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Europe Autonomous Truck Market Size, Share, Trends & Analysis by Truck Type (Light-Duty Trucks, Medium-Duty Trucks, Heavy-Duty Trucks), by Level of Autonomy (Level 1, Level 2, Level 3, Level 4), by Propulsion Type (IC Engine, Electric), by Industry (Manufacturing, FMCG, Construction & Mining, Military, Others) and Region, with Forecasts from 2025 to 2034.

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Abstracts

Market Overview

The Europe Autonomous Truck Market is projected to witness robust growth between 2025 and 2034, fueled by rising demand for driverless logistics solutions, ongoing advancements in AI and sensor technologies, and persistent challenges around driver shortages. As the logistics and transportation sector navigates labor constraints, environmental mandates, and efficiency demands, autonomous trucks—ranging from light-duty to heavy-duty—are emerging as a transformative solution across diverse industries such as manufacturing, FMCG, construction, and military. The integration of technologies like LiDAR, radar, computer vision, and real-time data analytics is accelerating the development and deployment of autonomous driving systems. The market is anticipated to grow at a compound annual growth rate (CAGR) of XX.XX%, reaching USD XX.XX billion by 2034, up from USD XX.XX billion in 2025.

Market Drivers

Driver Shortage and Rising Labor Costs: Persistent shortages of qualified truck

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drivers across Europe are prompting logistics firms to explore autonomous alternatives to maintain operational continuity and cost efficiency.

Technological Breakthroughs in ADAS and AI: Rapid improvements in advanced driver-assistance systems (ADAS), LiDAR, deep learning algorithms, and 5G connectivity are enabling safer and more reliable autonomous navigation across diverse environments.

Decarbonization and Electrification Synergy: As the push for sustainable transportation intensifies, electric autonomous trucks are gaining traction due to their combined benefits in reducing emissions and lowering long-term operational costs.

Supportive EU Regulations and Testing Corridors: The European Union's pro-innovation stance and real-world testing corridors in countries like Germany, Sweden, and the Netherlands are accelerating the commercial viability of autonomous trucking.

Enhanced Operational Efficiency: Autonomous trucks can operate continuously without breaks, reduce human error, and optimize fuel/electricity consumption, making them highly attractive for long-haul and intra-city freight applications.

Definition and Scope of Autonomous Trucks

Autonomous trucks are commercial vehicles equipped with advanced technologies that enable varying degrees of self-driving capabilities. Depending on the level of autonomy (as defined by SAE levels 1 to 5), these trucks can assist drivers or operate independently without human intervention. The system typically includes sensors (LiDAR, radar, cameras), AI-powered decision-making software, onboard computing units, and vehicle-to-everything (V2X) communication systems.

Market Restraints

Regulatory and Legal Uncertainty: While some countries in Europe are advancing pilot programs, the absence of a standardized regulatory framework for autonomous driving limits mass deployment.

High Development and Infrastructure Costs: Implementing autonomous truck

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solutions requires significant investment in vehicle technology, roadside infrastructure, and data connectivity.

Public Safety and Liability Concerns: Incidents involving autonomous vehicles continue to raise public and legal concerns regarding accountability, safety, and insurance frameworks.

Complexity in Mixed Traffic Environments: Navigating European urban and rural roads—especially with mixed traffic conditions—poses a unique challenge for autonomous systems.

Opportunities

Last-Mile and Intra-Logistics Automation: Growth in e-commerce and urban logistics opens new use cases for autonomous light- and medium-duty trucks in city deliveries and factory-to-warehouse transport.

Military and Defense Applications: Autonomous trucks with all-terrain capabilities are gaining interest in military logistics, where minimizing human exposure is critical.

Smart Infrastructure Integration: Investments in smart roads, connected traffic signals, and edge computing in Europe can enhance the operational safety and efficiency of autonomous fleets.

Data-Driven Fleet Management: Autonomous trucks generate vast data streams, enabling real-time monitoring, predictive maintenance, and route optimization.

Partnerships and Public-Private Collaborations: Strategic collaborations between OEMs, AI startups, and governments are fostering innovation and scaling pilot deployments.

Market Segmentation Analysis

By Truck Type

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Light-Duty Trucks

Medium-Duty Trucks

Heavy-Duty Trucks

By Level of Autonomy

Level 1 (Driver Assistance)

Level 2 (Partial Automation)

Level 3 (Conditional Automation)

Level 4 (High Automation)

By Propulsion Type

Internal Combustion Engine (ICE)

Electric

By Industry

Manufacturing

Fast-Moving Consumer Goods (FMCG)

Construction & Mining

Military

Others

Regional Analysis

Germany, France, UK: Leading in autonomous vehicle R&D, regulatory testing zones, and partnerships between OEMs and tech companies; strong industrial

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logistics demand.

Nordic Countries (Sweden, Norway, Finland): Early adopters of automation in logistics; favorable testing environments for autonomous trucks in cold and rural conditions.

Benelux Region (Netherlands, Belgium, Luxembourg): Innovation hubs for smart mobility and connected infrastructure; supporting autonomous pilot programs in logistics corridors.

Central and Eastern Europe (Poland, Czech Republic, Hungary): Increasing investment in logistics and automotive manufacturing, with growing interest in autonomy for supply chain efficiency.

Southern Europe (Spain, Italy, Portugal): Gradual progress in autonomous freight trials, particularly for last-mile delivery and intermodal transport applications.

As Europe moves toward a future of connected, autonomous, shared, and electric mobility, autonomous trucks will play a pivotal role in reshaping regional freight transport. With supportive policies, technological readiness, and growing industrial demand, stakeholders across the value chain must act decisively to capitalize on this transformative shift from driver-dependent logistics to intelligent automation.

Competitive Landscape

The Europe Autonomous Truck Market is characterized by a dynamic mix of traditional truck manufacturers, autonomous technology providers, and software innovators. The key players include:

Daimler Truck AG

Volvo Group

Scania AB

MAN Truck & Bus SE

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Einride AB

Tesla, Inc.

TuSimple

Plus.ai

Waymo (Alphabet Inc.)

IVECO Group

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