

EV Charging Hardware

ANMD-MRS16-154 · E-Mobility & Autonomous Transport Technologies

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US\$

WHY THIS REPORT

EV charging hardware is the physical backbone of electrification — the AC and DC equipment that delivers energy from grid to vehicle across homes, workplaces, depots and public sites. Spanning AC Level-2, DC fast, residential, fleet/depot and smart-connected designs, it underpins driver confidence and fleet feasibility. This decision-grade study sizes the global market three ways — value, units and charge points — across charger type, power level and application, across seven regions and four scenarios to 2032, with outlooks to 2050.

SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

Sustainability is this report's backbone, not an afterthought. Charging hardware enables transport decarbonisation and smart-grid integration, while raising equity-of-access and grid-impact questions.

Mapped Sustainable Development Goals:

SDG 7 Affordable & Clean Energy	SDG 9 Industry, Innovation & Infrastructure	SDG 11 Sustainable Cities & Communities	SDG 12 Responsible Consumption & Production	SDG 13 Climate Action
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Measurable sustainability outcomes assessed:

- Transport decarbonisation through charging access
- Smart-grid integration and managed load
- Grid impact and load management as a material risk
- Charging-access equity and electronic-waste assessed

Framework alignment: Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

WHAT'S INSIDE AT A GLANCE

53 Chapters	9 Report Parts	7 Regions Covered	40+ Country Markets
2025–32 Forecast Horizon	4 Forward Scenarios	25+ Companies Profiled	5 SDGs Mapped

REPORT COVERAGE

Geographic scope: North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. Europe leads public charging on AFIR mandates; North America scales on NEVI funding and NACS; Asia Pacific grows fastest; other regions assessed on their own merits.

- The physical backbone delivering grid-to-vehicle energy
- AC Level-2, DC fast, home, fleet/depot and smart designs
- Charging access that removes range anxiety
- Grid impact, access equity and e-waste as material risks

MARKET OVERVIEW

From dumb socket to managed grid asset — where smart, load-managed, grid-integrated charging outcompetes basic hardware.

EV charging hardware is becoming a managed grid asset. Demand is driven by EV adoption and range-anxiety relief, public-charging mandates (AFIR, NEVI), and fleet and depot electrification across Europe, North America and Asia Pacific. The market is read three ways — value, units and charge points — and forecast under four scenarios, each region reported separately.

- **Europe leads public charging** — Germany, France, the UK and the Netherlands, anchored by AFIR mandates and dense urban deployment across ABB E-mobility (ABB Ltd) and Siemens AG (eMobility)
- **North America scales on funding** — the United States, supported by NEVI funding, the shift to the NACS connector and fleet-depot build-out across ChargePoint Holdings, Inc. and Tesla, Inc.
- **Smart-connected charging is the differentiator** — networked, load-managed and grid-integrated chargers outcompete dumb hardware on cost and grid fit
- **Charger type segments the value** — AC Level-2, DC fast, home, fleet/depot and smart designs, each with distinct economics

REGIONAL OUTLOOK

Across seven reporting regions, the report separates leading markets from high-growth and emerging ones — each profiled in full rather than aggregated into Rest of World.

Region	Stage	Lead Country Markets & Drivers
Europe	Public-charging leader	Germany, France, UK, Netherlands — emissions rules, OEM base, charging mandates
North America	Funding-led scale	United States, Canada — IRA, fleet electrification, charging build-out
Asia Pacific	Fastest growth	China, Japan, India, South Korea — manufacturing base, EV demand, supply chain
Middle East	Strategy-led	Saudi Arabia, UAE — EV strategy, sovereign investment, smart mobility
Latin America	Emerging	Brazil, Chile — urban mobility, fleet adoption, lithium supply
Africa	Frontier	South Africa, Kenya, Morocco — two-wheelers, mobility access, mineral supply

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> • EV adoption & range-anxiety relief • Public-charging mandates (AFIR, NEVI) • Fleet & depot electrification • Smart-charging & grid integration • Connector standardisation (CCS, NACS) 	<ul style="list-style-type: none"> • Grid-connection & upgrade constraints • Reliability & uptime challenges • Utilisation & charge-point economics • Standards & connector fragmentation • Permitting & installation cost

SEGMENTATION SNAPSHOT

By Charger Type	AC Level-2 · DC fast · home / residential · fleet / depot · smart connected
By Power Level	<22 kW AC · 50-150 kW DC · 150-350 kW ultra-fast · megawatt
By Application	Passenger · commercial · two-wheeler / micro-mobility
By End User	OEMs · fleet operators · charge-point operators · consumers
By Business Model	Hardware sales · software / subscription · services
By Scale	Consumer · fleet · OEM / industrial-scale

TECHNOLOGY & APPLICATION FINDINGS

Where the category is differentiating fastest — the technology and application fronts that separate leaders from followers:

- **Passenger** — home AC and public DC fast charging anchor everyday and en-route charging
- **Commercial** — depot and high-power fleet charging enable bus, truck and van electrification
- **Two-wheeler / micro-mobility** — compact AC and swap-charging serve urban two-wheeler fleets

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The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

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COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans power-electronics and automation majors, dedicated charging-network providers, and home and fleet specialists. Deal activity — network roll-outs, NACS adoption and grid-integration partnerships — signals a market consolidating around smart, reliable, high-power charging.

Representative players profiled in the full report:

ABB E-mobility (ABB Ltd) · Tesla, Inc. · ChargePoint Holdings, Inc. · Siemens AG (eMobility) · Schneider Electric SE · and 20+ further profiled players.

Investment intelligence: venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a conditional investment view.

KEY QUESTIONS THIS REPORT ANSWERS

- How large is the global EV charging hardware market, and how fast will it grow to 2032?
- Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- Which technologies and architectures reshape the addressable market and the cost curve?
- Who leads, and where is the competitive and patent white space?
- Is the investment case bankable — and under what conditions?
- How does the category align with the SDGs and disclosure regulation?

WHY ANMD — THE DIFFERENCE

Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG, climate and natural-capital intelligence and a decision-ready bankability view in a single architecture.

- **Triangulated sizing** — every market read three ways so value, volume and the physical-unit views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear, conditional investment view.

WHO SHOULD BUY THIS REPORT

Charge-point operators, fleet operators, utilities, OEMs, investors, lenders and policymakers, and strategic corporate planners and decision-makers.

Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

Purchase at www.anewmarketdynamics.com · Standard & Premium licences · Single-Site (SSL) and Global-Site (GSL) options at checkout.

Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at www.anewmarketdynamics.com. The full detailed table of contents will be sent directly to your registered company email address.