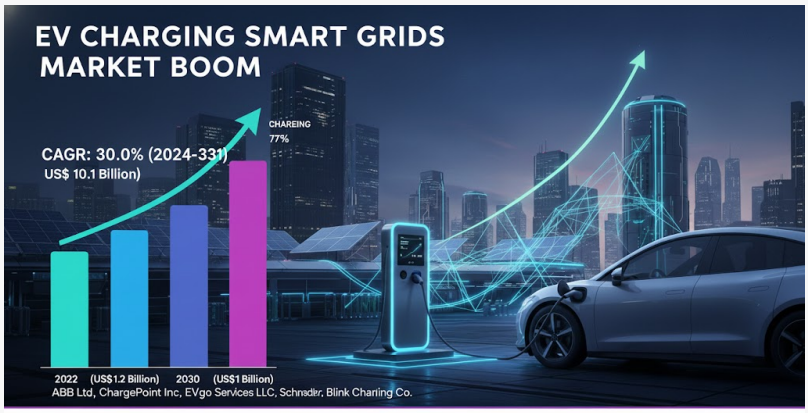
EV Charging Smart Grids Market is growing with the CAGR of 30% during the forecast period 2024-2031 |DataM Intelligence

Smart grids are transforming EV charging into an intelligent, flexible energy ecosystem, enabling scalable growth and reliable integration with renewables



The Forecsated Market Size for 2020:

AUSTIN, TX, UNITED STATES, November 28, 2025 /EINPresswire.com/ -- The Global EV Charging Smart Grids Market reached US$ 1.2 billion in 2022 and is expected to reach US$ 10.1 billion by 2030 growing with a CAGR of 30.0% during the forecast period 2024-2031.

The global EV charging smart grids market is growing due to the rising adoption of electric vehicles, government initiatives promoting clean transportation, and the need for managing increased electricity demand. Technological advancements like AI, IoT, and vehicle-to-grid (V2G) capabilities further drive efficient energy management.

> EV charging smart grids are becoming the backbone of future mobility linking renewable power, intelligent load management, and fast-charging ecosystems to enable a resilient, scalable EV network."
>
> *DataM Intelligence*

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Key Developments

United States
•September 2025: U.S. utilities deployed advanced smart grid management platforms enabling real-time load balancing for high-density EV charging networks.

•June 2025: Major charging infrastructure providers integrated AI-based predictive maintenance systems to reduce downtime and optimize charger performance across interstate corridors.

•April 2025: U.S. energy companies rolled out V2G (Vehicle-to-Grid) enabled charging hubs supporting bidirectional power flow to stabilize local grids during peak demand.

Japan
•October 2025: Japanese power companies introduced next-generation grid-connected fast-charging systems using high-efficiency converters to support ultra-rapid EV charging.

•July 2025: Japan's automotive OEMs and prefectural governments collaborated to deploy V2H (Vehicle-to-Home) and V2G-compatible chargers for disaster-resilient smart energy ecosystems.

•March 2025: Japanese research centers developed smart grid controllers using AI-driven load forecasting to improve energy distribution across public EV charging networks.

M&A Data
The EDF (via its UK subsidiary) completed full acquisition of Pod Point an EV-charging solutions provider on 4 August 2025.
The acquisition resulted in Pod Point being delisted from the London Stock Exchange and becoming a wholly owned private subsidiary of EDF.
The IONITY network secured €600 million in 2025 to fund expansion of its high-power EV charging infrastructure across Europe.
This funding is intended to accelerate IONITY's roll-out of ultra-fast charging stations, enabling a large-scale build-out of EV-supporting infrastructure

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Segmentation Analysis :-

By Charging Station Type
-Public Charging Stations: Dominates with 85.5% share due to widespread installation in high-traffic areas like parking stations, shopping malls, and airports, offering varied charging speeds for travelers.
-Private Charging Stations: Growing segment for residential and fleet use, supported by home and workplace installations amid rising EV adoption.

By Technology
-Vehicle-to-Grid (V2G): Key enabler for bidirectional energy flow, allowing EVs to support grid stability and demand response.

-Vehicles-to-Everything (V2X): Emerging for broader connectivity with infrastructure, enhancing smart grid integration and efficiency.

Regional Insights

• North America holds 41% share, driven by large-scale utility and private investments in grid-interactive charging, NEVI and federal funding for fast-charging corridors, strong EV adoption, and leading smart-grid pilots.

• Asia-Pacific accounts for 34% share, supported by massive EV deployments, rapid public charger rollouts (China, South Korea, Japan), accelerating battery & BESS capacity, and government programs to integrate charging with renewable generation.

• Europe holds 18% share, fueled by coordinated national/regional programs for interoperable charging, investments in grid upgrades, strong automaker & OEM activity in fast charging, and regulatory pushes for sustainability and V2G pilots.

• Latin America represents 4% share, with growth coming from nascent public charging networks, pilot smart-charging projects, and rising EV uptake concentrated in a few major urban markets.

• Middle East & Africa account for 3% share, supported by emerging smart-city programs, utility modernization projects, and selective investments in charging hubs and data-center / renewable integrations.

Recent Development

April 2025: The European Union passed the Alternative Fuels Infrastructure Regulation, mandating at least 1 million public charging points across the EU by 2028.

April 2025: ChargePoint announced new AC Level 2 charging technology, featuring bidirectional charging (V2X capability) and ultra-fast charging speeds for North American and European markets.

March 2025: BYD launched its Super e-Platform, which includes an all-liquid-cooled Megawatt Flash Charging terminal system capable of 1,000 kW charging power. The company plans to establish over 4,000 such stations in China.

January 2025: Siemens was selected as the technology partner for two major EV charging projects in Italy, focused on electrifying public transport and converting petrol stations into service hubs.

February 2024: Tesla's charging connector was adopted as the official North America Charging Standard (NACS) by SAE International, leading major automakers to transition to this format by 2025.

January 2024: MAN Truck & Bus and ABB formed a partnership to address electrification challenges in Europe's trucking sector, focusing on advancing megawatt charging stations and

software solutions for electric trucks.

October 2024: The Indian government launched the PM E-DRIVE scheme, allocating around USD 240 million specifically for the development of public charging stations across urban and rural areas.

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Key Players
ABB Ltd. | Siemens AG | Schneider Electric SE | Tesla, Inc. | Eaton Corporation | General Electric (GE) | Enel X | ChargePoint Holdings, Inc.

Key Highlights
• ABB Ltd. - Holds 14.2% share of the global EV charging smart grids market, driven by strong presence in fast-charging infrastructure, digital grid integration platforms, and advanced load-balancing technologies.

• Siemens AG- Accounts for 12.8% share, supported by smart grid automation systems, EV charger-to-grid communication solutions, and large-scale utility partnerships across Europe and North America.

• Schneider Electric SE - Represents 10.6% share, backed by leadership in energy management software, microgrid solutions, and integrated home-to-grid charging technologies.

• Tesla, Inc. - Holds 9.3% share, powered by its global Supercharger network, advanced real-time energy optimization systems, and strong vehicle-to-grid (V2G) innovations.

• Eaton Corporation - Accounts for 7.9% share, driven by distributed energy resource management (DERM) platforms, smart transformers, and EV-enabled power reliability solutions.

• General Electric (GE) - Represents 6.5% share, supported by grid modernization systems, energy storage integration, and high-capacity power distribution for EV charging networks.

• Enel X – Holds 5.7% share, powered by demand-response platforms, smart charging infrastructure, and leading V2G pilot deployments globally.
• ChargePoint Holdings, Inc. - Accounts for 4.8% share, driven by networked charging solutions, software-enabled grid optimization, and strong presence in commercial and fleet charging segments.

Market drivers-
• Rapid EV Adoption:

Growing electric vehicle sales worldwide are increasing the need for efficient, scalable charging infrastructure.

• Government Incentives & Policies:
Strong regulations, subsidies, and national EV charging targets support smart grid deployment.

• Rising Demand for Fast & Ultra-Fast Charging:
Smart grids balance high power loads, enabling stable, high-speed charging networks.

• Integration of Renewable Energy:
Smart grids help optimize EV charging with solar, wind, and other renewables to reduce energy costs and emissions.

• Grid Modernization Investments:
Utilities are upgrading aging grid infrastructure, driving adoption of smart meters, digital substations, and intelligent load management.

• Increasing Need for Energy Management:
Smart grids help prevent grid overload and ensure efficient power distribution as EV fleets expand.

• Advances in IoT, AI & Smart Metering:
Digital technologies improve predictive maintenance, dynamic pricing, and real-time charging optimization.

Conclusion
The EV charging smart grids market is predicted for substantial growth, driven by increasing EV adoption and government initiatives. Technological integration, investment in infrastructure, and the need for grid stability are key factors shaping this evolving market, with the Asia-Pacific region expected to lead global transformation.

Related Reports-
EV Charging Stations Market:- EV Charging Station Market reached US$ 22.9 billion in 2022 and is expected to reach US$ 137.4 billion by 2030
Ultra-fast EV Charging Dispensers Market:- Ultra-fast EV Charging Dispensers Market reached US$ 2.6 billion in 2023 and is expected to reach US$ 10.2 billion by 2031

Sai Kiran
DataM Intelligence 4Market Research
+1 877-441-4866
email us here
Visit us on social media:

LinkedIn
X

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