

Wireless Charging Roads Market Forecasts to 2032 – Global Analysis By Component (Ground Assembly (GA), Vehicle Assembly (VA), and Infrastructure), Vehicle Type, Power Supply Range, Technology, Deployment Type, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Wireless Charging Roads Market is accounted for \$53.90 million in 2025 and is expected to reach \$1107.21 million by 2032 growing at a CAGR of 54.0% during the forecast period. Wireless charging roads are innovative infrastructures that enable electric vehicles (EVs) to recharge while driving or parked, using inductive charging technology embedded under the road surface. Energy is transmitted wirelessly through electromagnetic fields, minimizing the need for frequent charging stops and extending driving range. By incorporating renewable energy sources, these roads support wider EV adoption, lessen reliance on conventional charging stations, and foster sustainable, efficient, and smart urban transportation systems.

According to a report by the IEA organization, electric car sales valued for 14 million in 2023, 95% of which were in China, Europe, and the U.S.

Market Dynamics:

Driver:

Growing demand for EVs and convenience

As electric vehicles become more popular, there's a growing push for effortless charging experiences. Wireless charging roads help eliminate range anxiety by allowing

vehicles to recharge while driving, making EV use more practical. Smart city initiatives and urban mobility upgrades are also boosting interest in embedded charging systems. Government incentives and public education campaigns are accelerating consumer adoption. The ability to charge on the move adds a layer of convenience that traditional charging stations can't match. Altogether, these trends are propelling the development and deployment of wireless charging infrastructure.

Restraint:

High upfront CAPEX for road retrofitting and grid upgrades

Retrofitting roads with charging coils involves complex engineering and long construction periods. Power grids also need to be upgraded to handle continuous energy transfer, which adds to the expense. Municipalities often struggle to allocate funds for such high-cost projects, especially when other priorities compete for attention. The lack of clear return on investment and limited pilot data further slow adoption. These financial challenges continue to restrict widespread rollout, particularly in emerging economies.

Opportunity:

Expansion into fleet-based and public transport

Wireless charging roads are especially well-suited for fleets and public transportation networks. Vehicles like buses and delivery vans follow fixed routes, making them ideal for dynamic charging setups. This reduces idle time and dependence on stationary chargers, improving operational efficiency. Governments aiming to electrify transit systems are exploring embedded charging as a scalable solution. Integration with smart mobility platforms can further optimize energy use and route planning. As fleet electrification gains momentum, wireless charging roads offer a compelling path forward for sustainable transport.

Threat:

Competition from fast-charging stations and battery swapping

The wireless charging roads faces stiff competition from established alternatives like fast-charging stations and battery swapping networks. These solutions are already deployed at scale and offer quicker implementation with lower infrastructure complexity.

Battery swapping, in particular, appeals to commercial fleets due to its speed and modularity. Consumer familiarity and existing investment in plug-in charging ecosystems also pose adoption challenges. Moreover, technological advancements in ultra-fast charging may reduce the perceived need for dynamic road-based solutions.

Covid-19 Impact:

The pandemic caused delays in infrastructure projects, including wireless charging road initiatives, due to lockdowns and resource constraints. Supply chains were disrupted, and labor shortages affected construction timelines. However, the crisis also highlighted the value of contactless technologies in public spaces. As cities rethink mobility in a post-COVID world, interest in embedded, touch-free charging systems has grown. Green recovery programs and stimulus funding are now supporting sustainable transport innovations. While the pandemic slowed progress initially, it ultimately reinforced the importance of resilient and future-ready infrastructure.

The inductive charging segment is expected to be the largest during the forecast period

The inductive charging segment is expected to account for the largest market share during the forecast period, due to innovations in both static and dynamic systems that allow vehicles to charge without physical contact. The rise of smart cities, real-time charging for moving vehicles and improvements in energy transfer efficiency are shaping the future of this technology. Notable progress includes partnerships between automotive and tech companies, highway pilot programs, and government-led sustainability efforts—all working together to reduce range anxiety and boost electric vehicle adoption across various transport sectors.

The smart city infrastructure developers segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the smart city infrastructure developers segment is predicted to witness the highest growth rate, propelled by the growing demand for sustainable urban mobility and seamless energy integration. Technologies like inductive and resonant charging are being integrated with smart grids and IoT-based traffic systems. Trends such as in-motion charging, solar-enabled roadways, and cross-platform compatibility are gaining momentum. Major developments include urban pilot programs, strategic alliances with EV manufacturers, and public sector initiatives focused on sustainability. These efforts aim to cut emissions, improve energy use, and build scalable infrastructure for future urban mobility.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, due to increasing electric vehicle adoption, supportive government policies, and a strong push for sustainable urban development. Technologies such as inductive and resonant charging are being embedded into smart infrastructure, allowing vehicles to charge while in motion. Key trends include dynamic charging lanes, solar-integrated roads, and IoT-driven traffic systems. Noteworthy progress includes pilot initiatives in countries like China, Japan, and India, along with rising innovation and patent activity led by Chinese firms.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, driven by growing electric vehicle usage, supportive government policies, and the need for seamless charging infrastructure. Advanced technologies like inductive and resonant systems are evolving, with dynamic charging gaining momentum. Trends include integration with smart city frameworks and push for universal standards. Key milestones feature Electreon's pilot in Detroit and WiTricity's Halo platform. Strategic alliances among automakers, tech innovators, and infrastructure firms are fast-tracking implementation across urban transportation ecosystems.

Key players in the market

Some of the key players in Wireless Charging Roads Market include WiTricity Corporation, Hyundai Motor Company, Electreon, Renault Group, InductEV Inc., BMW Group, Plugless Power Inc., Volvo Group, Wave Charging, Toyota Motor Corporation, ENRX, Robert Bosch GmbH, Qualcomm Technologies Inc., Continental AG, HEVO Inc., Bombardier Inc., Siemens AG, and Mojo Mobility Inc.

Key Developments:

In July 2025, Renault India launched the New Renault Triber %- %India's most innovative 7-seater car. The new Triber comes with new and modern design language along with comfort enhancing features, while retaining its unique DNA of modularity, adopting to rethink space philosophy.

In November 2024, the State of Michigan announced a new partnership with Electreon

Xos, Inc. to operate wireless charging solutions for electrified commercial delivery vehicles in Michigan. With this commercial partnership, Electreon is set to extend the company's wireless EV charging network and use cases in Michigan.

In July 2023, WiTricity announced the FastTrack Integration Program for automotive OEMs that allows for an initial vehicle integration in just three months, dramatically accelerating automaker testing of wireless charging on existing and future EV platforms. Wireless charging will be fully enabled and operational on the automaker's EV platform using the WiTricity Halo™ receiver and the WiTricity Halo™ 11kW charger.

Components Covered:

Ground Assembly (GA)

Vehicle Assembly (VA)

Infrastructure

Vehicle Types Covered:

Electric Passenger Vehicles

Public & Commercial Transportation

Autonomous Vehicles

Logistics & Delivery Fleets

Power Supply Ranges Covered:

Low Power (Up to 50 kW)

Medium Power (50–200 kW)

High Power (Above 200 kW)

Technologies Covered:

- Static Wireless Charging
- Dynamic Wireless Charging
- Inductive Charging
- Magnetic Resonance / Resonant Charging
- Other Technologies

Deployment Types Covered:

- Public Roads & Highways
- Test Tracks & Pilot Projects
- Urban Roads & Smart Cities
- Bus Lanes & Dedicated Transit Corridors

End Users Covered:

- Government & Municipal Authorities
- Private Vehicle Owners
- Transportation & Transit Agencies
- Fleet Operators
- Smart City Infrastructure Developers

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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