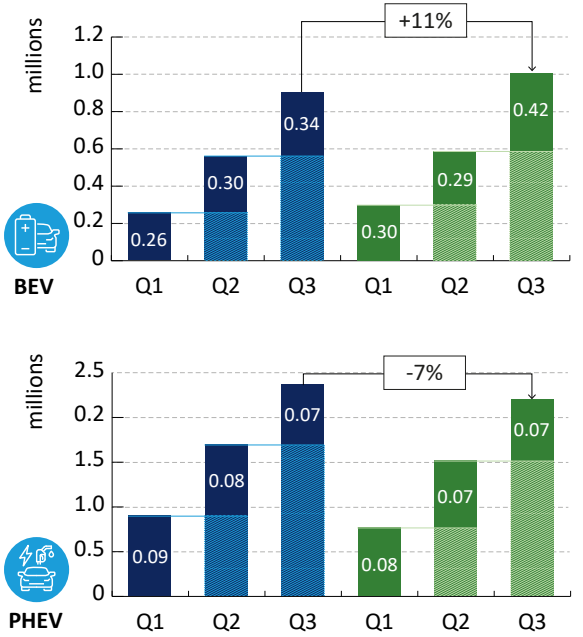
While the situation for cell manufacturers in the US is currently challenging, rising EV registrations in Europe are likely to provide a positive boost for cell production. Figure 3 presents an updated map of lithium-ion cell production sites in Europe. Since the last market update, several developments have occurred.

Lyten intends to acquire Northvolt's sites in Sweden and Germany and plans to resume operations in Sweden in the near future. The takeover could be completed by the end of the year, allowing production to restart in the first half of 2026 in Sweden. Accordingly, the sites have been moved to the „On hold“ category.

Furthermore, production has started at the AESC factory in France, moving it to the „In operation“ category. This gives Europe a nominal production capacity of approximately 215 GWh/a. It should be noted that production capacity does not correspond to actual production and that inexperienced cell manufacturers in particular may need time to ramp-up production.

New to the „Under construction“ category is Gotion Inobat Batteries (GIB), which marked the start of construction in Šurany, Slovakia. Also new in this category is FAAM.

Figure 2: BEV and PHEV sales in the US during first three quarters of 2024 and 2025.



Source: ANL, own illustration.

They are converting an existing factory building for cell production and have already signed supply contracts with machinery and equipment manufacturers.

Cellforce is no longer listed in this category as Porsche has decided against scaling up its own cell production. Furthermore, the joint venture between Stellantis and CATL has also started the construction of the cell factory in Spain.

Figure 3: Manufacturing sites for lithium-ion battery cells with a production capacity > 2 GWh/a (existing, under construction, or first phase planning).

In operation

#	Company		Start of production	Capacity [GWh/a] In operation	Build-up to (Planning first phase)	Maximum
1	CATL	DE	2022	14	24	24
2	AESC	FR	2025	9		30
3	ACC	FR	2023	15	28	40
4	AESC	GB	2012	2	14	35
5	SK on	HU	2020	18		18
6	SAMSUNG SDI	HU	2018	40	50	50
7	SK on	HU	2024	30		30
8	LG Energy Solution	PL	2018	86	90	115

Under construction

#	Company		Start of production	Capacity [GWh/a] In operation	Build-up to (Planning first phase)	Maximum
9	FAAM	IT	2026		8	8
10	PowerCo	DE	2025		20	40
11	Tesla	DE				100
12	PowerCo	ES	2027		20	60
13	InoBat	SK	2026		20	40
14	Verkor	FR	2025		16	50
15	CATL	HU	2026		40	100
16	EVE 亿纬锂能	HU	2026		28	28
17	Rosatom	RU	2026		4	12
18	AESC	ES	2026			30
19	AGRATAS	GB	2026			40
20	CALB	PT	2028		15	45
21	siro	TR	2026		20	50
22	STELLANTIS | CATL	ES	2026			50

Announced

#	Company		Start of production	Capacity [GWh/a] In operation	Build-up to (Planning first phase)	Maximum
23	FINNISH MINERALS GROUP	FI				60
24	BlueSolutions	FR	2030			25
25	ProLogium	FR	2028		4	48
26	SUNWODA 欣旺达	HU	2026			
27	elinor.	NO	2026			40
28	ElevenEs	RS	2026		8	48
29	VOLVO	SE	2030			25
30	InoBat	ES				32

On hold

#	Company		Start of production	Capacity [GWh/a] In operation	Build-up to (Planning first phase)	Maximum
31	ACC	DE			13	40
32	LYTEN	DE				60
33	NOVO	SE			18	50
34	LYTEN	SE	2021	16		60
35	ACC	IT			26	40

Start of production

Capacity [GWh/a]
In operation | Build-up to (Planning first phase) | Maximum

Investment: around EUR 75–120 million per GWh

Jobs: around 50–100 jobs per GWh

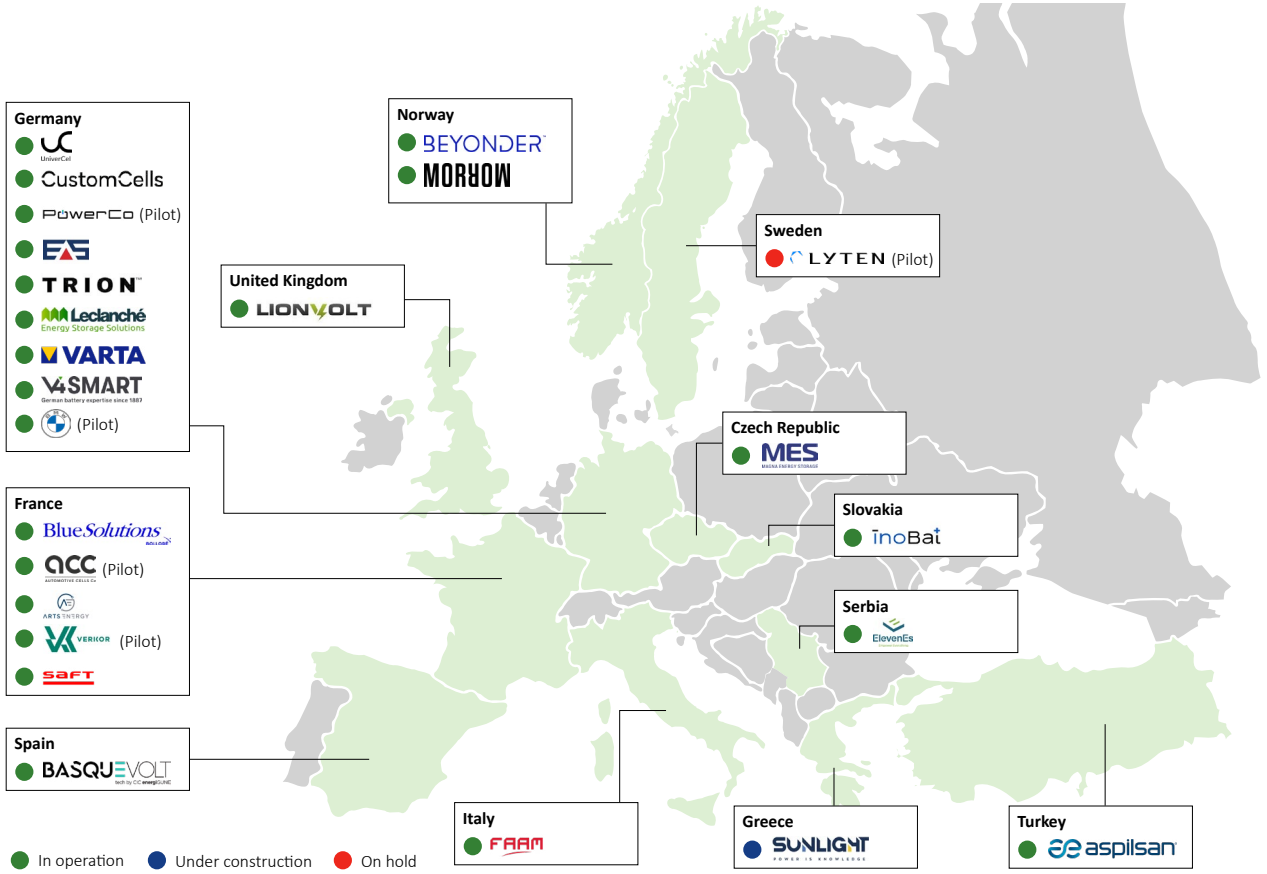
Source: Company announcements. own illustration.

No guarantee of completeness; production capacity ≠ actual production

The map in Figure 3 shows manufacturing locations for lithium-ion battery cells with an existing, under construction or planned production capacity of > 2 GWh/a. The locations of companies with a production capacity of less than 2 GWh/a are shown in Figure 4 . In addition to independent companies that produce cells on a smaller scale for selected applications, pilot plants of larger cell manufacturers are also considered. Pilot lines of research institutions are not included.

The companies shown in Figure 4 produce lithium-ion battery cells for a wide range of applications. These include, for example, stationary storage, starter batteries, shipping, rail transport, aviation and military applications. In addition, smaller sites are important pioneers for future technologies, as they can enable the transition from laboratory to industrial-scale production. In addition to the large, globally active lithium-ion cell manufacturer, there are many small-scale cell manufacturers that make an important contribution to the European battery ecosystem.

Figure 4: Lithium-ion cell production sites with a capacity of < 2 GWh/a.



Source: Company announcements. own illustration.

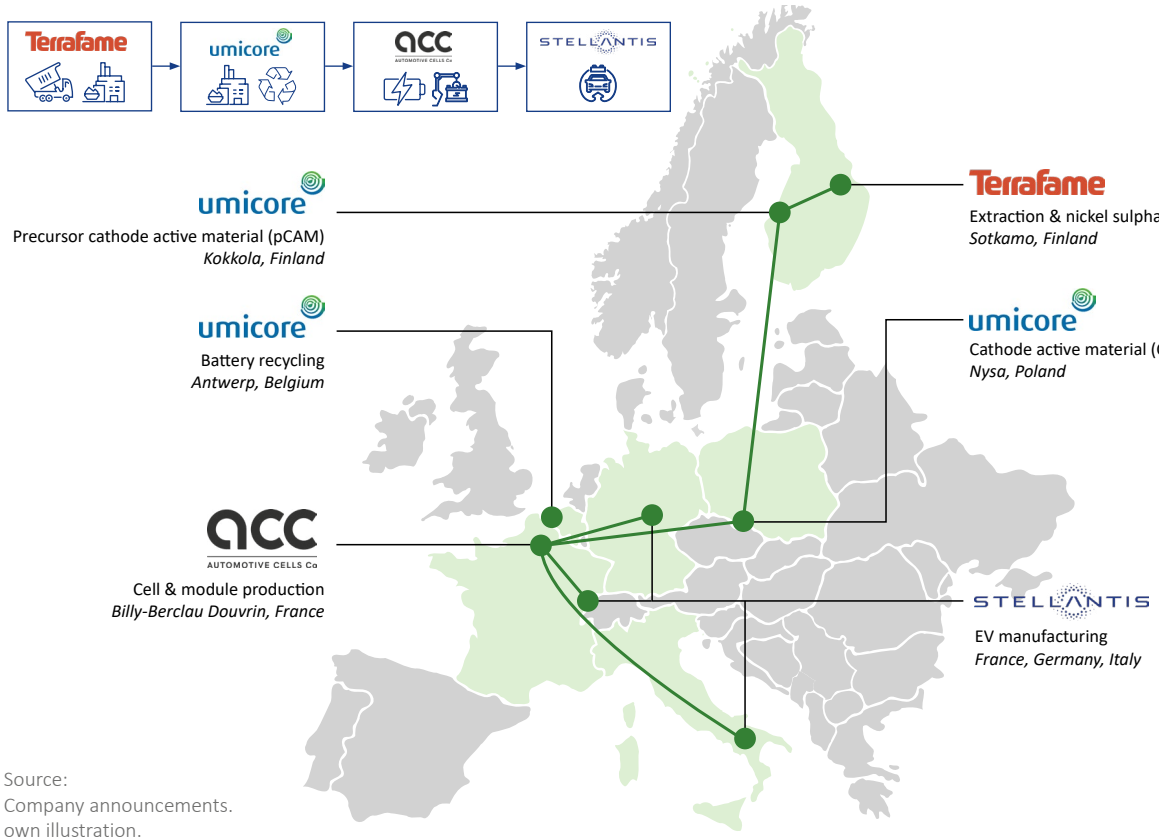
No guarantee of completeness

Battery clusters and European supply chains

As a result of a range of initiatives and industrial policy measures aimed at establishing a battery ecosystem, new battery clusters are emerging in Europe, functioning as central hubs within an increasingly integrated value chain. These include, for example, the „French Battery Valley“ in the Hauts-de-France region and the Energy Cluster in Vaasa, Finland. Cluster regions benefit from strong political support, favourable funding conditions, streamlined approval processes, and strategic logistical locations.

However, it is not only regional clusters that are emerging but also pan-European supply chains. These cover several stages of the value chain, from raw material extraction through cell, battery, and EV production to recycling. For example, Terrafame mines nickel in Finland and processes it into nickel sulphate for the battery industry. Terrafame supplies nickel sulphate to Umicore, am ong others. Umicore, in turn, processes nickel sulphate into precursor cathode active materials (pCAM) in Kokkola, Finland, and pCAM into CAM in Nysa, Poland. ACC obtains CAM from the Umicore plant in Nysa and manufactures battery cells and modules at its Gigafactory in Douvrin, France. In addition, Umicore and ACC have also signed an agreement for the recycling of lithium-ion batteries. The batteries manufactured in Douvrin are supplied to Stellantis and installed in cars at locations in Germany, France and Italy.

Figure 5: Examples of supply relationships and supply chains in Europe, from raw material extraction to the manufacture of EVs.



Source:
Company announcements.
own illustration.

Since the launch of European initiatives, a growing and increasingly well-connected European battery ecosystem has emerged. However, recent years have also shown that this growth is not without setbacks. The production of high-quality lithium-ion cells on a gigawatt-hour scale has proven more difficult for new entrants than initially assumed. Additionally, stagnating or oversaturated markets are intensifying competitive pressure on manufacturers. Despite the current challenges, the European lithium-ion battery industry has great potential to occupy a relevant position in the global battery industry and make a decisive contribution to mitigating climate change.

Published by
VDI/VDE Innovation + Technik GmbH
Steinplatz 1
10623 Berlin

Authors
Aiko Bünting, Kai Giringer,
Matthias Trunk

Editorial
Stefan Wolf, Vanessa Kern,
Mira Maschke

Design
Anne-Sophie Piehl

Date
December 2025

Picture credits
presentationload.de/360 Line Icons- Business; davooda/Adobe-Stock; blinkblink/AdobeStock