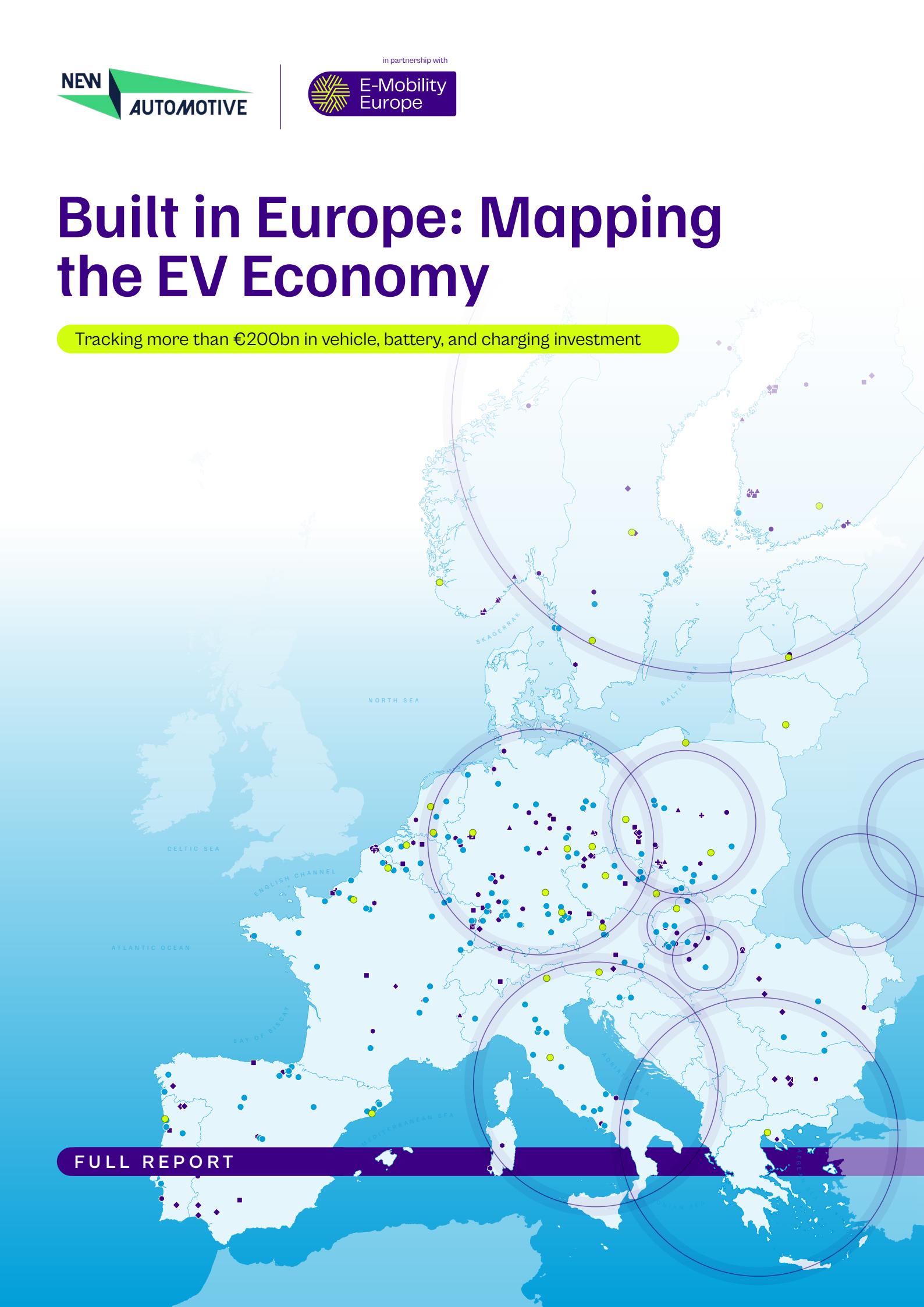
NEW AUTOMOTIVE

in partnership with E-Mobility Europe

Built in Europe: Mapping the EV Economy

Tracking more than €200bn in vehicle, battery, and charging investment



FULL REPORT

Key Figures

€200 billion

Committed investment across batteries, vehicles and public charging

150,000

New jobs created

€109 billion

Investment Committed to European Battery Manufacturing

€60 billion

Investment Committed to electric vehicle manufacturing

>1,000,000

Public charge points installed across Europe

About this Report

About New AutoMotive

New AutoMotive is an independent think tank accelerating the clean-energy transition in road transport, one of the largest sources of greenhouse gases and air pollution. Using data to tell compelling stories, it informs the public, supports industry, and shapes evidence-based policy across the UK and Europe.

New AutoMotive led the campaign for the UK's Zero Emission Vehicle mandate, now one of the world's most ambitious clean-transport policies, and continues to provide trusted analysis on the shift to electric mobility. Each month it publishes the Global Electric Vehicle Tracker, Electric Car Count, and Electric Van Count, which together offer the most up-to-date picture of EV uptake in the UK and internationally.

In Europe, New AutoMotive runs the European Battery Tracker, a first-of-its-kind project mapping investment, capacity, and employment across the battery supply chain. It has also produced a wide range of reports on the transition to electric vehicles and the policy frameworks needed to make it happen.

About E-Mobility Europe

E-Mobility Europe is the voice for Europe's collective electric vehicle ecosystem, from national EV associations, vehicle manufacturing, infrastructure, supply chain, fleet owners, and technology.

E-Mobility Europe advocates for Europe's successful transition to electric vehicles, in a way that benefits both the region's people and its industries.

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Executive Summary

At a time of energy insecurity and exposure to global oil markets, the electrification of transport has become both an industrial and strategic imperative for Europe. With a new generation of competitive EU-made electric vehicles reaching the market across all price segments in 2026, Europe is entering a decisive phase where demand, technology and industrial capacity are beginning to align.

But this progress is not yet secured. The key question is whether Europe can convert this momentum into a fully scaled, competitive industrial system, or risk seeing investment slow, fragment, or shift elsewhere.

This report provides a comprehensive overview of investment across Europe's EV ecosystem, quantifying capital committed across EV manufacturing, batteries, and charging infrastructure, mapping regional industrial hubs, and assessing the policy conditions required to ensure these investments are fully realised

Growing Europe's EV ecosystem at scale

Europe's EV ecosystem has already attracted almost €200 billion in committed investment, making it one of the largest industrial transformations underway in Europe, and a significant component of the global clean mobility transition.

This capital is being deployed across three interdependent systems, concentrating into distinct industrial hubs across Europe:

- **Battery supply chain:** €109 billion
- **EV manufacturing:** over €60 billion
- **Charging infrastructure:** €23 to 46 billion for public charging roll-out, plus more than €3.5 billion in charging equipment manufacturing (plus private charging roll-out, outside of this report's scope)

Together, these investments are already supporting **well over 100,000 jobs**, with **hundreds of thousands more expected by 2030** as supply chains deepen and industrial clusters scale. Established European players and international investors

The investor base reflects a **hybrid industrial model**. Established European players anchor automotive, energy and infrastructure deployment. International investors, particularly from Asia, are strongly present in batteries and increasingly in vehicles. Public funding plays a catalytic role, but the vast majority of capital is private.

Three Systems Being Built

Three interdependent industrial systems are being built in parallel, each with distinct roles in Europe's EV ecosystem.

1. EV Manufacturing (€60 billion)

EV manufacturing in Europe is undergoing a structural transformation, centred on the conversion of legacy automotive plants alongside selective new EV-only facilities, with increasing co-location of battery production to reduce costs and manage supply risk.

- **Industrial model:** Retooling of the existing automotive manufacturing base, complemented by new entrants
- **Actors:** European OEMs alongside international manufacturers
- **Geography:** Established automotive regions, expanding into Central and Eastern Europe

This anchors the transition within Europe's existing automotive manufacturing base.

2. Battery Supply Chain (€109 billion)

Batteries represent the largest share of capital, spanning mining, refining, materials, gigafactories and recycling.

Europe now produces batteries for roughly one in three EVs sold domestically, and announced capacity could meet future demand if fully utilised.

- **Industrial structure:** Combination of European players and international partnerships, with a significant share of currently operational capacity led by non-European manufacturers
- **Strengths:** Cell manufacturing and downstream integration
- **Gaps:** Precursors, cathodes and parts of the midstream value chain

This creates a rapidly scaling system, but one that still requires targeted policy support to reduce dependencies and strengthen resilience, with investments remaining capital-intensive, higher-risk, and not yet matched by sufficient EU-level scale-up finance.

3. Charging Infrastructure (€23 to 46 billion + €3.5 billion manufacturing)

Charging infrastructure combines large-scale public roll-out with a globally competitive manufacturing base.

- **Public roll-out (€23 to 46 billion):** Over one million public charge points have been deployed across Europe, with investment reaching every Member State and supporting local jobs in manufacturing and engineering, as well as the wider supply chain including logistics, component manufacturing, and services across every nation, region, and locality of the EU27+.
- **Manufacturing (>€3.5 billion):** Europe has established a globally leading position in high-power charging hardware, with companies across Italy, Germany and the Nordics supplying ultra-fast systems

Private charging is also a major part of this ecosystem, especially at home, at work and in fleet depots. It falls outside this report's quantified public charging analysis, but it is economically significant given the installed private base far exceeds the public network.

This makes charging infrastructure both a **pan-European economic driver** and an area of homegrown manufacturing excellence.

Regional Investment Clusters

Europe's e-mobility investment is concentrating into regional industrial clusters that combine batteries, vehicles, and infrastructure. These clusters are becoming the backbone of Europe's EV economy.

Germany is the industrial core, combining more than €20 billion in battery investment with the large-scale conversion of its automotive manufacturing base, across regions including Lower Saxony, Brandenburg, Saxony and Thuringia

***Regions**: Lower Saxony, Brandenburg, Saxony, Thuringia*
***Key investments**: >€20bn batteries plus major EV manufacturing conversion*
***Ecosystem**: PowerCo, Volkswagen, Tesla, CATL, BASF, Siemens*
***Focus**: Full value chain integration*

France has developed a highly concentrated EV ecosystem in Hauts-de-France, spanning Dunkirk, Douai and the surrounding corridor, where gigafactories, cathode materials and vehicle manufacturing are being co-located through coordinated public policy and multiple industrial partnerships

***Region**: Hauts-de-France and northern corridor*
***Key investments**: Multiple gigafactories and €1.5bn cathode materials*
***Ecosystem**: ACC, Verkor, AESC, Prologium, Orano, Renault*
***Focus**: Integrated battery and vehicle clusters*

Spain and the wider Iberian region function as Europe's export-oriented EV production platform, where large-scale legacy automotive plants are being electrified, battery investments are emerging with significant international participation, and charging infrastructure is scaling alongside strong energy sector involvement.

Regions: Catalonia (Barcelona, Martorell), Aragón (Zaragoza), Basque Country, Portugal (Matosinhos)
***Key investments**: Electrification of high-volume OEM plants, emerging gigafactory projects, >€2bn public charging support*
***Ecosystem**: Stellantis, Volkswagen, CATL (partnerships), Inobat, Wallbox, Iberdrola, Efacec*
***Focus**: Export-led manufacturing, energy-integrated infrastructure, international partnerships*

Central and Eastern Europe is emerging as a major export-oriented production base, combining battery manufacturing in Poland, integrated battery and EV investment in Hungary, legacy automotive strength and new EV capacity in Slovakia, and plant conversion across Romania and Czechia.

Poland (Lower Silesia, Silesia)

- ***Role:** Battery manufacturing and materials hub*
- ***Ecosystem:** LG Energy Solution, Umicore, Ekoenergetyka*
- ***Focus:** Large-scale cell production and components for EU export*

Hungary (Debrecen and wider corridor)

- ***Role:** Integrated battery and EV manufacturing cluster*
- ***Ecosystem:** CATL, BMW, BYD*
- ***Focus:** Co-location of gigafactories and vehicle assembly, strong international investment*

Slovakia (Bratislava, Košice region)

- ***Role:** Established automotive base upgrading to EVs, including greenfield EV plant*
- ***Ecosystem:** Volvo, Volkswagen, Kia*
- ***Focus:** Combination of legacy production strength and new EV-only investment*

The Nordics combine upstream materials, advanced EV manufacturing, and charging technology innovation, with Sweden anchoring vehicle production and Finland providing critical raw materials, alongside strong software and infrastructure capabilities.

Regions: Sweden, Finland, Norway, Denmark
Key investments: Mining, refining, EV manufacturing, batteries, charging technology
Ecosystem: Volvo, Polestar, Lyten, Terrafame, Keliber, Zaptec, CTEK, Monta
Focus: Integrated system spanning materials, vehicles, and advanced technologies

Italy plays a specialised role in Europe's EV ecosystem, with global strength in charging infrastructure manufacturing and power electronics in the north, but a slower transition of its automotive manufacturing base.

Regions: *Bolzano (South Tyrol), Tuscany, Northern Italy industrial belt*
Key investments: *Charging hardware manufacturing, power electronics*
Ecosystem: *Alpitronic, ABB E-mobility, Stellantis, KEBA (Austria-linked)*
Focus: *Charging hardware leadership, industrial components, partial automotive transition*

Benelux plays a distinct role as the digital and systems integration layer of Europe's EV ecosystem, providing software platforms, energy integration, and logistics that connect and optimise infrastructure and mobility services across borders.

Regions: *Netherlands, Belgium*
Key investments: *Charging software platforms, smart grid integration, logistics/trading hubs*
Ecosystem: *GreenFlux, Alfen, eNovates, Last Mile Solutions*
Focus: *Software, system integration, and cross-border optimisation*

Policy Context

The primary risk to Europe's EV ecosystem is no longer capital or technology. It is policy certainty and the effective delivery of industrial support.

Investments across the EV ecosystem depend on long-term demand visibility and high utilisation rates. These are capital-intensive assets with multi-decade lifetimes, and their viability depends on a stable and credible policy framework.

Policy certainty must be delivered consistently across the ecosystem, so that vehicles, batteries and infrastructure scale together. Misalignment risks underutilised assets, higher costs and delayed investment.

At the same time, different parts of the supply chain face distinct challenges. Battery materials and midstream production remain capital-intensive and higher-risk, requiring additional policy support and scale-up finance to compete globally, particularly with China. This support has not yet materialised at the required scale.

In vehicle manufacturing, OEMs are seeking flexibility to manage short-term market conditions. The challenge is to provide this without undermining the long-term demand signal that underpins e-mobility investment.

Even small policy changes can raise the cost of capital, delay projects or shift investment outside Europe, at a time when global competition is intensifying. The choice should not be between ambition and flexibility, but providing a stable-long-term direction with targeted support where real market gaps persist.

Policy recommendations

Europe is at a strategic turning point. The EV industrial base is being built. The capital has been committed. New jobs are being created. High-performing electric vehicles are reaching the market across all price segments.

Overall, Europe has mobilised close to €200 billion into its EV ecosystem, creating over 150,000 new jobs and with hundreds of thousands more in the pipeline. To ensure this investment delivers, policymakers must act decisively.

First, maintain a stable and credible demand signal for zero-emission vehicles through the CO_2 standards currently under review. These standards are the foundation of the investment case across vehicles, batteries and infrastructure.

Second, deliver targeted industrial policy and scale-up finance for batteries and materials. This requires dedicated EU-level instruments to support homegrown cell manufacturing and capital-intensive midstream segments such as cathodes, precursors and refining, where Europe faces structural gaps and strong international competition.

Third, prioritise investment in scalable electrification pathways for road transport. Policy and capital for mass-market road mobility should remain focused on electrification, where Europe has the clearest path to scale, cost competitiveness, and industrial leadership.

With the right policy framework, Europe can anchor this investment, secure its industrial base, and establish a globally competitive position in clean mobility. Without it, a significant share of this new economic value risks being delayed, underutilised, or realised outside Europe.

European Electric Vehicle Manufacturing

Capital is being deployed at scale to both retool legacy automotive plants and build new EV-only assembly lines, while anchoring batteries to electric platforms inside Europe's existing industrial base. What distinguishes this phase from earlier cycles is that investment is no longer concentrated only among new entrants. Europe's largest, most established OEMs are committing billions to convert internal combustion assets into long lived EV manufacturing sites, while new players are co-locating production inside the Single Market to secure regulatory access and proximity to demand.

As with batteries and charging, the central investment risk is no longer technology maturity or capital availability, but demand certainty. EV assembly plants are capital intensive assets with multi-decade lifetimes, financed on the assumption of rising zero-emission vehicle sales across Europe. Any weakening of vehicle emissions policy directly feeds through to utilisation assumptions, cost of capital, and ultimately to decisions on whether plants are expanded, delayed, or downsized

Headline figures & insights:

- **Total announced investment 2020 - 2025: €60 billion**

Sector Overview

Europe's EV manufacturing landscape spans everything from small, highly specialised producers to multi-billion euro industrial groups. Investment is flowing both into century old automotive companies retooling established plants and into newer manufacturers building EV-only operations from scratch, often side-by-side within the same regional clusters.

Electrification is therefore reshaping not only what Europe manufactures, but increasingly where production takes place. In several parts of the continent, EV assembly, battery production and component manufacturing are beginning to concentrate geographically, forming industrial ecosystems that behave more like integrated systems than isolated factories.

EV manufacturing investment differs fundamentally from historic automotive CAPEX. Instead of incremental model refreshes, OEMs are funding deep structural conversions:

battery pack assembly, power electronics integration, software validation centres, and re-training of workforces. Individual site investments routinely reach hundreds of millions to several billion euros, and are typically financed through a mix of corporate balance sheet CAPEX, long tenor debt, and targeted public support.

Crucially, EV manufacturing investment concentrates risk earlier in the project lifecycle. Large portions of capital are committed well ahead of sales ramp up, with returns dependent on the synchronisation of vehicle demand, battery availability, and downstream infrastructure[1]. This shifts risk onto OEM balance sheets, increasing exposure to timing mismatches between production readiness and market uptake. As a result, policy stability and demand visibility play a direct role in shaping financing costs, investment pacing, and final decisions.

Regional EV Manufacturing Hotspots

Northern France: integrated EV industrial clusters

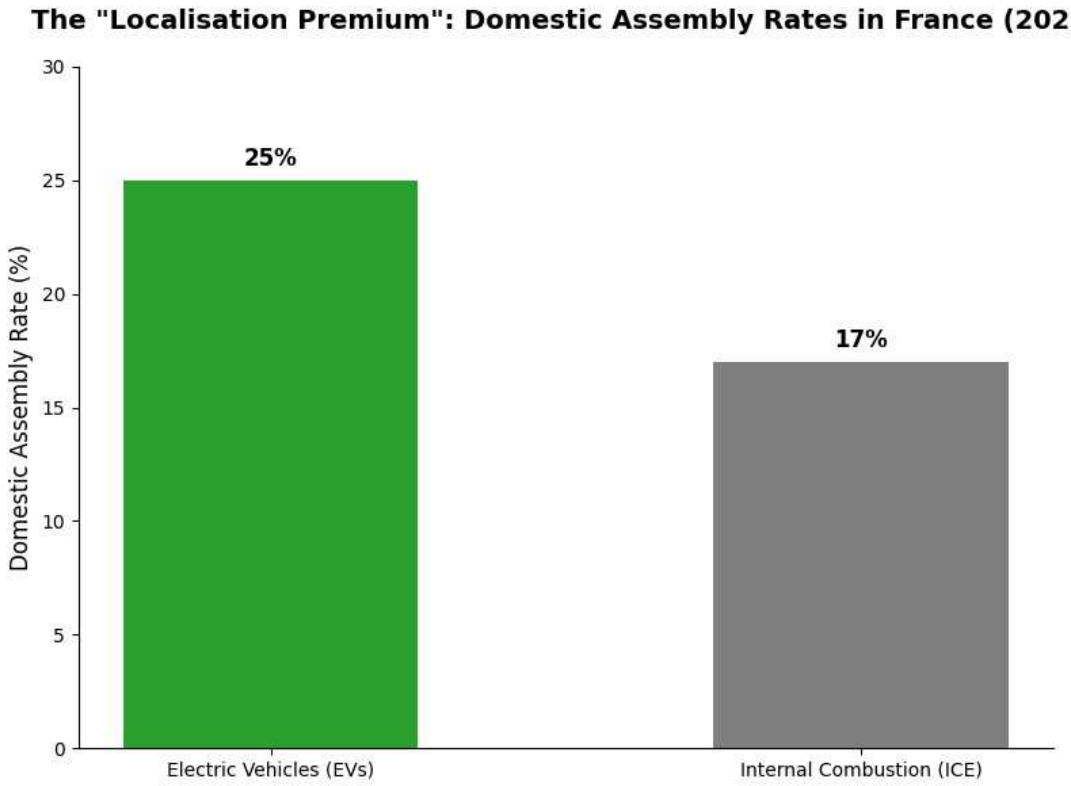
Northern France has emerged as one of Europe's most integrated EV manufacturing regions, combining vehicle assembly, component production and battery manufacturing within a relatively small geography.

Renault's ElectriCity cluster, centred on Douai, Maubeuge and Ruitz, illustrates this approach. The sites operate as a coordinated EV production system under Renault's Renaulution strategy, linking vehicle assembly with component manufacturing and nearby battery production. This geographic concentration reduces logistics costs and allows production volumes to scale more efficiently.

Renault's regional efforts are matched by Stellantis, which is anchoring its French transition with a massive €5.2 billion commitment to the Douvrin gigafactory and manufacturing hub, complemented by a €2 billion vehicle manufacturing investment in Mulhouse. Furthermore, Bolloré's €2.2 billion investment in solid-state battery infrastructure in Ergué-Gabéric illustrates that France's EV ecosystem spans multiple conglomerates and next-generation technologies.

Battery production is increasingly co-located with vehicle assembly. The AESC gigafactory in Douai, alongside other planned battery investments across northern France, forms part of a broader attempt to localise EV supply chains within the region.

1 WEVJ, December 2023, Investigating Investment Plans for Expanding Battery and Electric Vehicle Production in Europe. URL: https://www.mdpi.com/2032-6653/14/12/347



Early market signals suggest these localisation strategies are beginning to translate into production outcomes. In 2025, 25% of EVs sold in France were assembled domestically, compared with only 17% of ICE vehicles, reflecting the tighter industrial alignment between EV policy and manufacturing investment.

Germany: legacy transformation alongside greenfield investment

Germany's EV manufacturing transition combines large-scale conversion of legacy plants with one of Europe's most significant greenfield EV builds.

At Volkswagen Group's Zwickau facility, more than €1 billion has been invested to convert a former ICE plant into a dedicated EV production site manufacturing vehicles for multiple Volkswagen Group brands on shared electric platforms. Similar staged electrification investment is taking place at Emden and Hannover, where EV production is being integrated into long-established automotive facilities.

Alongside this legacy transformation sits a very different investment model. Tesla's Berlin-Brandenburg factory represents a greenfield EV-only plant built at scale within the EU. The facility has driven follow-on investment in suppliers, logistics and workforce development in the surrounding region.

This legacy transformation extends well beyond the Volkswagen Group. Across Germany, the largest domestic OEMs are fundamentally re-architecting their industrial footprint. Ford has completed a €1.85 billion ($2 billion) conversion of its Cologne facility into a dedicated Electric Vehicle Center. Mercedes-Benz has invested over €1 billion in its Bremen plant,

serving as the lead facility for its new electric platforms. Similarly, BMW is injecting over €1 billion into its Dingolfing plant to support Neue Klasse battery and vehicle production alongside its existing assembly lines.

Together, these investments illustrate how Germany's EV transition is unfolding along two parallel tracks: the conversion of existing industrial capacity and the emergence of new EV-specific manufacturing sites.

Spain: export-oriented EV manufacturing

Spain's EV manufacturing strategy is shaped less by domestic EV demand and more by its role as a high-volume export base serving the wider European market.

Capital is being deployed primarily to electrify existing high-volume plants and establish adjacent battery partnerships. At Stellantis's Zaragoza plant, one of Europe's highest-output facilities, a new €4.1 billion joint venture with CATL is establishing a 50 GWh LFP battery facility directly alongside vehicle assembly lines. Similarly, Volkswagen Group is executing a €3 billion electrification of its Martorell plant, alongside a €1.024 billion conversion at Landaben (Pamplona). Mercedes-Benz has also committed €1 billion to upgrade its Vitoria commercial van facility for electric production.

Similarly, Volkswagen Group's Martorell plant is undergoing electrification investment to support new electric models. These facilities benefit from Spain's scale, established workforce and export logistics infrastructure.

Because production is oriented toward EU-wide demand, Spain's EV manufacturing base remains closely tied to overall European market growth rather than domestic sales alone.

Central Europe: new investment geography

Electrification is also broadening the geography of European automotive manufacturing. EV platforms, with fewer mechanical components and more modular architectures, reduce the barriers that historically limited where vehicles could be produced.

Several Central and Eastern European countries are now attracting significant EV investment.

In Hungary, greenfield investments like BMW's developing EV-only assembly plant in Debrecen are being matched by the deep electrification of the country's legacy assets. Mercedes-Benz is deploying over €1.05 billion to expand its Kecskemét plant into a primary European hub for its Electric Only strategy. Simultaneously, Volkswagen Group has invested €301 million into its Audi Hungaria facility in Győr to manufacture next-generation electric motors, while BYD has invested €80 million to triple its electric bus production capacity in Komárom.

In Slovakia, Volvo Cars is investing roughly €1.2 billion in a new greenfield EV plant designed to support next-generation electric models. The project builds on the country's existing role as a high-volume automotive manufacturing hub.

Czechia has emerged as a primary hub for this transition, securing over €4.4 billion in investments. Hyundai's Nošovice plant, backed by over €2 billion, serves as a core European export base for electric models. Volkswagen Group is similarly executing a €1.2 billion expansion at its Kvasiny factory to transition toward full EV production. This complements adjacent regional investments, such as Volkswagen's €1 billion e-mobility conversion at its Bratislava site in Slovakia.

Elsewhere in the region, existing plants are also adapting. Ford's Craiova facility in Romania has received new investment to support EV production, while electrification investment around Stellantis's Tychy plant in Poland demonstrates how EV manufacturing can expand even where domestic EV demand remains modest.

These projects are overwhelmingly export-oriented, relying on EU-wide vehicle demand rather than national markets. But they illustrate a broader structural shift: electrification is expanding the number of regions able to host high-value automotive manufacturing within the Single Market.

The EV and gigafactory lineup why colocation matters

A clear shift in Europe's EV industrial strategy is that vehicle assembly and battery cell production are no longer being treated as separate bets. Manufacturers are increasingly trying to shorten the distance between where cars are built and where batteries are made, either by fully integrating cell production on the same site or by building gigafactories that are explicitly designed to supply a defined EV hub. Batteries are the single largest cost component in an EV, they are heavy to transport, and supply risk matters. Bringing cells and vehicles closer together gives investors more confidence that capacity will actually be used.

In practice, this integration takes several forms. In northern France, Renault Group's ElectriCity vehicle cluster sits alongside nearby gigafactories such as AESC in Douai, forming a regional system that behaves much like a single integrated site[2]. Stellantis entered a partnership with CATL to create a gigafactory in Zaragoza, where Stellantis manufacturers EVs[3]. In both cases, battery capacity is being developed with a known vehicle customer in mind, rather than as a stand-alone upstream investment.

2 Renault Group, June 2021, Renault Group places France at the heart of its industrial strategy for EV batteries. URL: https://media.renaultgroup.com/renault-group-places-france-at-the-heart-of-its-industrial-strategy-for-ev-batteries/

3 Stellantis, December 2024, Stellantis and CATL to Invest Up to €4.1 Billion in Joint Venture for Large-Scale LFP Battery Plant in Spain. URL: https://www.stellantis.com/en/news/press-releases/2024/december/stellantis-and-calt-to-invest-up-to-4-1-billion-in-joint-venture-for-large-scale-lfp-battery-plant-in-spain

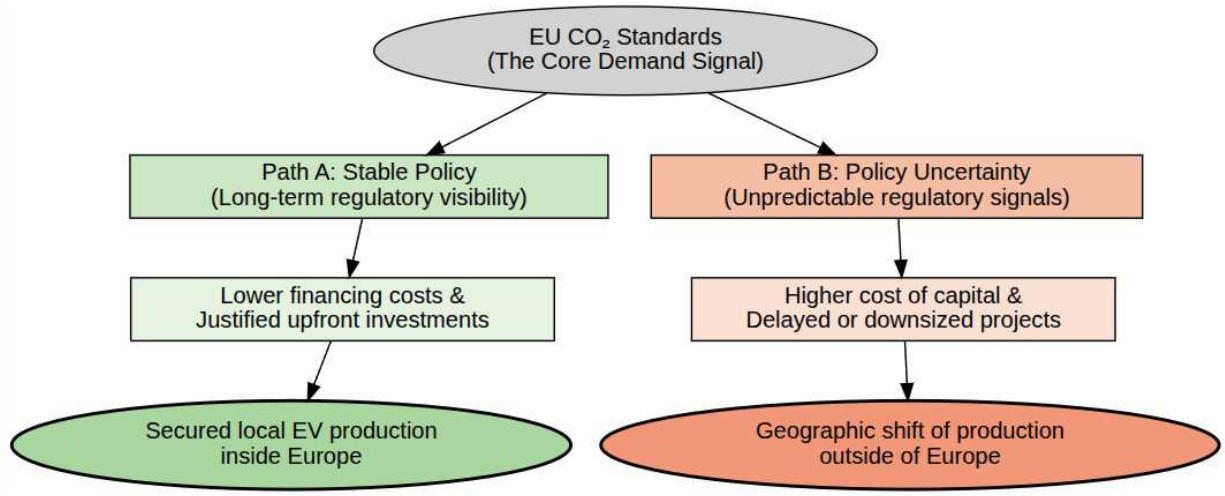
Beyond regional clustering, this co-location is now happening at the individual site level, with legacy plants building on-site battery assembly lines to de-risk production. For example, Ford's Valencia plant in Spain features a dedicated €188 million battery assembly facility, while VW's Martorell plant is integrating a battery assembly line with a 300,000-unit annual capacity directly into its converted footprint. In Central Europe, Hyundai's Nošovice plant operates a Battery System Assembly line capable of 450,000 units annually, and BMW's Leipzig plant manages the full process chain from cell coating to final assembly entirely on-site.

The effect is beginning to show up in market outcomes. In 2025, 25% of EVs sold in France were assembled in France, compared with 17% of ICE vehicles[4]. This is an early signal that localisation strategies are translating into real domestic production share, particularly in the electric segment where policy and industrial alignment are strongest.

For investors, this trend materially changes the risk profile of both EV plants and gigafactories. Colocation reduces utilisation risk by linking battery demand to known vehicle output, rather than relying on spot offtake or future contracts. It also lowers execution risk, as ramp up of cells and vehicles can be coordinated rather than managed across borders. As a result, integrated or tightly paired projects are easier to finance using long term debt, public backed loans and project finance structures, rather than relying purely on corporate balance sheets. In effect, EV manufacturing and battery production are increasingly being underwritten as a single industrial system.

The importance of EU regulation

The European EV manufacturing sector has attracted billions of capital across the continent, employing tens of thousands directly and even more indirectly.



4 Transport & Environment. February 2026, Marché automobile : le "Made in France" et l'électrique grands gagnants de 2025 URL: https://www.transportenvironment.org/te-france/articles/marche-automobile-le-made-in-france-et-lelectrique-grands-gagnants-de-2025

For EV manufacturing, Europe's CO_2 standards function as an implicit investment contract. They provide the long-term regulatory visibility required for OEMs and lenders to underwrite assets with 20–30 year lifetimes.

Stable policy lowers financing costs, supports workforce planning, and unlocks follow-on investment across the supply chain. By contrast, policy uncertainty increases the cost of capital and encourages manufacturers to delay or geographically reallocate production.

Some critics argue that the targets are set too high, forcing manufacturers not only to increase EV production but also to reduce ICE output in order to meet fleet average emissions requirements. Others contend that ultimately it is consumer demand, rather than regulatory targets, that determines how many EVs manufacturers can sell.

These dynamics are real, but they do not remove the central role of policy certainty in shaping investment decisions. Automotive manufacturing assets are planned years in advance, and companies must decide where to allocate production capacity before demand fully materialises. Clear regulatory trajectories help manufacturers justify large upfront investments in electrified production lines and associated supply chains.

Crucially, uncertainty does not halt electrification globally. It simply influences where production takes place. If regulatory signals weaken or become unpredictable, investment can shift to markets where demand visibility and policy frameworks provide greater certainty. In that case Europe risks importing vehicles rather than hosting the factories that produce them.

Crucially, this does not stop electrification globally. It simply determines whether Europe hosts the factories, or imports the vehicles instead.

The CO_2 standards are the key demand signal

The EU's CO_2 emission performance standards for cars and vans are the single most important demand signal for EV manufacturing. They provide the long-term regulatory visibility manufacturers and investors need to commit capital to new electric vehicle production lines

Critics argue that the targets may force manufacturers to cut ICE output to meet fleet averages, and that ultimately consumers determine how many EVs can be sold. While these factors shape short-term sales outcomes, manufacturing investment is planned years in advance and depends on clear expectations about the future direction of the market.

If the regulatory trajectory remains stable, manufacturers can justify locating EV production capacity in Europe. If it becomes uncertain, the utilisation assumptions underpinning billions in manufacturing investment become harder to sustain. In practice this does not stop electrification globally; it simply influences where the factories are built.

European Battery Manufacturing

Europe's battery supply chain has entered a decisive build-out phase. What began as a pipeline of announced projects is now translating into physical assets across mining, refining, precursor and active materials, cell manufacturing, and recycling. The last two years have seen ambitious new announcements contrasting with several high profile projects encountering difficulties. Many projects are seeing construction milestones being met, and early facilities moving into operation. Capital is increasingly committed on the basis of long-term demand from electric vehicles and energy storage.

At the same time, the sector has entered a more demanding industrial phase. Some high-profile projects have been cancelled or delayed, including Northvolt-linked developments and the NOVO Energy venture. Existing gigafactories have also faced ramp challenges: ACC's French facility is operational but has scaled more slowly than initially expected, affecting downstream vehicle timelines.

Any weakening of Europe's vehicle emissions framework risks undermining the demand trajectory that underpins long-term battery investment. At the same time, demand certainty must be matched by industrial competitiveness. European producers are scaling in a capital-intensive phase while facing intense global competition, and debates around local-content conditions remain ongoing. Distinct industrial hubs have emerged across Germany, Poland, Hungary and Spain, reflecting the diversity of countries set to benefit from this fledgling industry.

Europe is no longer starting from scratch. Around one in three electric cars sold in Europe today already contains a battery produced in Europe[5], and announced capacity would in principle be sufficient to meet total projected demand. The industry is building out at scale. The decisive question for the next phase is not whether capacity exists, but whether policy stability and competitiveness ensure that these assets are fully utilised.

Headline figures & insights

- **Total investment:** €109 billion
- **Total public funding for gigafactories:** €10 billion
- **Current Jobs**: 62,274
- **Job creation 2030:** 202,800 - 312,000
- **Regional hubs** are emerging in France, Spain, Germany, Poland and many more.

5 The ICCT, EV Transition Check, URL: https://theicct.org/wp-content/uploads/2025/09/ID-432-%E2%80%93-Transition-check-Report-final-v2.pdf

- **Strengths:** Downstream, cathodes
- **Improvement areas:** Precursors, anodes

Sector Overview

The battery supply chain represents a collection of diverse industries that are fueled by the uptake of EVs.

1. The investment question

Europe's battery supply chain has moved beyond venture-style clean tech and into heavy industrial infrastructure. Cell manufacturing, cathode materials, refining and recycling projects routinely require hundreds of millions to several billion euros in upfront capital, with construction timelines stretching five to seven years and assets expected to operate for decades. As a result, these projects are financed primarily through corporate balance-sheet CAPEX, long-tenor debt, public-backed loans, and state aid[6].

Gigafactories are overwhelmingly sponsored by OEMs or large industrial groups, midstream materials plants are backed by strategic investors with offtake exposure, and upstream and recycling assets increasingly rely on public finance institutions to absorb early risk. The capital base is mixed: European industrial groups remain central, but Chinese and South Korean manufacturers are also embedded through joint ventures and technology partnerships. Financing structures and required returns increasingly resemble those seen in renewables, grids, and industrial energy infrastructure, not early-stage technology sectors.

Battery projects sit upstream of vehicle manufacturing and are therefore highly sensitive to changes in expected EV uptake. Small changes in utilisation assumptions have outsized impacts on project economics. Gigafactory construction carries high fixed costs,[7] between €50-70m per GWh of capacity. When these plants run at reduced capacity, these costs are spread over fewer units - for example, if a plant runs at 60% capacity instead of 90%, the per-kWh product costs may spike by 20-25%. For investors, this translates into a high level of sensitivity to policy that feeds through into the ultimate demand for batteries.

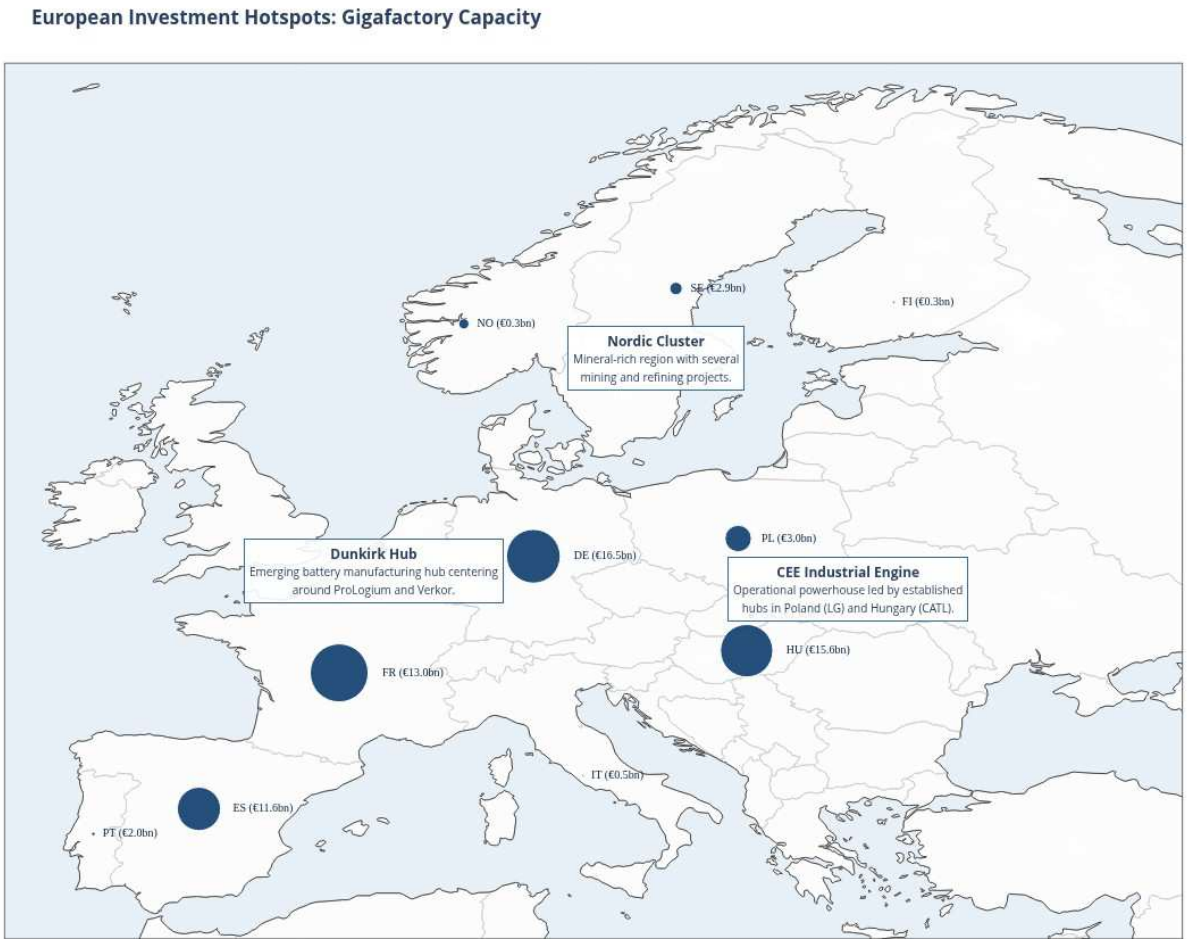
In recent months alone, the European Commission has committed approximately €1.8 billion in direct grant support to battery manufacturing and materials projects through EU-level funding[8] instruments, while the European Investment Bank has made up to €3 billion in additional loan financing available to crowd in private capital across the battery supply

6 Proximo, February 2024, Key funding considerations in gigafactory projects. URL: https://www.proximoinfra.com/articles/8343/key-funding-considerations-in-gigafactory-projects

7 McKinsey, January 2026, Battery 2035: Building new advantages

8 European Commission, December 2025, Communication from the Commission, Battery booster strategy. URL: https://webgate.ec.europa.eu/circabc-ewpp/d/d/workspace/SpacesStore/c1e2c753-e327-4d9f-b060-56ab4af2a754/download

chain[9]. However, this is insufficient in scale and design to meet the needs of scaling-up battery investments.



Investment across Europe's battery supply chain is concentrated in the following four interlinked segments.

Upstream materials and refining

Capital is flowing into lithium, nickel, graphite and copper projects across Europe, spanning both new extraction and downstream refining and conversion capacity. Many projects combine the two stages, reflecting a growing focus on building more of the battery materials value chain within Europe. These assets are strategically important, highly capital-intensive, and often supported by public finance due to their geopolitical significance.

9 European Investment Bank, December 2024, Commission and EIB announce new partnership to support investments in the European battery manufacturing value chain. URL: https://ec.europa.eu/commission/presscorner/detail/da/statement_24_6201

Upstream investment is concentrating on lithium refining capacity within Europe, reflecting its strategic importance and high capital intensity. Vulcan's project has attracted hundreds of millions of euros in committed capital, combining private investment with public support to de-risk this new refining infrastructure[10]. Capital is flowing here because refining assets offer long-lived returns and are critical to securing downstream gigafactory investment.

Midstream precursor and active materials

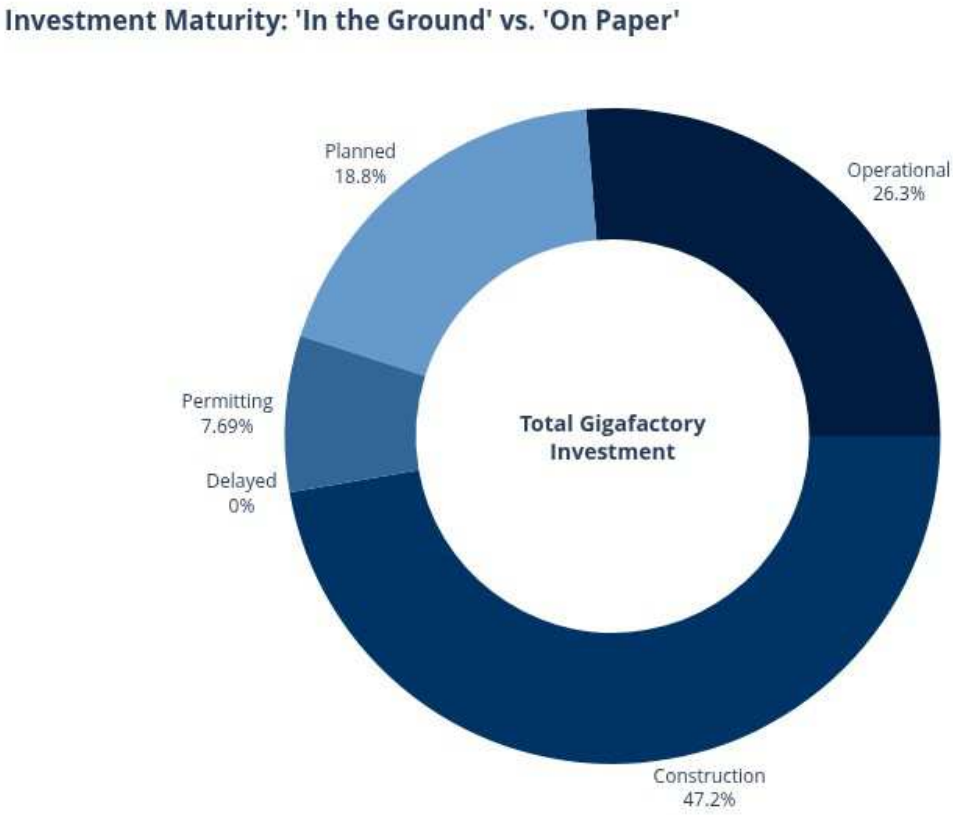
Cathode active material (CAM) and precursor (pCAM) facilities represent one of the fastest-growing investment segments. These plants sit at the centre of value creation, converting refined materials into battery-grade components and anchoring regional industrial clusters.

However, Europe remains more exposed at this stage of the value chain than at almost any other. Investment in CAM and pCAM production has lagged behind other regions, creating a structural gap between refining capacity and cell manufacturing ambitions. Recent project announcements across Europe suggest progress, but most involve significant Chinese participation. This stage of the value chain is particularly process-intensive and scale-dependent, and China's long-established industrial base in cathode materials means that much of the commercially proven know-how currently sits there.

Orano and XTC New Energy have committed around €1.5 billion in capital to establish integrated pCAM and CAM plants on a single industrial site in Dunkirk, France[11]. This midstream investment targets one of the critical value-chain stages identified by European industry and policymakers as essential to reducing reliance on imported battery materials and supporting regional gigafactory deployment.

10 European Investment Bank, December 2025, Germany: Vulcan Energy secures €250 million EIB financing for landmark lithium project. URL: https://www.eib.org/en/press/all/2025-486-vulcan-energy-secures-eur250-million-eib-financing-for-landmark-lithium-project-in-germany

11 Orano, May 2023, Orano and XTC New Energy join forces to manufacture battery components for electric vehicles in France URL: https://www.orano.group/en/news/news-group/2023/may/orano-and-xtc-new-energy-join-forces-to-manufacture-battery-components-for-electric-vehicles-in-france



Cell manufacturing and gigafactories

Gigafactories account for the largest share of committed capital. These projects are typically underwritten by OEM offtake agreements and supported by a mix of corporate CAPEX and public funding. Once built, they become long-lived assets whose viability depends on consistent vehicle demand.

In Europe, investment in cell manufacturing reflects a mixed industrial model. Asian firms, particularly Chinese and South Korean manufacturers, alongside some US investment, such as that from Lyten make up a large amount of investment. At the same time, Europe has three homegrown producers working to scale up domestic cell production, aiming to establish indigenous manufacturing capability and reduce long-term reliance on foreign technology providers.

PowerCo SE's Salzgitter gigafactory is a cornerstone of Volkswagen Group's strategy to internalise battery cell production, with Volkswagen's creation of PowerCo in 2022 backed

by a targeted €20 billion battery investment programme through 2030 to build European cell capacity and reduce reliance on external suppliers[12]

Verkor - Dunkirk gigafactory (France)

Verkor's Dunkirk gigafactory is a key homegrown project scaling Europe's domestic cell production. Supported by private investment and French public funding, the facility aims to supply high-performance battery cells to European OEMs, strengthening local manufacturing capacity.

Automotive Cells Company (ACC) - European gigafactory network

Automotive Cells Company is developing a network of gigafactories across Europe, combining corporate investment and state support to deliver competitive domestic cell production. The project aims to reinforce Europe's technological base in advanced lithium-ion cells and reduce reliance on foreign suppliers.

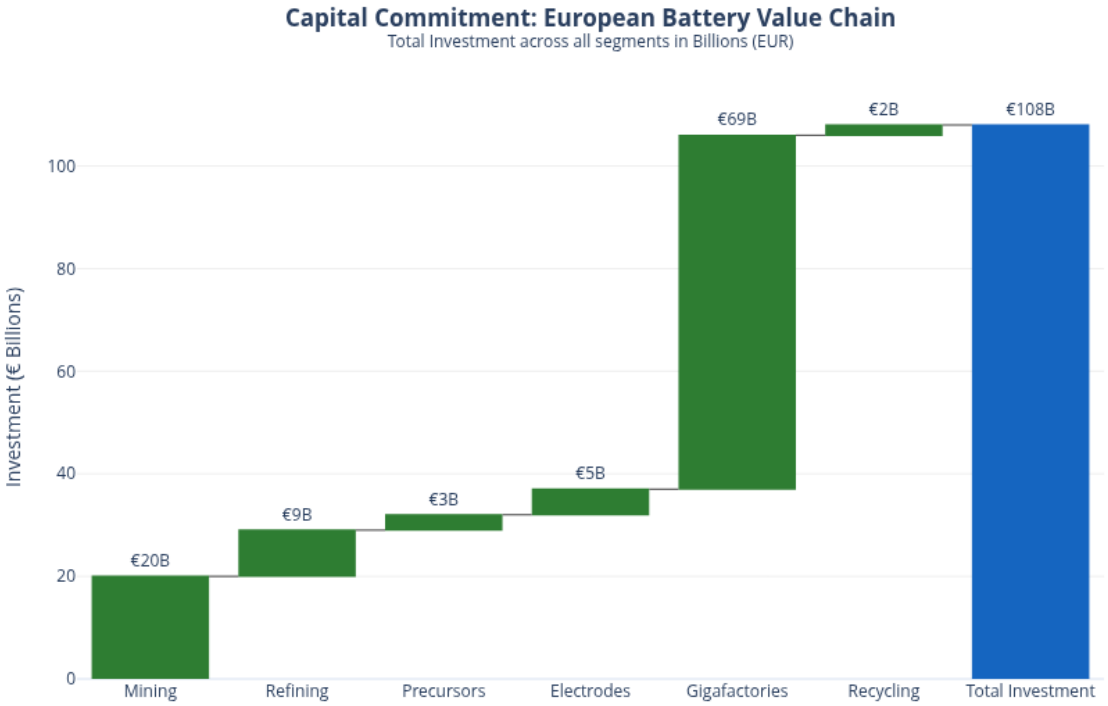
Recycling

After years of limited activity, Europe's battery recycling sector is beginning to scale, with investment emerging across both black mass production and downstream hydrometallurgical processing. Projects are being developed by a mix of European recycling specialists, battery manufacturers and international materials companies. Many facilities are planned alongside gigafactories or materials plants, reflecting a shift from small pilot operations toward industrial-scale circular supply chains.

Hydrovolt's Fredrikstad plant represents one of Europe's earliest examples of recycling attracting infrastructure-scale capital, with around €8.8 million invested to move battery recycling beyond pilot operations and into commercial scale[13]. The company is owned by Hydro and Volvo Cars, illustrating how capital is being deployed by established industrial players to secure future access to recycled battery materials rather than relying on venture-backed growth models. Investment in facilities like Fredrikstad is driven by the need to lock in feedstock, control material recovery costs, and integrate recycling into the wider European battery value chain.

12 Reuters, July 2022, Volkswagen, partners to invest $20 bln in car battery business URL: https://www.reuters.com/business/autos-transportation/volkswagen-partners-invest-over-20-bln-car-battery-business-2022-07-07/

13 Hydro, Hydro and Northvolt launch joint venture to enable electric vehicle battery recycling in Norway URL: https://www.hydro.com/en/global/media/news/2020/hydro-and-northvolt-launch-joint-venture-to-enable-electric-vehicle-battery-recycling-in-norway/



Investment Area	Investment (€)
Mining	20 billion
Refining	9 billion
Precursors	3 billion
Anodes/Cathodes	5 billion
Gigafactories	69 billion
Recycling	2 billion

Developments in 2025

Recent high-profile delays and project setbacks across Europe's battery supply chain have dented investor confidence and raised questions about whether the region is building too much capacity, too quickly. This reading misses the core issue.

The challenge is not excess capacity, but incomplete capacity which is taking longer to ramp up than planned. While cell manufacturing has expanded rapidly, investment in cathode active materials, precursors, and recycling has lagged behind. These midstream and circular segments are now the critical bottlenecks limiting the resilience and scalability of Europe's battery ecosystem.

Battery projects are only as viable as their weakest links. Without secure access to cathodes, precursors, and recycled materials, gigafactories face higher costs, greater exposure to global supply shocks, and increased execution risk. Several recent project difficulties reflect these structural gaps rather than a collapse in underlying demand.

Europe's long-term need for battery capacity remains intact, driven by vehicle electrification and energy storage. What has changed is investor tolerance for risk. Capital is increasingly selective, favouring integrated projects with secure offtake and stable policy backing.

Creating a safe investment environment is therefore essential. Targeted support for midstream and recycling capacity, alongside regulatory stability, will be critical to unlocking the full value of the capacity already being built. Recent setbacks should be seen as growing pains in the construction of a new industrial system, not a signal to slow the transition.

Regional Hotspots

Manufacturing and investment are not evenly distributed across Europe. Instead, distinct clusters have emerged where policy certainty, industrial capability, and demand intersect.

Germany has become the industrial core of Europe's battery ecosystem, with more than €20 billion[14] committed across refining, materials, cell manufacturing and recycling. Investment is anchored by domestic OEM demand and supported by substantial public funding, creating one of the most vertically integrated battery supply chains in the world.

Key projects:

- Mining & refining: Vulcan Energy Resources, AMG Lithium, Rock Tech Lithium
- Cathode materials: BASF (Schwarzheide), Umicore
- Cell manufacturing: Tesla (Gigafactory Berlin), CATL (Erfurt)

14 New Automotive analysis, see methodology

- Recycling: Aurubis, Redux Recycling

Poland has emerged as Europe's leading battery manufacturing exporter, attracting 7 billion[15] in investment despite relatively modest domestic EV uptake. Its success has been driven by EU-wide demand certainty, allowing manufacturers to invest on the assumption that vehicles will be sold elsewhere in Europe

Key projects:

- Cells: LG Energy Solution (Wrocław)
- Cathode materials: Umicore (Nysa)
- Separators: SK IE Technology
- Recycling: Elemental Strategic Metals

Finland is attracting capital into the upstream core of Europe's battery economy, where investors are backing assets that control raw material supply rather than downstream margin alone. Projects such as Terrafame's integrated nickel, cobalt and battery-chemicals complex in Sotkamo[16] and Sibanye Stillwater's Keliber lithium mining and hydroxide refining project[17] illustrate how capital is being deployed to lock in long-term access to critical minerals at scale.

Key projects:

- Mining & refining: Terrafame (nickel & cobalt chemicals), Sibanye-Stillwater Keliber (lithium)
- Precursor materials: CNGR Finland
- Anodes: BTR New Material Group

France has emerged as a midstream and cell manufacturing anchor, with the Hauts-de-France Battery Valley concentrating investment with six gigafactories alone in close proximity[18]. This clustering effect is drawing capital into co-located assets that benefit from shared infrastructure, skilled labour, and proximity to major European automotive OEMs.

Key projects:

Cells: Automotive Cells Company (Stellantis-TotalEnergies-Mercedes), Envision AESC, Verkor, ProLogium

15 New Automotive analysis, see methodology

16 Terrafame, Battery Chemicals, URL: https://www.terrafame.com/offering/battery-chemicals.html

17 Sibanye Stillwater, Keliber Lithium project. URL: https://www.sibanyestillwater.com/business/europe/keliber

18 New AutoMotive, August 2025, Hauts-de-France Gigafactory Dominance. URL: https://storage.googleapis.com/public_download_assets/reports/battery_tracker/01102025%20EBT%20hauts-de-France%20Case%20Study%20-%20English.pdf

Cathode materials: Orano – XTC New Energy Materials JV

Together, these clusters demonstrate that Europe has not merely imported battery manufacturing, but built a domestic industrial base capable of supporting the transition at scale.

The Role of EU Regulation

The European EV battery sector has attracted billions of capital across the continent, employing tens of thousands directly and even more indirectly.

The Link Between Certainty and Cost of Capital

Europe's battery supply chain has attracted tens of billions of euros in private capital, employing tens of thousands directly and many more indirectly. Targeted public support remains important, particularly during the scale-up phase of cell manufacturing where European producers face higher costs than established Chinese competitors.

That capital, however, requires a specific fuel: regulatory certainty. Europe's car market will naturally prefer locally sourced batteries because the combination of strict carbon footprint regulations, 'Rules of Origin' tariff benefits, and the need for supply chain security makes local production the only way to remain both legally compliant and legally competitive. It is therefore vital that investors can have confidence that the European EV market will continue to grow.

Battery manufacturing is funded primarily through long-term debt and balance-sheet investment, not speculative equity. As a result, policy stability is a direct lever on the cost of capital.

- **Stable policy** lowers risk premiums, reduces financing costs, and supports investment at scale.
- **Policy uncertainty** raises the cost of capital, tightens lending conditions, and undermines project economics.

The CO_2 standards are the key demand signal

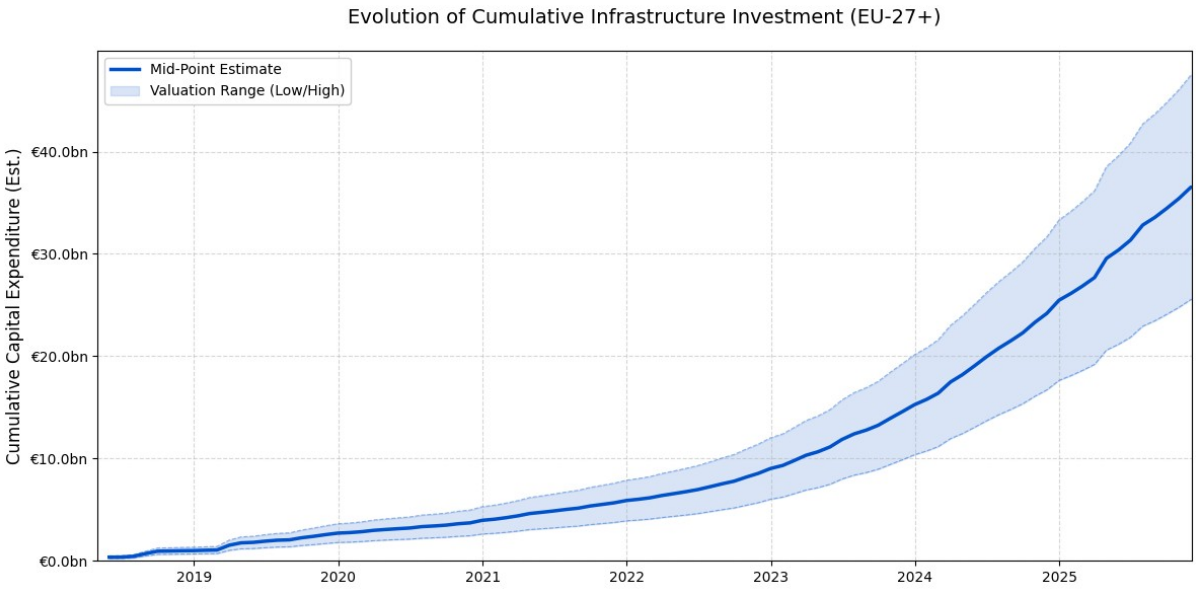
The EU's CO_2 emission performance standards for cars and vans are the single most important demand signal for the battery supply chain. They provide the certainty required to underwrite gigafactories, materials plants, and recycling infrastructure with asset lives extending well beyond 2035.

If carmakers are required to sell zero-emission vehicles, demand for batteries is guaranteed. If that requirement is weakened, the utilisation models underpinning billions in committed investment are put at risk.

Recent debate around amending or reopening EU vehicle regulations therefore carries consequences far beyond the automotive sector. Instead, battery producers need a combination of a stable regulatory framework for transport electrification towards 2035, and more decisive EU industrial policy measures for supporting their scale-up and ensuring local demand.

European Public Charging Infrastructure

The European EV charging sector has transitioned from a venture-capital-driven startup ecosystem into a critical industrial pillar. The 2024-2026 period marks the onset of an industrialisation phase, characterised by heavy infrastructure debt, consolidation, and the dominance of ultra-fast charging hubs.



Headline figures & insights:

- **Total Investment in extant EU27+ public charge points:** €23bn - 46bn
- **Total charge point manufacturing investment 2024-2026**: >€3.5 Billion
- **Job creation**: 18,000-22,000 direct manufacturing and engineering jobs, with a further 55,000 jobs across the supply chain
- **Infrastructure growth:** Total charge points surpassed 1,000,000 in 2025. DC charge points have grown from 15,000 charge points at the start of 2021 to over 186,000 charge points by Q4 2025.
- **Maturing sector:** A shift towards debt finance indicates a sector that is developing into a standard 'utility' business model with predictable returns rather than start-up-style equity investment.
- **Regional manufacturing hubs** are emerging in France, Spain and Germany.

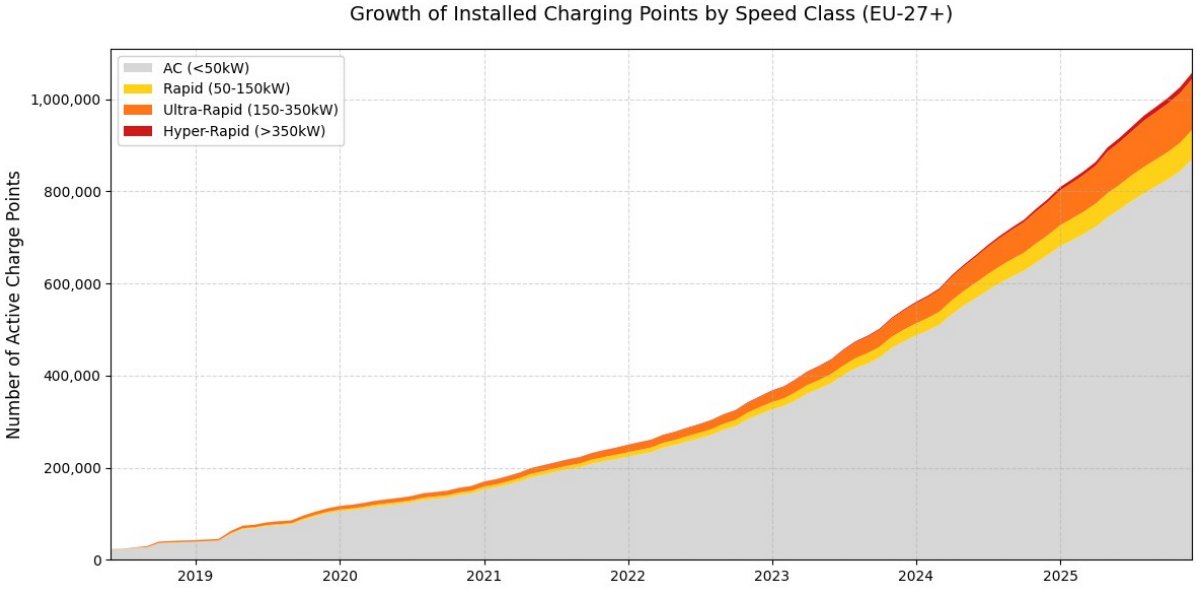
Sector Overview

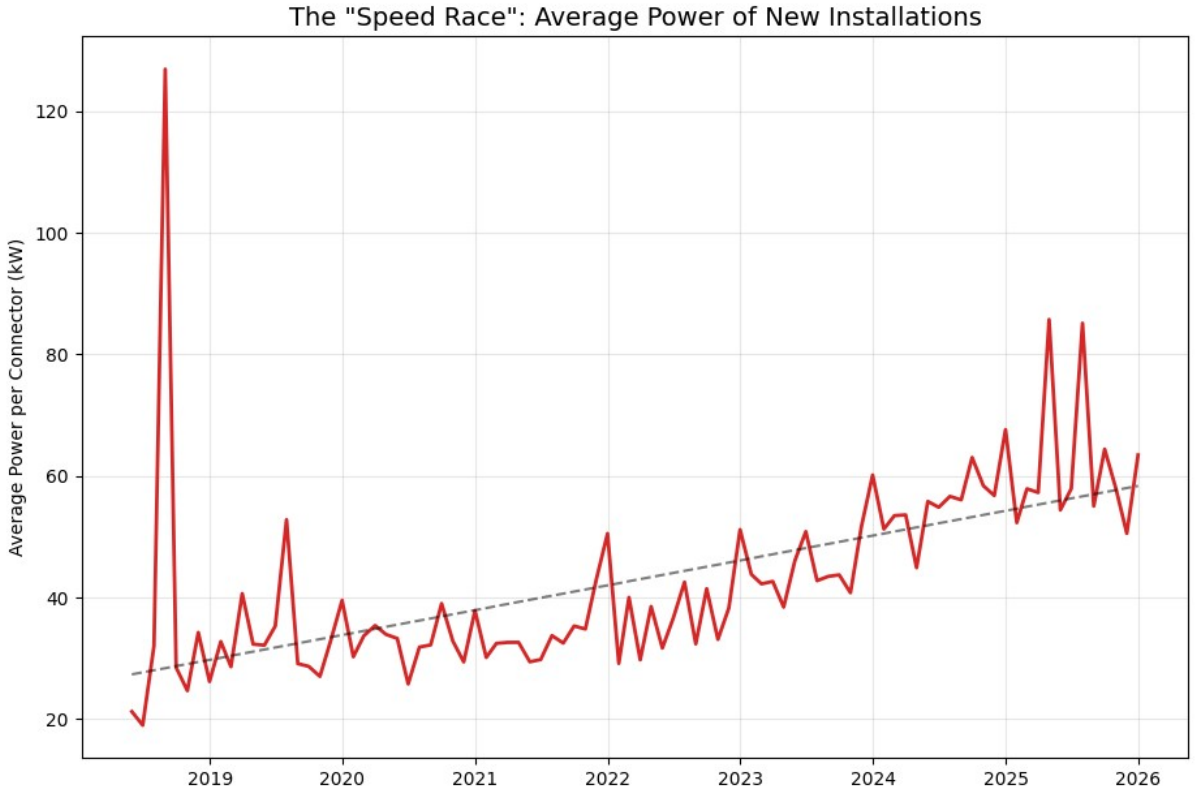
Recent years have seen the EV charging sector mature. No longer defined by speculative equity-funded "land grabs" or fragmented pilot schemes, the industry has matured into a stable, capital-intensive infrastructure market. This phase is driven by three positive structural shifts.

The amount of capital deployed across the region to deliver just over 1,000,000 charge points has been rapidly accelerating. Despite incorrect reports of a slow-down in EV uptake, charge points have continued to see deployment growing rapidly across the region.

Debt instruments are playing an increasing role in financing, indicating a sector that is maturing, and moving away from high risk venture capital-style investments and towards more predictable and secure utility-style business models. This transition is vital to continue to deliver public charging at competitive costs for European motorists.

Quantity and quality of public chargepoints





While headline deployment numbers show robust growth, the quality of infrastructure has improved dramatically. The market has standardised around the "Mega-Hub" model - multi-bay, ultra-fast charging locations situated on high-traffic corridors (TEN-T).

End of Year	AC (<50kW)	Fast DC (50-150kW)	Ultra-Fast (150-350kW)	Hyper-Fast L2 (>350kW)
2021	223,629	9,714	15,248	887
2023	486,714	26,212	43,671	2,789
2025	869,370	63,183	110,810	13,459

2.3. A Sovereign Industrial Backbone

Crucially, this infrastructure boom is supported by a robust domestic manufacturing base. Europe has not merely imported this revolution; it has built it. Distinct industrial clusters, from the "Battery Valley" in Iberia to the high-tech hubs of the Nordics, are producing the hardware and software powering this transition. This localisation of the supply chain mitigates geopolitical risk and anchors the economic benefits (over €3.5bn in direct investment) within the European Single Market.

Case Study - Software as a control layer

As Europe's EV charging networks scale, software is increasingly recognised as the digital backbone that underpins investment in this sector[19]. Charging management systems sit behind every public and workplace charger, connecting assets to operators and users while controlling uptime, pricing, authentication, billing, and maintenance. Industry providers increasingly describe this software layer not as an add-on, but as the system that *runs* the network, allowing operators to remotely monitor, adjust, and monetise chargers across multiple locations. As charging hardware becomes more standardised, this control layer is where operational value and strategic differentiation now sit.

This software layer plays a decisive role in planning and de-risking investment. Data-driven charging platforms integrate charger performance data, traffic flows, grid capacity, and demand forecasts to guide where new sites are deployed and what charger mix is installed. By underpinning the hardware with centralised control, software enables higher utilisation rates, faster fault resolution, and more efficient energy use, directly improving site-level economics. In practice, this reduces the risk of underused or stranded assets and lowers operating costs over time. For investors, this framing matters: software is not simply supporting infrastructure, it is actively protecting returns on capital deployed into physical chargers.

This role as a control layer is increasingly reflected in investment activity. Software-focused charging companies such as Monta[20] and Virta[21] have attracted substantial growth capital precisely because their platforms underpin and control large, multi-country charging networks. Most recently, AMPECO secured a €26 million Series B round to expand its global charging management platform, reinforcing investor appetite for software models that sit behind and orchestrate multi-country networks[22].

Investors view these businesses as scalable infrastructure enablers rather than pure mobility startups, with revenues tied to network growth, utilisation, and long-term

19 gridX, January 2024, Charge point management system meets smart charging. URL: https://www.gridx.ai/knowledge/charge-point-management-system-meets-smart-charging

20 Reuters, January 2024, Danish EV charger software provider Monta raises $87mln. URL: https://www.reuters.com/business/autos-transportation/danish-ev-charger-software-provider-monta-raises-87-mln-2024-01-23/

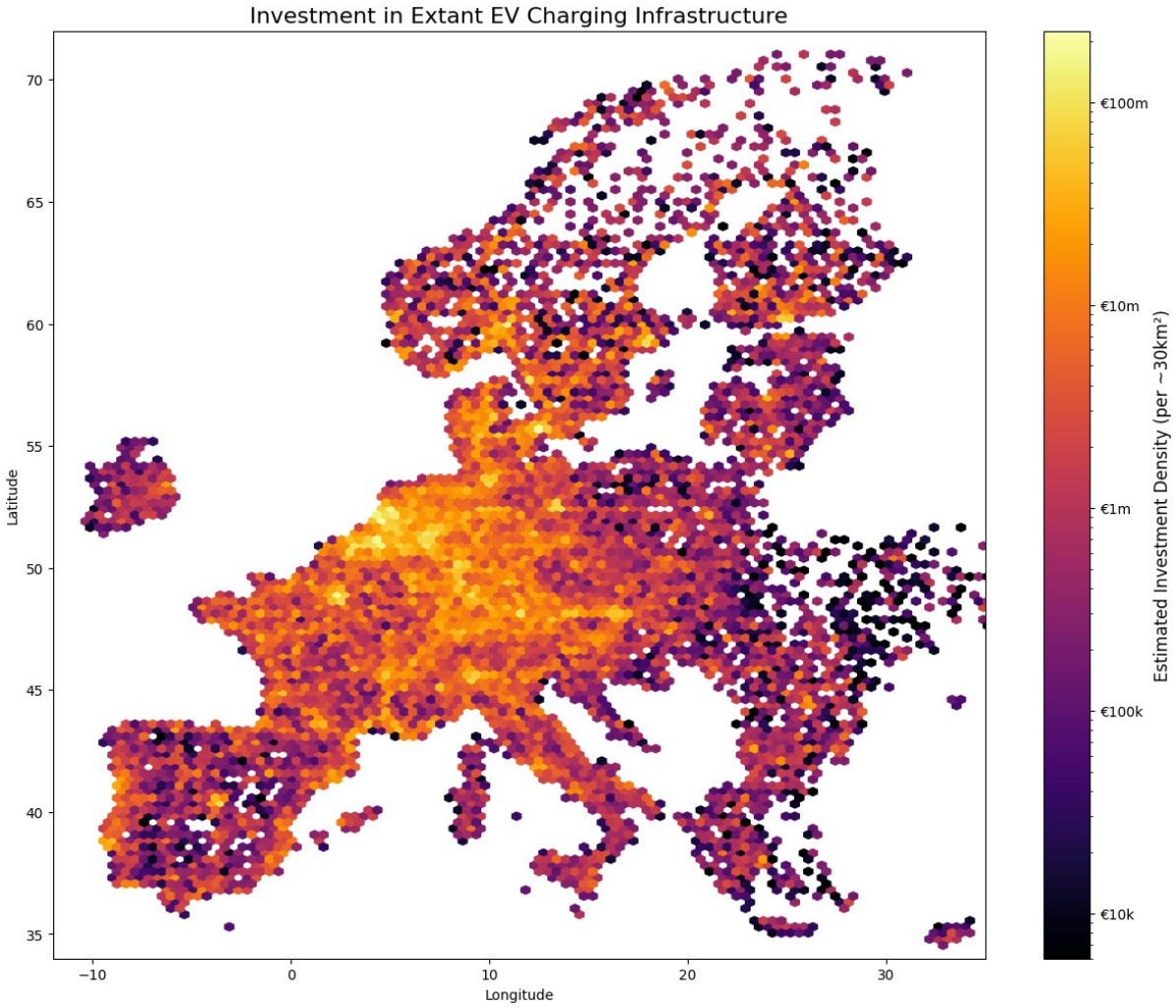
21 Virta, April 2023, Virta closes €85M funding to support growth in Europe and Asia-Pacific. URL: https://www.virta.global/news/virta-closes-85m-funding-to-support-growth-in-europe-and-asia-pacific

22 AMPECO, February 2023, AMPECO Secures $26 Million in Series B Funding to Accelerate Global EV Charging Network**s.** URL: https://www.ampeco.com/news/ampeco-secures-26-million-series-b/

operation rather than one-off hardware sales. As a result, capital is flowing not only into chargers themselves, but into the software systems that allow those chargers to be planned efficiently, operated reliably, and scaled across Europe. In a capital-intensive sector dependent on long-term utilisation, software has become a core part of the charging infrastructure investment case.

Software Company	Location	Country	Economic Status & Recent Developments
Monta	Copenhagen	Denmark	Venture-backed SaaS platform scaling across European multi-country CPO networks.
Virta	Helsinki	Finland	€85m growth funding; expanding transaction-linked infrastructure software revenues.
AMPECO	Sofia	Bulgaria	$26m Series B; scaling white-label backend platform globally.
GreenFlux	Amsterdam	Netherlands	Acquired by DKV; integrated into pan-European fleet charging platform.
Hubject	Berlin	Germany	OEM-backed roaming platform monetising cross-border charging transactions.

Gireve	Paris	France	Clearinghouse platform generating recurring revenues from roaming services.
has.to.be	Radstadt	Austria	Acquired by Shell; backend platform supporting vertically integrated networks.
SMART/LAB	Aachen	Germany	Utility-backed software platform embedded in municipal charging ecosystems.
Plugsufing	Berlin	Germany	Acquired by FLEETCOR; transaction-driven revenues from fleet electrification.
Chargemap	Strasbourg	France	Roaming platform monetising driver access and transaction margins.
Electromap	Barcelona	Spain	Iberian eMSP platform expanding transaction-based revenue model.



Regional Hotspots

Investment in public charging infrastructure is taking place across Europe. Naturally the most densely populated parts of the continent are seeing the most charge points being installed, but importantly all parts of the region are seeing new sites and connectors being installed, creating jobs in every nation, region and locality of the EU27+. Although this report focuses on public infrastructure, private charging is also taking place across all markets. This is particularly visible in Norway, where there is approximately one private charger per BEV[23].

Manufacturing of charge points and their components is more clustered around regional hubs, and this section provides an overview of those hubs.

Portugal, Spain and France

23Roland Berger, August 2024, EV Charging Index: Expert insight from Norway. URL: https://www.rolandberger.com/en/Insights/Publications/EV-Charging-Index-Expert-insight-from-Norway-2024.html

This region has emerged as a powerhouse for both manufacturing and deployment, fuelled by over €2 billion in combined public subsidies (Spain's €1.2bn *MOVES III* and France's ~€900m *Advenir/France 2030* programmes[24]). Barcelona-based Wallbox anchors the residential segment, while French champion Driveco recently secured €250m in equity to expand its network[25]. In Portugal, Efacec continues to drive fast-charging infrastructure, supported by the broader Iberian push which includes a €1bn joint venture between Iberdrola and BP[26].

DACH & Poland

Germany remains the heavyweight in terms of public capital, with the €6.3bn *Deutschlandnetz* tender dwarfing other national schemes[27]. This funding underpins a manufacturing belt stretching from Siemens in Germany to Ekoenergetyka in Poland, focusing on heavy-duty and grid-scale solutions. The region is also home to Alpitronic (Italy/Austria border), whose "Hyperchargers" have become the de-facto standard for high-power hubs. The €700m green loan secured by Ionity further cements this region's status as the logistical heart of European charging[28].

The Nordic Innovation Hub

While lower in absolute public subsidy volume compared to the south, the Nordics lead in technical innovation and market penetration. Companies like Kempower (Finland), Zaptec (Norway), and CTEK (Sweden) define this cluster, specialising in smart charging, V2G, and high-reliability hardware for harsh climates. The region serves as the primary testbed for advanced grid integration technologies before they roll out to the wider continent.

The Role of EU Regulation

The European EV charging sector has attracted billions of capital to install plugs across the continent, employing tens of thousands directly and even more indirectly. Private capital is now the dominant engine of growth, but it requires a specific fuel: regulatory certainty.

Certainty and cost of capital

24EVCandi, May 2025, National infrastructure initiatives help drive rising European EV sales. URL: https://www.evcandi.com/feature/national-infrastructure-initiatives-help-drive-rising-european-ev-sales

25Driveco, May 2023, Driveco raises 250 million euros. URL: https://driveco.com/en/driveco-raises-250-million-euros/

26Iberdrola, December 2023, Iberdrola and bp pulse launch their fast and ultrafast charging joint venture in Spain and Portugal. URL: https://www.investinspain.org/content/icex-invest/en/noticias-main/2023/bp-iberdrola.html

27Watson Farley & Williams, April 2024, The Future of EV Charging: Spotlight on Germany. URL: https://www.wfw.com/articles/the-future-of-ev-charging-spotlight-on-germany/

28Autovista24, November 2021, €700 million investment in Ionity's rapid-charging network. URL: https://autovista24.autovistagroup.com/news/ionity-receives-700-million-investment-to-expand-ev-charging-network/

Unlike venture capital, which tolerates high risk for high returns, the infrastructure debt now funding the rollout requires predictable, long-term cash flows. Policy stability is therefore a direct lever on the cost of capital.

- **Stable Policy** lowers the risk premium on debt, which in turn reduces interest rates for CPOs and ultimately lowers the break-even utilisation rate.
- **Uncertain Policy** increases the risk premium, raises the cost of debt, and ultimately forces CPOs to pass these costs on to consumers via higher charging prices.

The most effective way to lower charging costs for EU citizens is not more subsidies, but ironclad adherence to the transition timeline.

This dynamic was reinforced by industry evidence. In our survey of EU charging companies and investors, regulatory certainty emerged as the single most important factor shaping investment decisions, ranking ahead of access to subsidies or public co-funding. A majority of respondents reported that changes or uncertainty in EU vehicle policy directly increase their cost of capital, either through higher interest rates or tighter lending conditions.

The CO_2 standards are the key demand signal

While subsidies like Deutschlandnetz or AFIF help fill geographical gaps, the primary business case for charging infrastructure is vehicle volume. The EU's CO_2 emission performance standards for cars are the single most important policy instrument for the infrastructure sector. They provide the "demand signal" that allows investors to underwrite 15-year infrastructure assets.

If carmakers are required to sell EVs, the demand for charging is guaranteed. Without this mandate, the utilisation models underpinning billions in debt financing collapse.

Brussels' decision in December 2025 to amend the CO2 regulations risks breaking the "investment contract" the industry had with the policy makers. It risks stalling infrastructure deployment but also jeopardises the €3.5 billion manufacturing base with its ~22,000 jobs that have been established on the premise of this transition, not to mention the tens of billions of capital that has been put into existing charge points. A rollback now would risk stranding the private capital that has already been deployed in good faith.

Survey responses underline the central role of vehicle regulation in underpinning charging demand. When asked what policy most directly supports the investment case for new charging infrastructure, respondents overwhelmingly pointed to the EU's CO_2 emission performance standards for cars. Several noted that these standards are essential for underwriting long-lived assets, with one respondent describing them as “the only policy that guarantees vehicles will actually arrive to use the infrastructure we are financing.”

Conclusion

Europe's transition to electric mobility has evolved from a nascent technology sector into a massive, €200 billion industrial transformation. Across the continent, capital is being aggressively deployed into retooling legacy automotive plants, scaling a domestic battery supply chain, and rolling out a highly advanced, mega-hub charging infrastructure. This coordinated investment is already supporting well over 100,000 jobs, with hundreds of thousands more expected by 2030, establishing a globally competitive clean mobility ecosystem within the Single Market.

However, the continued success of this transition hinges entirely on regulatory stability. The primary risk to this ecosystem is no longer capital availability or technological maturity, but policy uncertainty. The EU's CO_2 emission performance standards for cars and vans act as the foundational investment contract for the entire industry. Weakening these targets risks raising the cost of capital, delaying critical midstream and charging infrastructure projects, and ultimately shifting production outside of Europe.

To convert this momentum into a secure and fully scaled industrial system, policymakers must act decisively. Maintaining a stable, long-term demand signal through existing CO_2 standards is non-negotiable. This must be paired with targeted EU-level industrial policy and scale-up finance—particularly for capital-intensive battery materials, recycling, and midstream segments where structural gaps remain. With unyielding policy certainty and strategic support, Europe can anchor this historic investment, protect its manufacturing base, and cement its leadership in the global clean energy economy.

Methodology and sources

EV manufacturing

Private Investment Data: Investment figures aggregate publicly announced private equity, debt financing, green bonds, and corporate CAPEX committed between January 2020 and January 2026. Corporate CAPEX estimates are derived by isolating and prorating Europe specific battery investments from company disclosures and strategic guidance.

Battery Supply Chain

Private Investment Data: Investment figures aggregate publicly announced private equity, debt financing, green bonds, and corporate CAPEX committed between January 2020 and January 2026. Corporate CAPEX estimates are derived by isolating and pro-rating Europe-specific battery investments from company disclosures and strategic guidance. Public funding includes national subsidies, IPCEI support, and EIB-backed loans. For those projects without a publicly disclosed figure an estimation was used. For gigafactories this estimation came from clustering countries in per/GWh investment categories and assigning investment based on output. For other segments projects were linked to like-for-like projects with investment totals.

Job estimates: This analysis estimates employment in Europe's battery supply chain, focusing primarily on gigafactories where job attribution is clearest. While activity has been mapped across the full value chain, upstream segments such as mining, refining and precursors were excluded from direct job totals due to the difficulty of isolating battery-specific employment from multi-use operations. Job figures are drawn mainly from company disclosures, investor materials and site-level reporting, with proportional allocations used where only aggregate workforce data is available and cautious reliance on public job estimates where no verified data exists. To estimate total supply-chain employment, a multiplier of 2 has been applied to gigafactory and recycling jobs, based on Menon Economics modelling. Looking to 2030, this multiplier is expected to rise in line with increased vertical integration, with modelling suggesting a range of 3.9 to 6 under moderate to aggressive supply-chain expansion scenarios.

Public Charging

Investment in the extant network

Our estimate of the total investment required to build the extant charging infrastructure network in the EU27+ countries derives from an estimate of the capital costs required to install charge points at sites across the bloc.

Charge point data was acquired from the European Commission's TENtec Public Portal's Alternative Fuels layer. The final dataset comprised 1,057,335 individual charge points across the EU27+ countries.

To ensure analytical rigor, the raw data underwent significant normalisation, including power standardisation, operator consolidation, and geospatial clustering to prevent double counting of grid connection costs, in which connectors were grouped into 309,657 distinct 'sites'.

Capital expenditure was estimated using a tiered cost model, grounded in regulatory benchmarks. Cost assumptions were derived from the European Commission, *CEF Transport - Alternative Fuels Infrastructure Facility* unit contribution rates 2021-2024. National tenders such as Germany's Deutschlandnetz price caps also informed our capex estimations, as did operator disclosures from publicly listed CPOs.

Hardware and civil works costs were applied per charge point, while grid connection costs were applied per clustered site based on the maximum power requirement of that site.

The final tiered model was as follows.

Tier	Power Range	Benchmark Hardware Cost (€)	Benchmark Grid Cost (€)	Justification
AC (Slow/Fast)	<50 kW	€1,500 – €3,500	€2,000 – €10,000	Low Voltage (LV) connection; minimal civil works.
DC Rapid	50–149 kW	€40,000 – €60,000	€5,000 – €20,000	LV High Power; typically requires feeder pillars.
DC Ultra-Rapid	150–350 kW	€65,000 – €85,000	€50,000 – €120,000	Medium Voltage (MV) substation often required.

DC Hyper-Rapid	>350 kW	€100,000 – €130,000	€100,000 – €250,000	Liquid-cooled hardware premium + complex MV grid works.

The model applies a standard grid cost based on site power. It does not account for outliers requiring multi-kilometer cabling or new primary substations (which can exceed €1m in cost). It does not include the cost to acquire the land required for the site. The figures represent gross capital deployment, they do not deduct subsidies received by operators, reflecting the total economic value of the infrastructure rather than the net private investment.

Employment Multipliers

The data reveals a distinct shift in the quality of employment.

- Direct Impact: The factories in Lahti, Barcelona, and Valdarno are not merely assembly lines; they are integrated engineering hubs. This increases the "value added per employee" significantly compared to traditional automotive assembly.
- Indirect Impact: For every 10 jobs created in these EV tech factories, approximately 18 jobs are estimated to be created in the wider supply chain (logistics, component manufacturing, services). This multiplier is particularly visible in regions like Silesia and Tuscany.[29]

Manufacturing site & economic impact analysis

Manufacturer	Location	Country	Economic Status & Recent Developments
Siemens AG	Leipzig, Erlangen	Germany	Part of €1bn investment; Heliox integration; Focus on heavy-duty.

29 Estimates from ElectroMobility Poland - https://electromobilitypoland.pl/en/about-project/

ABB E-mobility	Valdarno	Italy	$30m investment; Doubled capacity; 16,000 m² site.
Alpitronic	Bolzano	Italy	Global expansion (USA); Proprietary SiC tech; Regional economic anchor.
Wallbox	Barcelona	Spain	€9m investment; 750k unit capacity; Acquired ABL.
Kempower	Lahti	Finland	New 10k m² factory; +200 jobs; Municipal partnership.
Schneider Electric	Le Vaudreuil	France	WEF Lighthouse; High efficiency; Training hub.
Alfen	Almere	Netherlands	New 24k m² HQ; €500m+ revenue; Smart grid focus.
Ekoenergetyka	Zielona Góra	Poland	20% bus market share; Doubled turnover; Enterprise Investors backed.
Zaptec	Stavanger	Norway	€110m revenue; Strong regional cluster with Easee.

Easee	Stavanger	Norway	Regulatory recovery; Key employer in Norwegian tech sector.
CTEK	Vikmanshyttan	Sweden	Grid management focus; ~200 employees; GM partnership ended.
GARO	Gnosjö	Sweden	Manufacturing in Sweden/Poland; Revenue decline in late 2024.
KEBA	Linz	Austria	€514m revenue; 2,100 employees; Acquired EnerCharge.
Efacec	Matosinhos	Portugal	Acquired by Mutares; 2,000 employees; Restructuring for growth.
Delta Electronics	Dubnica nad Vahom	Slovakia	Central EU hub for Taiwan giant; Supply chain integration.
eNovates	Lokeren	Belgium	V2G specialist; Volatile revenue (€34m -> €12m); R&D focus.
Elinta Charge	Kaunas	Lithuania	€7m investment; Design-led export; Part of Kaunas tech cluster.

MC Chargers	Thessaloniki	Greece	Acquired by Cosmos Aluminum; Relocating to Sindos; MCS focus.
DBT	Brebieres	France	Euronext-listed. Key player in ultrafast hubs.
ADS-TEC Energy	Dresden	Germany	20MW storage contracts (2025); Grid-buffering specialist.
Webasto	Schierling	Germany	Divested majority of charging to Transom; Retained minority/production.
Compleo	Dortmund	Germany	Acquired by Kostal; Wickede/Wambel sites closed; Dortmund retained.
ABL	Lauf an der Pegnitz	Germany	Acquired by Wallbox; Focus on DACH compliance; Family exit.
Heliox	Best	Netherlands	Acquired by Siemens; 330 employees; Heavy-duty leader.
go-e	Feldkirchen	Austria	80 employees; Management pivot to export; SME success story.

Smart Electric Tech	Jaunmārupe	Latvia	LIAA supported; 2,000+ installs; Exporting to US/EU.
ZPUE S.A.	Włoszczowa	Poland	Large utility supplier; Integrated storage/charging; Regional employer.
Enelion	Gdańsk	Poland	60 employees; $1.3m funding; Smart AC focus.
Voltdrive	Prostějov	Czechia	Component manufacturing; Integrated into automotive supply chain.
Olife Energy	Prague	Czechia	Battery storage integration; "Powered by Olife" tech; Grid balancing.
EVBox	Amsterdam	Netherlands	Engie-backed. One of Europe's largest; 500k+ ports shipped. Major R&D hub
Ingeteam	Beasain, Sesma	Spain	€350m+ supply deal with Iberdrola (2024-2025). Key industrial employer in the Basque Country; massive focus on high-power DC.

Circontrol	Viladecavalls	Spain	€45m+ revenue. Employs 230+; strong circular economy focus with reusable component logistics.
Enel X Way	Rome	Italy	Strategic pivot 2024-2026. Shifting to a "capital-light" model but remains a dominant manufacturing specifier in Southern Europe.
Autel Energy	Munich	Germany	European technical and logistics hub in Munich to bypass supply chain lag.
Tritium	Amsterdam	Netherlands	Their Amsterdam facility is their primary European service/assembly point for Ionity-scale projects.