EV Battery Packs

ANMD-MRS16-151 · 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 battery packs are the single most valuable component of an electric vehicle — the integrated cell, module, thermal and management assembly that determines range, cost, safety and charging speed. The technology is in rapid transition, with LFP gaining share for cost, NMC holding the premium tier, cell-to-pack designs raising density, and solid-state on the horizon. This decision-grade study sizes the global market three ways — value, units and GWh — across cell chemistry, pack architecture 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. Battery packs enable transport decarbonisation, but carry critical-mineral, supply-chain-ethics and end-of-life stakes that responsible sourcing must manage.

Mapped Sustainable Development Goals:

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

Measurable sustainability outcomes assessed:

- Transport decarbonisation through electrification
- Falling cost per kWh and rising energy density
- Critical-mineral sourcing and ethics as a material risk
- Battery recycling, second-life and thermal safety 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. Asia Pacific dominates supply and demand; Europe scales on localisation; North America re-industrialises on IRA credits; other regions assessed on their own merits.

- The most valuable component determining range, cost and safety
- LFP, NMC, cell-to-pack and emerging solid-state chemistries
- Falling cost per kWh, rising density and faster charging
- Critical-mineral ethics, recycling and thermal safety as material risks

MARKET OVERVIEW

From cell to integrated pack — where LFP, cell-to-pack and scale drive the cost per kWh that decides EV affordability.

EV battery packs are in rapid technology transition. Demand is driven by global EV adoption and emissions targets, falling cost per kWh, and IRA and localisation rules across Asia Pacific, Europe and North America. The market is read three ways — value, units and GWh — and forecast under four scenarios, each region reported separately.

- **Asia Pacific dominates supply and demand** — China, South Korea and Japan, led by Contemporary Amperex Technology Co., Limited, BYD Company Limited, LG Energy Solution, Ltd. and Panasonic Energy Co., Ltd.
- **Europe scales on localisation** — Germany, France and the UK, where gigafactory build-out and emissions rules drive demand despite supply-chain gaps
- **Cost per kWh is the differentiator** — LFP, cell-to-pack integration and manufacturing scale drive the pack cost that determines EV affordability
- **Cell chemistry segments the value** — NMC, LFP, cell-to-pack and emerging solid-state, each with distinct cost, density and safety 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
Asia Pacific	Supply & demand leader	China, Japan, India, South Korea — manufacturing base, EV demand, supply chain
Europe	Localisation scale	Germany, France, UK, Netherlands — emissions rules, OEM base, charging mandates
North America	Re-industrialising	United States, Canada — IRA, fleet electrification, charging build-out
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
• Global EV adoption & emissions targets • Falling cost per kWh & density gains • IRA, localisation & domestic-content rules • LFP, cell-to-pack & solid-state advances • Fast-charging & range demand	• Lithium, nickel & critical-mineral volatility • Supply-chain concentration & geopolitics • Thermal-safety & recall risk • Battery end-of-life & recycling burden • Gigafactory capital & ramp risk

SEGMENTATION SNAPSHOT

By Cell Chemistry	NMC · LFP · cell-to-pack · solid-state · modular swappable
By Pack Architecture	Module-based · cell-to-pack (CTP) · cell-to-chassis · swappable
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** — LFP and NMC cell-to-pack designs balance cost, range and fast-charging for mass-market EVs
- **Commercial** — high-capacity LFP packs serve trucks, buses and fleets prioritising cost and durability
- **Two-wheeler / micro-mobility** — compact and swappable packs power scooters and urban micro-mobility

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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 dominant Chinese and Korean cell-makers, Japanese incumbents, and emerging Western and solid-state entrants. Deal activity — gigafactory build-outs, LFP licensing and solid-state partnerships — signals a market consolidating around scale, chemistry and localisation.

Representative players profiled in the full report:

Contemporary Amperex Technology Co., Limited (CATL) · BYD Company Limited · LG Energy Solution, Ltd. · Panasonic Energy Co., Ltd. · Samsung SDI Co., Ltd. · 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 battery pack 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

OEMs, fleet operators, battery makers, 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.