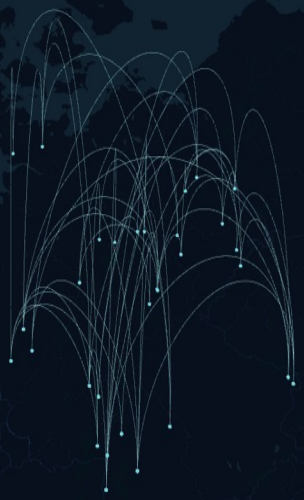

The Engine Room of Europe

Germany's industrial transition, driven by investment across the battery supply chain.

NEW AUTOMOTIVE

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Key Figures

€20bn

Investment in specific projects*

36+

Projects

25,755

Direct jobs in 2030

67 GWh

Germany's battery manufacturing output

259 GWh

Germany's projected battery manufacturing output in 2030

*Updated on 22/12/2025

About this Report

This report is the final part of a series looking at Europe's emerging battery supply sector clusters. The series aims to highlight the opportunities from this sector for Europe's regions, and the benefits that this developing industry is bringing to Europe's economy. The reports give an overview of the hubs, key projects as well as the policies that are key to continuing to drive progress.

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Regional Profile

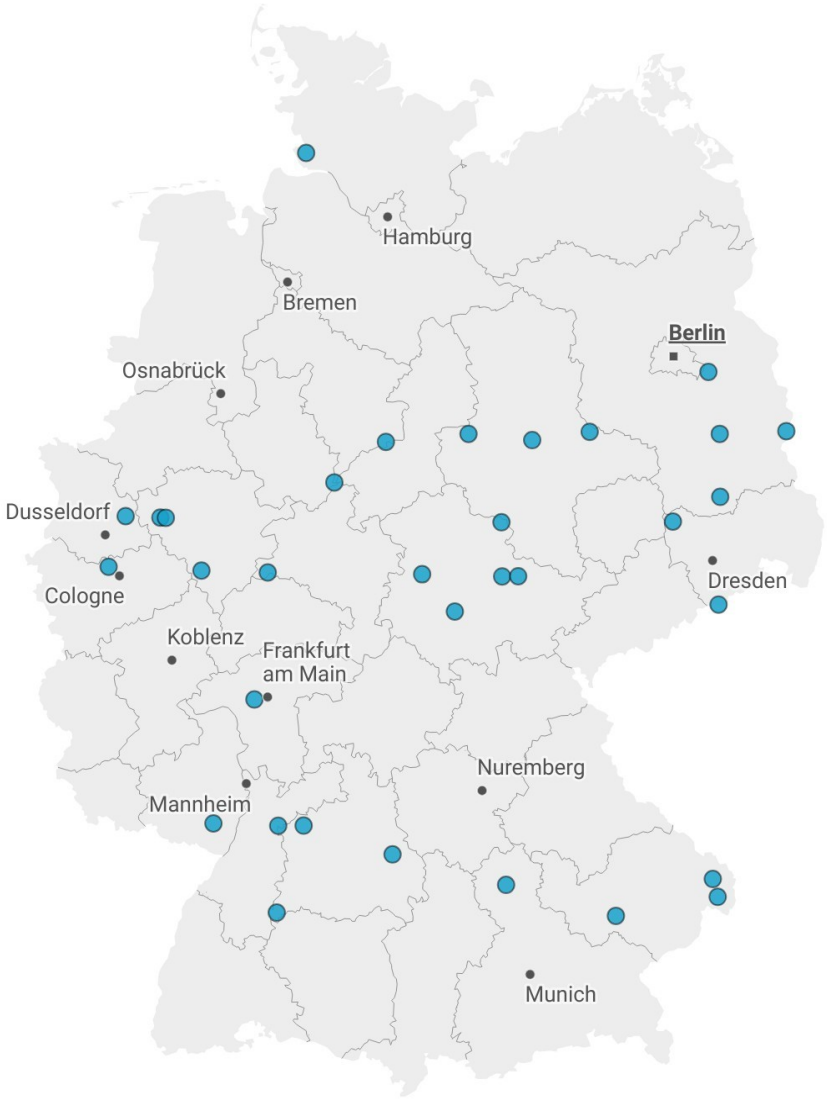

Figure 1: A Map of Germany's battery supply chain projects. Locations are approximate.

The birthplace of the modern car, Germany's commitment to building a domestic battery supply chain is driven by a determination to defend its position as Europe's manufacturing powerhouse. For more than a century, its industrial strength has been defined by precision engineering, scale, and exports. Now, that same industrial muscle is being redirected towards electrification.

The scale of investment has been extraordinary. Germany has successfully secured capital commitments from global giants like Tesla and CATL, alongside massive internal investment from the Volkswagen Group's PowerCo[1]. This has resulted in a downstream capacity projection that defines European leadership, with total gigafactory capacity projected to exceed 259 GWh by 2030. In line with this expansion, the projected direct jobs across major operational and planned facilities exceeds 25,000[2].

This industrial transformation is underpinned by strong policy support. The EU's Important Projects of Common European Interest (IPCEI) framework has enabled Berlin to channel substantial state aid into projects spanning refining, processing, and cell manufacturing[3]. This intervention has been necessary to secure strategic projects against international competition. A clear example is the €902 million approved for Lyten's Heide ("Drei") project (formally Northvolt) to counter US IRA incentives[4]. Public funding through IPCEI and the national Raw Materials Fund has secured every stage of the supply chain, helping to ensure that the future of the German automotive industry remains built on German soil. This approach reflects Germany's commitment to vertical integration, anchoring value creation across extraction, processing, cell production, and recycling within its own borders.

This strategy is visible in hubs like BASF's Schwarzheide complex, where cathode active material production runs alongside a recycling plant processing 15,000 tonnes of spent batteries and production scrap each year[5]. In Lower Bavaria, BMW's Cell Recycling Competence Centre goes further, feeding recovered lithium, nickel, and cobalt back into pilot EV cell production[6]. Projects such as AMG's lithium refinery in Bitterfeld-Wolfen and Vulcan Energy's geothermal lithium sites in the Upper Rhine Valley highlight Germany's focus on controlling the midstream and refining stages of the supply chain as much as extraction itself[7]. Together, these developments show how Germany is building one of Europe's most complete and strategically independent battery ecosystems.

However, this rapid industrial pivot has exposed tensions between industrial policy and market dynamics in Europe's biggest EV market by volume. While government incentives have

1 New AutoMotive, European Battery Supply Chain. Accessed: October 2025

2 New AutoMotive, European Battery Supply Chain. Accessed: October 2025

3 IPCEI, About IPCEI. Accessed: October 2025

4 European Commission, Commission approves €902 million German State aid measure to support Northvolt in the construction of an electric vehicle battery production plant to foster the transition to a net-zero economy. Accessed: October 2025

5 BASF, BASF starts commercial operation of Black Mass plant for Battery Recycling in Schwarzheide, Germany. Accessed: October 2025

6 BMW Group, Innovative direct recycling at the BMW Group: New Competence Centre in Lower Bavaria returns battery cell raw materials to the loop. Accessed: October 2025

7 New AutoMotive, European Battery Tracker. Accessed: October 2025

accelerated production capacity, the abrupt end of EV purchase subsidies in 2023 caused domestic demand to stall[8]. The resulting uncertainty has affected utilisation rates at new gigafactories and led to workforce adjustments, including at Tesla's Giga Berlin. With new incentives set to come into force next year, the challenge now is to continue matching the country's supply-side momentum with a stable and growing home market.

8 New AutoMotive, Global Electric Vehicle Tracker

Anatomy of the Hub: Projects and Pull Factors

Germany's battery supply chain ecosystem is anchored by world-class OEM-led gigafactories, supported by critical investments in upstream chemical processing.

The Projects

The region is home to 36+ projects that form parts of the battery supply chain.

Mining and Refining: Building Material Autonomy

Germany's upstream strategy prioritises refining and conversion capacity to reduce reliance on imported battery-grade materials. AMG Lithium's refinery in Bitterfeld-Wolfen represents a cornerstone achievement as Europe's first operational lithium hydroxide plant. Its initial 20,000-tonne annual capacity, enough to support an annual capacity of 500,000 EVs, is set to scale to 100,000 tonnes by 2030, which would support 2.5 million EVs, addressing a critical chokepoint[9]. Complementing this, Vulcan Energy Resources is developing a fully integrated geothermal lithium project in the Upper Rhine Valley, combining extraction and refining to produce low-carbon lithium hydroxide[10].

Germany is also advancing other critical materials. Graphit Kropfmühl AG operates both a natural graphite mine and refining unit in Hauzenberg, producing over 25,000 tonnes/year of natural graphite (including both its own mined material and external supply) into purified graphite and related products including for anode usage[11]. In the nickel segment, Pure Battery Technologies (PBT) runs a refinery in Hagen that processes around 2,500 tonnes of nickel products per year, with ongoing expansion to convert black mass concentrate into precursor cathode active materials (pCAM)[12]. Together, these projects underscore Germany's strategy of mastering chemical conversion rather than raw extraction, anchoring the European supply chain around advanced material processing.

Anodes, and Cathodes: Strengthening the Midstream

Germany's midstream is defined by rapid expansion in cathode and anode material capacity, ensuring the domestic transformation of refined materials into high-performance battery components. BASF's Schwarzheide site in Saxony serves as the industrial backbone, producing around 3,000 tonnes of cathode active materials (CAM) annually, sufficient for roughly 20 GWh of

9AMG, AMG Hosts Successful Opening of Europe's First Lithium Hydroxide Refinery. Accessed: October 2025.

10Vulcan Phase One Lionheart Project. Accessed:October 2025

11BASF BASF supports Graphit Kropfmühl, a subsidiary of AMG Critical Materials N.V., with innovative renewable electricity concept. Accessed: October 2025

12Pure Batteries Technology. Early Construction Permit Approved for Hagen. Accessed: October 2025

cells, and integrating a planned black mass refinery by 2027 capable of processing 30,000 tonnes of feedstock per year[13]. This co-location of CAM and recycling capacity reflects Germany's push for a closed-loop.

Beyond Schwarzheide, a new wave of midstream innovation is reshaping Germany's battery industry. In Bitterfeld-Wolfen, IBU-tec is expanding production of LFP cathode materials for affordable EVs, with them targeting 3,000 tonnes of battery material by 2028[14]. Meanwhile, in Lauenförde, the GDI–AGC Glass Europe partnership is pushing anode technology forward with silicon-based designs slated for commercial use by 2028, ensuring Germany stays competitive in the race for high-performance chemistries[15].

Gigafactories: The Downstream Powerhouse

Germany hosts the highest concentration of operational and planned gigafactories in Europe, supported by both domestic OEMs and foreign investors. Volkswagen's PowerCo facility in Salzgitter anchors this network, with 40 GWh operational capacity and expansion plans for a recycling centre[16].

Foreign direct investment has been equally transformative. Tesla's Gigafactory Berlin in Grünheide leads Europe with more than 50 GWh of capacity[17]. CATL's Erfurt plant, operational since 2021, ensures supply security for German OEMs with a planned 14 GWh capacity[18]. These projects, alongside twelve other facilities, cement Germany as the manufacturing core of Europe's electrified mobility sector.

Recycling and Circular Integration

After years of slow progress, Europe's battery recycling sector is finally beginning to gather momentum. The push to close material loops and secure domestic supplies has spurred a new wave of investment, with projects like BASF's Schwarzheide black mass refinery signalling a shift from pilot schemes to industrial-scale recovery[19]. PowerCo is also developing a recycling facility in Salzgitter, located alongside its gigafactory, as part of its aim to establish a more circular battery production system[20].

13 BASF. BASF starts commercial operation of Black Mass plant for Battery Recycling in Schwarzheide, Germany. Accessed: October 2025

14 Electrive. IBU-Tec & PowerCo sign battery supply deal. Accessed: October 2025

15 EIB. EIB Funds GDI's Innovative Silicon Anode Technology to Revolutionize Battery Performance. Accessed: October 2025

16 Volkswagen Group. Ground breaking in Salzgitter: Volkswagen enters global battery business with "PowerCo". Accessed: October 2025

17 EuroNews. Tesla aims to double production capacity in the German Gigafactory, targeting 1 million EVs annually. Accessed: October 2025

18 Leg Thuringen CATL takes off – Europe's largest cell production facility starts production. Accessed: October 2025

19 Recycling Magazine, BASF starts commercial operation of black mass plant. Accessed: October 2025

20 Volkswagen Group. Ground breaking in Salzgitter: Volkswagen enters global battery business with "PowerCo". Accessed: October 2025

Table 1: List of projects associated with the battery supply chain in Germany

Area	Number of Projects	Name of Projects
Mining and Refining	7	AMG Graphite Vulcan, Pure Battery Technology, NewCo, Graphit Kropmuehl, AMG Lithium, Zinnwald Lithium.
Precursors	1	Pure Battery Technology
Anodes and Cathodes	3	GDI, BASF, IBU Tec
Gigafactories	14	Tesla, IONCOR, Custom Cells Group, Microvast, Farasis Energy Europe, VARTA, BorgWarner Akasol, CATL, PowerCo, Lyten, BMW, Leclanche, BMZ
Recycling	8	Mercedes Benz, Cylib, Li-cycle, BASF, AE Elemental, Fortum, European Metal Recycling, IBU Tec.

The Recipe for Success: Why Germany

The concentration of investment in this region is the result of a powerful combination of natural advantages and strategic policy.

Proactive Policy and Financial Support: Germany continues to support its battery ecosystem both through championing EU frameworks like IPCEI and innovative national instruments such as the KfW Climate and Transformation Fund. Recent backing includes BASF's Schwarzheide cathode and recycling hub and Vulcan Energy's lithium projects. The government is now focused on long-term support, providing stability, permitting, and coordination aligned with EU policies like the Green Deal Industrial Plan and Net-Zero Industry Act.

Existing Industry Ecosystems: The battery boom is anchored by the deep industrial ecosystem of German OEMs (Volkswagen, Mercedes-Benz, BMW) and their extensive Tier 1 supplier networks. The presence of these automotive anchors provides immediate, high-volume demand for domestically produced cells and modules. This density fosters a highly competitive manufacturing and R&D environment. Germany's public–private research networks, including the Fraunhofer Battery Alliance and Helmholtz centres, actively bridge laboratory development and industrial deployment[21]. This infrastructure underpins domestic advances in cell chemistry, solid-state batteries, and battery recycling, ensuring the country remains at the technological frontier.

Vertical integration: Clusters of interconnected projects are strengthening Germany's position across the battery value chain. As production of materials, cells, and recycling facilities co-locate, companies benefit from established logistics, shared infrastructure, and ready access to industrial partners. This depth of integration makes it increasingly attractive for new investment, reducing costs and speeding up development from lab to line.

Geography and Workforce: Germany's central position in Europe places it close to both key automotive manufacturing hubs and major consumer markets. Its transport networks and energy infrastructure make large-scale industrial operations viable, while a strong engineering and vocational training tradition ensures a steady supply of skilled labour.

21 Fraunhofer. Fraunhofer Battery Alliance. Accessed: October 2025

The Road Ahead

The long-term success of the Germany battery hub, like any large-scale industrial project, is not guaranteed. It faces several significant challenges that must be navigated to ensure its continued growth and viability.

Navigating Challenges

Germany's public and private-sector battery build-out is happening against a backdrop of active industry lobbying and explicit policy hedging. On the one hand Berlin has approved major support for upstream and cell projects. On the other hand, in March 2023 senior political figures and OEM leaders pushed for technology-neutral exceptions (notably an e-fuels carve-out) during the 2035 zero-emissions debate[22].

Those mixed signals matter because demand certainty drives utilisation of the battery supply chain. Berlin cut the long running EV purchase premium (the "environmental bonus") at the end of 2023, a move linked to a sharp fall in EV registrations in 2024. The government has since floated other demand measures which will be coming into force at the start of 2026. Put simply: the state is prepared to underwrite supply-side scale-up, but simultaneous political concessions to combustion-technology lobbying and stop-start consumer incentives weaken the market signals suppliers need.

The Policy Imperative: Driving Domestic Demand

From the year-to-date up to September BEVs have accounted for 18% of the new cars registered in Germany. This is an improvement on the 13% they accounted for in the same period for 2024, and back up to the level seen in the first 9 months of 2023. It has therefore taken over a year for the market to recover from the abrupt stoppage of support for motorists transitioning to EVs[23].

Looking ahead, Germany plans to introduce a new and more comprehensive package of EV incentives from 2026, marking a significant policy shift after a steady 2025. The proposals include

22Clean Energy Wire. EU delays crucial 2035 car emissions vote after German insistence on combustion engines. Accessed: October 2025

23 New AutoMotive, Global Electric Vehicle Tracker. Accessed: October 2025

the return of a purchase bonus of up to €4,000, extended vehicle tax exemptions potentially lasting until 2035, and enhanced tax incentives for company cars and business purchases[24].

Germany's industrial ambitions in EVs and batteries are closely tied to a stable European framework. As one of the EU's leading automotive producers and a key player in Europe's battery sector, Germany stands to benefit from strong EU-level targets and consistent policy signals. Any weakening of the EU's climate or vehicle regulations could hurt demand, undermine investor confidence, and provide an advantage to international competitors. However, a clear and predictable trajectory of electrification across Europe ensures that Germany's investments in the battery supply chain are matched by domestic and continental demand.

24 Electrive, Germany: New EV subsidy returns as purchase incentive – also for used cars. Accessed: October 2025

Conclusion

Germany has established itself as the engine room of Europe's battery industry, with a comprehensive, vertically integrated supply chain spanning raw material processing, cell manufacturing, and recycling. The country's success reflects a combination of unprecedented investment, strong OEM anchors, and strategic policy support that has secured global players and domestic champions alike.

Yet the long-term viability of this ecosystem depends on sustained domestic and European demand: stop-start incentives, policy hedging, and ongoing lobbying for technology-neutral exceptions have already introduced market uncertainty. Ensuring a predictable trajectory for electrification, through stable incentives, targeted fleet measures, and EU aligned regulatory certainty will be essential to realising the investment made into the battery supply chain.

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