The information and statistics set out in this section and other sections of this document were extracted from the Frost & Sullivan Report, which was commissioned by us, and from various official government publications. We engaged Frost & Sullivan to prepare the Frost & Sullivan Report, an independent industry report, in connection with the [**REDACTED**]. *We believe that the sources of this information are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. The information from official government sources has not been independently verified by us, the Sole Sponsor, Overall Coordinators,* [**REDACTED**], [**REDACTED**], [**REDACTED**], [**REDACTED**], *any of their respective directors and advisors, or any other persons or parties involved in the* [**REDACTED**], *and no representation is given as to its accuracy.*

SOURCE OF INFORMATION

We commissioned Frost & Sullivan to conduct market research on China's autonomous driving solutions for commercial vehicles industry and prepare the Frost & Sullivan Report. Frost & Sullivan is an independent global consulting firm founded in 1961 in New York that offers industry research and market strategies. We have contracted to pay RMB630,000 to Frost & Sullivan for compiling the Frost & Sullivan Report.

In preparing the Frost & Sullivan Report, Frost & Sullivan conducted detailed primary research which involved discussing the status of the industry with certain leading industry participants and conducting interviews with relevant parties. Frost & Sullivan also conducted secondary research which involved reviewing company reports, independent research reports and data based on its own research database. Frost & Sullivan obtained the figures for the estimated total market size from historical data analysis plotted against macroeconomic data as well as considered the above-mentioned industry key drivers. Its market engineering forecasting methodology integrates several forecasting techniques with the market engineering measurement-based system and relies on the expertise of the analyst team in integrating the critical market elements investigated during the research phase of the project. These elements primarily include expert-opinion forecasting methodology, integration of market drivers and restraints, integration with the market challenges, integration of the market engineering measurement trends and integration of econometric variables.

The Frost & Sullivan Report is compiled based on the following assumptions: (i) the social, economic and political environment of the globe and China is likely to remain stable in the forecast period; and (ii) related industry key drivers are likely to drive the market in the forecast period.

OVERVIEW OF CHINA'S ROAD LOGISTICS INDUSTRY

China's logistics sector has established a comprehensive transportation system encompassing multiple modalities, including railways, roadways, waterways, and air transport, each playing complementary roles. As of 2025, China has ranked as the world's largest logistics market by revenue for ten consecutive years, with total social logistics volume exceeding RMB360 trillion. Road logistics plays a dominant and irreplaceable role, consistently handling over 70% of total freight volume.

China's road logistics industry has long been constrained by structural challenges, including driver shortages, high operating costs, elevated traffic accident rates, and low transportation efficiency, which represent critical bottlenecks to the sector's high-quality development. As road logistics demand continues to grow and labor costs steadily rise, traditional operating models are increasingly unable to support the industry's sustainable development. Against this backdrop, the application of autonomous driving technology has emerged as a systemic solution to address these pain points, demonstrating significant value across four core dimensions: enhancing safety, boosting revenue, improving efficiency, and promoting energy savings and carbon reduction.

OVERVIEW OF CHINA'S AUTONOMOUS DRIVING SOLUTIONS FOR COMMERCIAL VEHICLES INDUSTRY

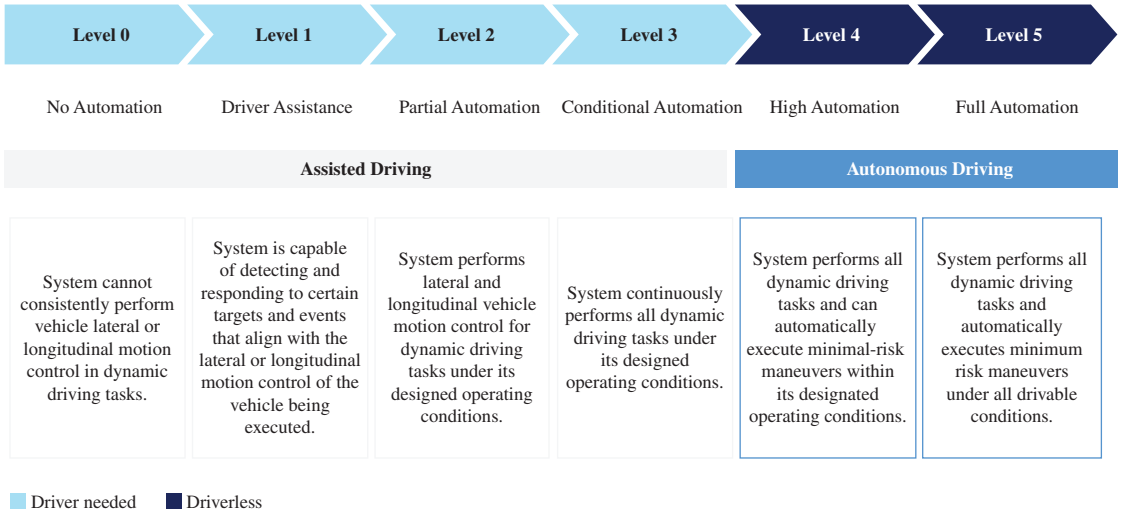
Definition and Classification of Commercial Vehicles and Trucks

Commercial vehicles refer to motorized vehicles primarily designed for the transport of goods, or the execution of professional and commercial tasks. These vehicles are required to comply with all applicable national regulatory standards and must be officially registered with the Vehicle Management Office under China's Public Security Bureau. Commercial vehicles come in a wide variety of types and are typically categorized based on their model and purpose, including heavy trucks, light trucks, vans and others. Among all commercial vehicle categories, trucks constitute the dominant segment and have also become the primary platform for deploying autonomous driving technologies. In China, trucks accounted for approximately 70% of all commercial vehicle sales in 2025, and this share is projected to rise to approximately 75% by 2030. As autonomous driving technologies continue to advance, commercial vehicles are undergoing a systematic shift from basic driver-assistance systems to increasingly sophisticated forms of full automation.

Definition and Classification of Autonomous Driving Solutions for Commercial Vehicles

Autonomous driving technology integrates advanced hardware and software, enabling vehicles to operate with minimal or no human intervention. It is classified from L0 to L5 based on automation level and scenario complexity.

Introduction of Each Level of Autonomous Driving Technology



Source: SAE International, Frost & Sullivan

Note: The SAE classification refers to the Society of Automotive Engineers' standard that defines six levels of driving automation, known as SAE J3016. It is the globally recognized framework used to categorize autonomous driving systems based on how much human input is required.

Autonomous driving solutions for commercial vehicles include intelligent systems that integrate L4 and L5 autonomous driving functions to meet the needs of a wide range of logistics and transportation scenarios. This solution typically consists of two core segments: products and operational services. Products primarily include commercial vehicles, on-board systems and technology maintenance. The operational services emphasize commercial transport operations, fleet management and remote monitoring to ensure efficient and secure system operation.

Value Chain of Autonomous Driving Solutions for Commercial Vehicles Industry

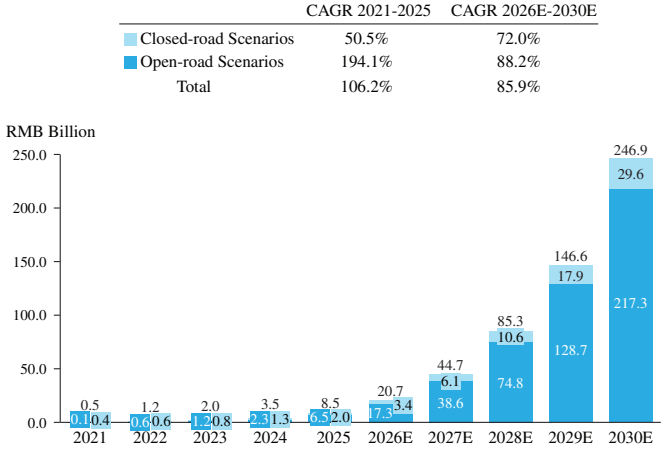
The upstream of the autonomous driving solutions for commercial vehicle industry comprises core hardware component manufacturers, vehicle OEMs and chassis suppliers, software and platform providers, as well as technology service providers supplying essential technologies and infrastructure. In the midstream, the autonomous driving solutions for commercial vehicles providers, work closely with OEMs to integrate autonomous driving systems into vehicles.

In the downstream, autonomous driving solutions for commercial vehicles are primarily deployed in closed-road scenarios, such as ports, border crossings, industrial zones, offering controlled conditions ideal for early-stage adoption, and in open-road scenarios, such as long-haul logistics, urban logistics and public transportation.

Market Size of China's Autonomous Driving Solutions for Commercial Vehicles Industry

Open scenarios are expected to be the primary driver of the autonomous driving solutions for commercial vehicle market. As entry standards for long-haul transportation and urban logistics improve and technologies mature, autonomous driving solution will become more widespread and efficient, spurring market growth. In long-haul transportation, it will enhance efficiency and reduce costs through intelligent infrastructure, while in urban logistics, it will help alleviate congestion and improve efficiency. By 2030, revenue from open-road scenarios are projected to account for over 85% of the total market. The market size of autonomous driving solutions for commercial vehicles in China is presented below:

Market Size of China's Autonomous Driving Solutions for Commercial Vehicles Industry by Revenue, 2021-2030E



Source: China's Public Security Bureau, Industry expert interviews, Frost & Sullivan

Entry Barrier, Threats and Challenges Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry

The autonomous driving solutions industry for commercial vehicles faces key barriers. Technological barriers arise from complex integration of algorithms, sensors, and vehicle-infrastructure-cloud systems, requiring extensive R&D. Product barriers involve regulatory compliance, system integration, and customer customization. Supply chain barriers include stable component sourcing and cost control, while customer barriers relate to high costs and safety concerns, favoring established providers. Despite strong growth potential, the industry in China remains in early-stage commercialization, with open-road deployment requiring strict safety validation and high R&D investment.

Competitive Landscape of China's Autonomous Driving Solutions for Commercial Vehicles Industry

The following chart illustrates the comparison of major autonomous driving solutions for commercial vehicles providers in China. Our Company ranked fourth in autonomous driving solutions for commercial vehicles providers in China in terms of revenue in 2025.

Top 5 Autonomous Driving Solutions for Commercial Vehicles Providers (China), 2025

		Business Model				Major Scenarios Coverage	
Ranking	**Company**	**Product sales**	**Fleet operation**	**Revenue (RMB Billion)**	**Market Share (%)**	**Open-road Scenarios**	**Closed-road Scenarios**
1	Company A	○	●	~1.3	15.3%	Public Transportation	-
2	Company B	●	○	~0.8	9.4%	Urban Logistics	-
3	Company C	●	○	~0.4	4.7%	Urban Logistics	-
4	**Our Company**	◔	◔	**0.23**	**2.7%**	**Long-haul Logistics, Urban Logistics, Urban Transportation**	**Seaports, Border Crossings, Industrial Zones, River Ports, Inland Ports, etc.**
5	Company D	◑	◑	~0.2	2.6%	Urban Logistics-Public Transportation	-
			Top 5 Total	~3.0	34.7%		

Source: Industry expert interviews, Websites of the comparable companies, Frost & Sullivan

Notes:

1. ● represents high revenue proportion, ○ represents low revenue proportion.
2. Company A, founded in 2015 and headquartered in Anhui, China, is an unlisted technology company specializing in artificial intelligence and autonomous driving technologies. It provides autonomous vehicle solutions such as general-purpose humanoid robots, shuttle buses and sanitation operation robots.
3. Company B, founded in 2018 and headquartered in Beijing, China, is an unlisted technology company specializing in the commercial application of L4 autonomous driving technology in logistics scenarios. It provides autonomous vehicle solutions such as last-mile delivery robots, urban short-distance delivery vehicles and regional distribution cargo vehicles.
4. Company C, founded in 2021 and headquartered in Jiangsu, China, is an unlisted technology company specializing in L4 autonomous driving solutions for intra-city freight. It provides standardized transportation solutions for urban feeder transport and B2B unmanned logistics with its core product robovan.
5. Company D, founded in 2017 and headquartered in Guangdong, China, and listed on the Nasdaq Stock Market in 2024 and the Hong Kong Stock Exchange in 2025, focuses on the research, development and commercialization of autonomous driving technologies. Its main businesses include robotaxi, robobus, robosweeper and robovan.

OVERVIEW OF CHINA'S AUTONOMOUS DRIVING SOLUTIONS FOR COMMERCIAL VEHICLES INDUSTRY IN CLOSED-ROAD SCENARIOS

In closed-road scenarios, the autonomous driving commercial vehicle industry is experiencing rapid growth, reflecting increasing recognition of autonomous driving technologies and expanding market demand. As core hardware and software technologies mature, vehicle performance, stability, and reliability continue to improve, encouraging wider adoption in controlled environments. Downstream customers are increasingly focused on enhancing operational efficiency and safety through fleet upgrades and renewals, while declining unit costs have lowered deployment thresholds, further unlocking market potential. This trend reflects a shift toward complete solution-centric business models, strengthens technological R&D capabilities and market competitiveness, and lays a solid foundation for the industry's long-term sustainable development.

Market Drivers and Development Trends Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Closed-road Scenarios

Policies Propelling the Deployment of Autonomous Driving Commercial Vehicles

The Chinese government is accelerating its strategic support for intelligent manufacturing and autonomous driving technologies, providing strong policy momentum for the commercialization of autonomous-driving commercial vehicles. The "Guidelines on Accelerating the Development of Smart Ports and Smart Waterways" (《關於加快智慧港口和智慧航道建設的意見》) released by the Ministry of Transport in 2023 called for the large-scale deployment of next-generation automated guided vehicles (AGVs) and driverless container trucks, with a focus on advancing pilot programs in airport and seaport transportation and related logistics. In November 2025, China's Ministry of Industry and Information Technology (MIIT) announced that it would formulate the "15th Five-Year Plan for the Development of the Intelligent Connected Vehicle Industry" (《"十五五"智能網聯汽車產業發展規劃》), defining industry development goals, outlining key tasks, and accelerating the establishment of standards related to combined driving assistance and autonomous driving. In the same year, MIIT and seven other ministries jointly issued the "Work Plan for Stabilizing Growth in the Automotive Industry (2025-2026)" (《汽車行業穩增長工作方案(2025-2026 年)》), which explicitly stated that pilot programs for the admission and road operation of intelligent connected vehicles should be promoted, L3-level vehicle production access should be conditionally approved, and the improvement of laws and regulations related to road traffic safety and insurance should be advanced.

Technological Breakthroughs Enhance Market Appeal

Advances in core technologies, including perception, decision-making, and control, combined with the application of artificial intelligence (AI), sensor fusion, and deep learning algorithms, have significantly improved vehicles' autonomous perception, environmental adaptability, and path-planning capabilities, fundamentally enhancing system safety, reliability, and commercial feasibility. Among these innovations, the introduction of VLA (Vision-Language-Action) models and World Model is particularly critical. These technologies provide autonomous driving vehicles with human-like cognitive and reasoning abilities, enabling them not only to perceive and execute tasks but also to understand operational semantics, predict environmental changes, and autonomously plan actions.

At the same time, vehicle-infrastructure-cloud collaboration, intelligent control logic, and AI-powered behavior prediction capabilities further enhance system maturity in structured scenarios. This enhancement not only reduces human intervention and improves fleet operational efficiency but also increases the resilience and flexibility of logistics systems.

Evolving Business Models

Autonomous driving solutions for commercial vehicles in closed-road scenarios industry is shifting from an operation-led model characterized by heavy-asset, self-operated transport fleets to a light-asset model centered on product sales, technological enablement, and ecosystem collaboration. Leading companies are increasing focused on the commercial delivery of autonomous heavy trucks and supporting systems, providing standardized and scalable solutions for logistics enterprises, fleet operators, and infrastructure owners. Meanwhile, with improvements in intelligent fleet supervision and closed-loop data capabilities, coordination efficiency across the industry value chain continues to rise. By integrating upstream manufacturers, digital platform providers, and downstream logistics and infrastructure operators, the industry is developing an open, interconnected, service-centric ecosystem. This ecosystem lays a solid foundation for the large-scale deployment and commercialization of autonomous driving commercial vehicles.

Accelerated Global Expansion of Chinese Enterprises

As China's autonomous driving technologies for commercial vehicles in closed-road scenarios continue to mature, the industry is accelerating its expansion into global markets. An increasing number of enterprises are leveraging the Belt and Road Initiative to expand internationally through technology export, project-based collaboration, and ecosystem development, bringing China's autonomous driving technologies and operational experience to key overseas economic corridors. This strategic expansion allows mature autonomous driving products and solutions to be rapidly replicated in regions with similar industrial foundations and transportation scenarios. Through deeper integration with local industrial chains, logistics infrastructures, and regulatory environments, Chinese companies are forming differentiated competitive advantages in international markets.

Entry Barrier, Threats and Challenges Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Closed-road Scenarios

China's autonomous driving solutions for commercial vehicles industry in closed-road scenarios face three primary barriers: scenario access, operational deployment, and integrated delivery. The scenario access barrier involves limited access to concentrated areas like ports and industrial zones, necessitating partnerships and adherence to local standards. The operational deployment barrier requires stable, high-frequency operations, with proven reliability from real-world data. Finally, the integrated delivery barrier demands seamless coordination of autonomous trucks, dispatch systems, and digital platforms, requiring strong integration and execution capabilities across multiple logistics hubs. Although closed-road environments are relatively structured, cross-site replication remains a key challenge. Each seaport, border crossing or industrial zone involves distinct infrastructure layouts, operational workflows and digital systems, requiring scenario-specific system adaptation and deployment adjustments.

Competitive Landscape of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Closed-road Scenarios

In 2025, our Company ranked the fourth in the China's autonomous driving solutions for commercial vehicles in closed-road scenarios by revenue. The following chart illustrates the comparison of major autonomous driving solutions for commercial vehicles in closed-road scenarios providers in China:

Comparison of Major Autonomous Driving Solutions for Commercial Vehicles in Closed-road Scenarios Providers (China)

Company	Our Company	Company E	Company F	Company G	Company H
Maximum Design Speed[1]	**35 km/h**	35 km/h	35 km/h	<30 km/h	35 km/h
Main Vehicle Energy Type	**Diesel Trucks, Electric Trucks, Hydrogen Fuel Cell Trucks, Natural Gas Trucks**	Electric Trucks	Electric Trucks	Diesel Trucks, Electric Trucks	Electric Trucks, Hydrogen Fuel Cell Trucks, Natural Gas Trucks
Maximum Operating Speed[2]	**35 km/h**	35 km/h	≤30 km/h	≤20 km/h	≤30 km/h
Single-Vehicle Positioning Accuracy[3]	**±3 cm**	±2-3 cm	±3-5 cm	±3-5 cm	±3-5 cm

Source: Industry expert interviews, Websites of the comparable companies, Frost & Sullivan

Notes:

1. The industry average for maximum design speed is 20-30 km/h.

2. The industry average for maximum operating speed is 25-30 km/h.

3. The industry average for single-vehicle positioning accuracy is ±5-10 cm.

4. Company E, founded in 2015 and headquartered in Shanghai, China, is an unlisted technology enterprise focusing on artificial intelligence and autonomous driving technologies. Its primary businesses include intelligent vehicles, multi-modal transportation and scenario-based smart solutions, mainly applied in logistics and industrial environments.

5. Company F, founded in 2020 and headquartered in Zhejiang, China, is an unlisted technology company dedicated to the R&D and implementation of autonomous driving technologies in scenario-specific logistics. It mainly provides autonomous driving solutions for large-scale industrial logistics.

6. Company G, founded in 2016 and headquartered in Beijing, China, is an unlisted technology company specializing in autonomous driving technologies. It provides autonomous vehicle solutions such as tractors, shuttle buses and logistics vehicles for scenarios including airports and chemical industrial zones.

7. Company H, founded in 2021 and headquartered in Shanghai, China, is an unlisted company focused on autonomous driving technologies and the application of artificial intelligence. Its main businesses include autonomous horizontal transport solutions, remote control platforms and fleet & equipment dispatch management systems, with applications in ports, and industrial zones.

OVERVIEW OF CHINA'S AUTONOMOUS DRIVING SOLUTIONS FOR COMMERCIAL VEHICLES INDUSTRY IN LONG-HAUL LOGISTICS

Overview of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Long-Haul Logistics

China's autonomous driving solutions for commercial vehicles in long-haul logistics are rapidly emerging as a core component of the intelligent freight ecosystem. This sector focuses on the deployment of autonomous driving heavy trucks on open roads, particularly intercity and expressway routes, providing efficient solutions for high-frequency, structured freight scenarios such as express delivery, less-than-truckload (LTL) logistics, and long-haul cargo transport. These routes are characterized by predictable traffic, fixed routes, and repetitive tasks, creating ideal conditions for the large-scale deployment of autonomous trucks. At present, L4 autonomous driving solutions in long-haul logistics remain at the testing and pilot stage and have not yet achieved large-scale commercial operation.

The rapid technological progress in this sector has been closely supported by national and local policies, infrastructure development, and industry standards. In September 2021, Shandong Province completed the longest intelligent expressway at the time in China, laying the foundation for long-haul autonomous driving operations. In 2023, the industry launched fleet-based autonomous bulk transport solutions, pioneering the "1+N" fleet model and issuing the first official fleet testing permit in China. In February 2024, Beijing initiated the first cross-province commercial operation of L4 autonomous trucks on the Jing-Jin-Tang expressway, marking the formal beginning of large-scale cross-regional deployment. In May 2024, the Beijing Intelligent Connected Vehicle Policy Pilot Zone issued fleet testing permits to multiple industry players, while the Beijing-Tianjin-Hebei region simultaneously released technical standards for vehicle-road collaborative infrastructure, providing both policy and technical support for industrial development. The market for autonomous driving solutions for commercial vehicles in long-haul logistics is expected to begin large-scale development in 2027, driven by the improvement of national policies and access regulations. The market size by revenue is expected to increase from RMB1.2 billion in 2026 to approximately RMB52.7 billion in 2030 at a CAGR of 158.5%.

Market Drivers and Developing Trends Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Long-Haul Logistics

Accelerated Policy Innovation and Regulatory Framework Development

China is rapidly advancing a multi-tiered regulatory and infrastructure framework to support the deployment of autonomous heavy trucks in long-haul logistics scenarios, particularly expressways. In 2023, this policy momentum was reinforced with the release of the "Notice on Piloting Admission and Road Access for Intelligent Connected Vehicles" (《關於開展智能網聯汽車准入和上路通行試點工作的通知》). This notice explicitly allows L3 and L4 vehicles to participate in road access pilots, directly facilitating the deployment of autonomous driving solutions for trucks in key logistics corridors. By 2024, demonstration zones have become a vital regulatory bridge, enabling real-world validation of technologies and business models. Provinces and municipalities such as Beijing, Hebei, Inner Mongolia, and Jiangsu are opening up designated highway sections for mixed-autonomy convoys, while also introducing technical standards to guide scaled deployment.

Infrastructure Development and the Rise of Vehicle-Infrastructure-Cloud Integration

With the ongoing intelligent transformation of China's expressway network, an increasing number of long-haul logistics corridors are becoming equipped to support vehicle-infrastructure-cloud integration, laying the foundation for the large-scale deployment of autonomous driving solutions. By distributing intelligence across vehicles, roadside infrastructure, and cloud platforms, the system optimizes fleet efficiency, reduces the computational burden on individual vehicles, and enables dynamic, cloud-supported operational control. Moreover, it provides a regulatory-aligned deployment pathway, ensuring infrastructure-supported safety assurance, operational transparency, and supervised adoption.

Declining Costs and Business Model Innovation Accelerate Commercialization

With the increasing localization and mass production of critical components such as LiDAR sensors, domain controllers, and computing platforms, the total system cost of autonomous trucks is steadily declining, creating favorable conditions for large-scale commercialization. In this context, the standardized production model has emerged as a pivotal pathway, offering clear advantages over traditional retrofit solutions. By integrating autonomous driving solutions directly during vehicle manufacturing, costs of autonomous driving system can be reduced by 20% to 30%, while improving system integration, ensuring consistent vehicle performance, and enabling reliable mass production. At the same time, business models are evolving from purely asset-heavy operations to hybrid frameworks that combine integrated vehicle and system sales with platform-based value-added services, including remote operations, predictive maintenance, and fleet management software. This shift not only accelerates market expansion for solution providers but also creates sustainable, recurring revenue streams.

Entry Barrier, Threats and Challenges Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Long-haul Logistics

China's long-haul autonomous driving solutions face three main barriers: policy and permission barriers, requiring highway access and cross-regional pilot approvals; operational barriers, involving long-haul logistics across provinces and mixed traffic, demanding real-world validation; and mass production barriers, from shifting to full vehicle-level integration, requiring industrialization and collaboration with manufacturers. Despite policy support and improvements in intelligent highway infrastructure, commercialization of long-haul autonomous trucking remains challenging due to slow pilot progress, cross-regional coordination, and the difficulty of scaling standardized production without alignment among manufacturers, supply chains, and market adoption.

Competitive Landscape of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Long-haul Logistics

As of May 2025, six companies have obtained a total of 26 road freight testing permits within the Beijing High-Level Autonomous Driving Demonstration Zone. Established in September 2020, this zone is recognized as the world's first cloud-controlled, intelligent connected-vehicle-based autonomous driving pilot area. As of May 2026, our Company has deployed a total of 39 testing vehicles across long-haul logistics testing zones in Beijing — Tianjin — Hebei, Inner Mongolia, and Xinjiang.

Comparisons of Major Autonomous Driving Solutions for Commercial Vehicles in Long-haul Logistics Providers (China)

Company	Our Company	Company I	Company J	Company K
Year of Establishment	**2017**	2021	2020	2016
Number of Vehicles Participating in Testing	**4**	8	2	4
Number of Single-testing Vehicles[2]	**2**	2	2	2
Individual Vehicle Driving Mileage (km)	**19,863.5**	6,177.1	9,353.7	55,116.1
Number of Fleet Testing Vehicles[3]	**2**	6	N/A	2
Fleet Testing Mileage (km)	**20,307.9**	42,788.6	N/A	35,886.3
Disengagements per 10,000 km (times)[4]	**1.22**	17.8	119	2.26

Source: Industry expert interviews, Websites of the comparable companies, Society of Automotive Engineers of China, Frost & Sullivan

Notes:

1. All data referenced above are derived from long-haul logistics autonomous driving test results within the Beijing High-level Autonomous Driving Demonstration Zone. Only data from companies actively participating in the tests are included. The above data is updated as of May 2025.

2. Number of single-testing vehicles refers to the number of individual L4 autonomous heavy trucks deployed and tested by each testing entity in long-haul logistics scenarios.

3. Number of fleet testing vehicles refers to the total number of trucks deployed and tested within a fleet, typically consisting of one L2+ human-driven lead truck guiding multiple L4 autonomous follower trucks.

4. Disengagements per 10,000 km measure the frequency of human interventions required during autonomous driving tests; lower values indicate higher system stability and reliability.

5. Company I, founded in 2021 and headquartered in Inner Mongolia, China, is an unlisted technology company dedicated to the R&D and commercialization of L4 autonomous driving technologies. Its main business focuses on autonomous driving solutions for heavy-duty trucks in long-haul logistics scenarios.

6. Company J, founded in 2020 and headquartered in Anhui, China, is an unlisted technology company focused on new energy heavy trucks and intelligent driving solutions. Its core products include intelligent new energy heavy trucks, autonomous driving systems, and battery-electric technologies.

7. Company K, founded in 2016 and headquartered in Guangdong, China and listed on the Nasdaq Stock Market in 2024 and the Hong Kong Stock Exchange in 2025, focuses on the research, development and commercialization of autonomous driving technologies. Its main businesses include robotaxi, robotruck and personally owned vehicles (POV) autonomous driving solutions.

OVERVIEW OF CHINA'S AUTONOMOUS DRIVING SOLUTIONS FOR COMMERCIAL VEHICLES INDUSTRY IN URBAN LOGISTICS

Introduction of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Urban Logistics

As China accelerates the development of smart cities, urban logistics — an essential component of urban infrastructure — is entering a critical stage of intelligent transformation, with autonomous commercial vehicles at the center of this shift. Designed to meet the high-frequency, time-sensitive, and cost-efficient demands of urban delivery, especially in scenarios such as express delivery and cold-chain logistics, commercial vehicles equipped with autonomous driving technology leverage advanced AI algorithms, multi-sensor fusion, and intelligent decision-making systems to operate safely and efficiently in complex urban environments. At present, the market for L4 autonomous driving solutions in urban logistics— particularly for short- to medium-distance transportation—remains in an early stage of development and has yet to achieve large-scale commercial operation. As technology matures and the industrial chain develops, the average selling prices of autonomous driving delivery vans have been steadily declining, reaching as low as RMB30,000–50,000 per unit in 2025, which is driving rapid growth in the market for autonomous driving solutions in urban logistics. The market size by revenue is expected to increase from RMB3.4 billion in 2026 to approximately RMB47.0 billion in 2030 at a CAGR of 92.2%.

Market Drivers and Developing Trends Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Urban Logistics

Acceleration of Scenario Deployment

With the continuous advancement of autonomous driving technology, autonomous commercial vehicles are gradually being piloted in open-road urban logistics scenarios. Deployment in specific use cases such as cold chain delivery, express delivery, and nighttime restocking is accelerating. Although these scenarios involve complex and dynamic traffic conditions, the rapid development of urban digital infrastructure is supporting wider adoption of autonomous commercial vehicles in "last-mile delivery" and "short- to medium-distance distribution". At the same time, innovative regulatory frameworks such as pilot zones and data-sharing platforms are lowering adoption barriers, facilitating technology validation and optimization, and paving the way for broader deployment.

Strengthening Policy Guidance and Establishing Standards

The Chinese government has introduced a comprehensive set of policies and supportive measures to accelerate the commercialization of autonomous driving technologies. For example, as of 2025, China has established 17 national-level autonomous driving pilot zones, 7 intelligent connected vehicle demonstration zones, and 20 pilot cities for the vehicle-road-cloud integration program, creating a robust foundation of real-world environments for technology validation, scenario testing, and early-stage deployment. Building upon these physical testing grounds, the policy system in China is evolving from supporting pilot demonstrations to enabling large-scale, standardized, and replicable commercialization paths — laying the groundwork for a nationwide intelligent logistics transformation.

Technological Innovation

The deep integration of cutting-edge technologies — such as AI, world models, V2X communication, and edge computing — is driving major breakthroughs in autonomous driving solutions for commercial vehicles in urban logistics. These technological advancements are building a robust foundation for the large-scale deployment of autonomous commercial vehicles in urban logistics and accelerating the industry's transition toward higher levels of intelligence and automation.

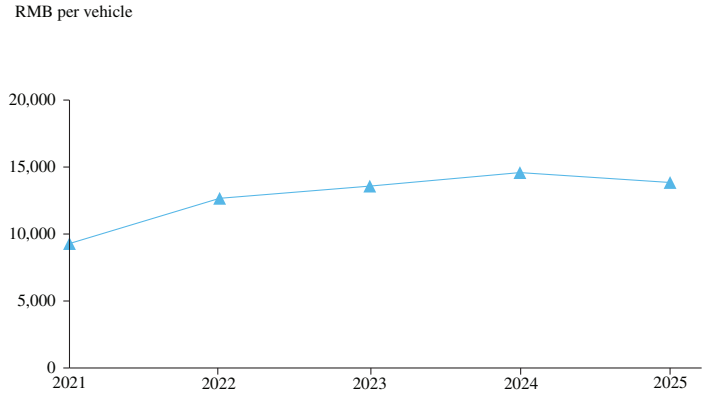
Entry Barrier, Threats, and Challenges Analysis of China's Autonomous Driving Solutions for Commercial Vehicles Industry in Urban Logistics

China's autonomous driving solutions for commercial vehicles in urban logistics face three main barriers: urban scenario adaptation, requiring advanced perception and decision-making in dense traffic; vehicle-infrastructure-cloud integration, needing coordination with roadside infrastructure, V2X, and cloud platforms; and city-level deployment, involving local testing standards, safety protocols, and regulatory approvals. Despite policy support and expanding 5G coverage, adoption remains limited by slow urban infrastructure digitalization, coordination challenges, and the need for stable performance in complex, high-frequency delivery scenarios.

RAW MATERIAL ANALYSIS

The autonomous driving computing unit (ADCU) is the core hardware enabling perception, decision-making, and control in autonomous trucks. Its main components are high-performance SoC and MCU chips, which account for the bulk of ADCU costs. The global average selling price of the core chipset rose from 2021 to 2024 due to global semiconductor shortages and the adoption of next-generation high-performance SoCs. In 2025, the average selling price of core chipset in ADCU fell slightly by 5.1% as chip production scaled up and supply recovered. Looking ahead, further technology maturation and production scaling are expected to drive gradual cost reductions, making ADCUs more affordable and supporting broader adoption of autonomous driving solutions.

Average Price of Core Chipset in ADCU (Global), 2021-2025



Source: Industry expert interviews, Frost & Sullivan