

Electric Train Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Train Type (Passenger, Freight), By Speed (Less than 100 km/h, 100-200 km/h, Above 200 km/h), By Battery Type (Gel Tubular, Lead Acid, Lithium-Ion, Others), By Energy Transfer (Overhead Lines, Third Rail, On-Board Energy Storage), By Region & Competition, 2021-2031F

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Abstracts

The global electric train market is projected to expand from USD 200.72 billion in 2025 to USD 286.66 billion by 2031, demonstrating a compound annual growth rate of 6.12%. This market includes the production and use of electric railway vehicles, such as locomotives, multiple units, and battery-powered trains, for both passenger and freight services. Key growth factors stem from strict government policies aimed at reducing carbon emissions and a worldwide commitment to sustainable transport solutions to address climate change. Moreover, the rapid growth of cities in emerging economies demands efficient, high-capacity public transport, driving significant government spending on railway electrification. These foundational elements create a lasting demand for more environmentally friendly and energy-efficient alternatives to traditional diesel trains. Despite this promising forecast, the market encounters notable challenges. A primary hurdle is the considerable capital investment required for developing and maintaining electrification infrastructure, including overhead lines and substations, which can strain public finances. Additionally, increasing protectionism and trade restrictions hinder fair competition for international providers. Although the global rail supply market showed financial resilience, averaging €201.8 billion annually between 2021 and 2023, according to UNIFE in 2024, these substantial initial costs and limited

market access continue to impede global integration.

Market Driver

Significant government investment in modernizing railway infrastructure is a key driver for the global electric train market, facilitating the upgrade of outdated networks and the expansion of high-speed routes. Public funding is crucial for the costly installation of electrification components like overhead catenary systems and substations, turning development plans into operational reality. This financial backing directly leads to contracts for electric locomotives and rolling stock, thereby stabilizing the manufacturing sector. For example, the German federal government plans to invest €106.5 billion by 2029 in railway infrastructure modernization, as reported by DB InfraGO in July 2025. Such substantial investments not only resolve immediate capacity issues but also give manufacturers the long-term confidence to invest in advanced production and resilient supply chains. Concurrently, strict environmental regulations and carbon emission standards are pushing operators to replace diesel fleets with cleaner electric traction technologies. Global climate agreements and national sustainability directives increasingly penalize carbon-intensive transport, making electrification a mandatory requirement for compliance. The rail sector has already exceeded its 2030 target of a 30% absolute emissions reduction, as noted by the International Union of Railways in November 2025, demonstrating the industry's commitment. This regulatory environment creates strong commercial opportunities for manufacturers, as operators expedite fleet renewals to avoid penalties and achieve environmental social governance objectives. The sustained demand for sustainable mobility is reflected in Alstom's order backlog of €92.3 billion in 2025, highlighting the market's ongoing financial strength fueled by global decarbonization efforts.

Market Challenge

The significant capital investment needed for electrification infrastructure poses a major hurdle to the growth of the global electric train market. Building essential components like overhead catenary systems and substations requires substantial upfront funds, often straining national budgets and railway operators' financial resources. This high financial demand acts as a barrier to entry and frequently causes delays in modernization projects, especially in areas with limited public funding. As a result, the transition from diesel to electric rolling stock is considerably slowed, directly impacting the market's expansion rate. The extent of this financial challenge is underscored by recent industry estimates of funding requirements. For instance, the Community of European Railway and Infrastructure Companies (CER) reported in 2025 that the sector

needs €100 billion in co-financing to complete vital Trans-European Transport Network infrastructure. This figure illustrates the immense fiscal pressure on the industry, as difficulties in securing such large capital restrict the geographical reach of electric rail networks. These funding limitations compel operators to prolong the use of older fleets, thus impeding the broader adoption of electric train technologies.

Market Trends

The increasing adoption of Battery-Electric Multiple Units (BEMUs) is significantly transforming the market by offering an effective decarbonization solution for railway segments not equipped with electrification, where installing overhead catenary systems is too costly. Railway operators are progressively replacing older diesel fleets with these hybrid units, which leverage advanced lithium-ion battery technology to operate smoothly on both electrified and non-electrified tracks. This technology eliminates direct exhaust emissions and substantially lowers noise levels without the need for the extensive capital expenditure associated with full infrastructure electrification. Major fleet renewal contracts confirm this trend's commercial appeal; for example, Siemens Mobility secured a notable order from Zweckverband Nahverkehr Westfalen-Lippe (NWL) for 61 battery-powered Mireo Plus B trains, set to replace diesel railcars across the Northern Westphalia network, as reported by Railway Technology in December 2025. In parallel, the development of Smart Digital Signaling Infrastructures is driving a shift from traditional hardware-based interlocking to software-defined European Train Control Systems (ETCS), enhancing network capacity and dependability. By digitalizing trackside equipment and integrating high-capacity communication networks, infrastructure managers can reduce train intervals and automate traffic management, allowing for increased passenger volumes on existing lines. This move towards digital mobility solutions is attracting considerable investment as a more cost-effective option than physically expanding tracks. This structural change is exemplified by Hitachi Rail's €6.3 billion framework agreement with Deutsche Bahn to supply digital interlocking technology and ETCS equipment, a crucial step in modernizing Germany's rail signaling architecture, according to CiTTi Magazine in February 2025.

Key Market Players

Siemens AG

Bombardier Inc

General Electric Company

CRRC Corporation Limited

AEG Power Solutions

POUT Stadler Rail AG

Alstom SA

Kawasaki Heavy Industries Ltd.

Transmash Holding AG

Hitachi Ltd.

Report Scope

In this report, the Global Electric Train Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Electric Train Market, By Train Type

Passenger

Freight

Electric Train Market, By Speed

Less than 100 km/h

100-200 km/h

Above 200 km/h

Electric Train Market, By Battery Type

Gel Tubular

Lead Acid

Lithium-Ion

Others

Electric Train Market, By Energy Transfer

Overhead Lines

Third Rail

On-Board Energy Storage

Electric Train Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Electric Train Market.

Available Customizations:

Global Electric Train Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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