EV CITY PROFILE

LEADING CHINESE CITIES FOR NEW ENERGY URBAN LOGISTICS VEHICLES

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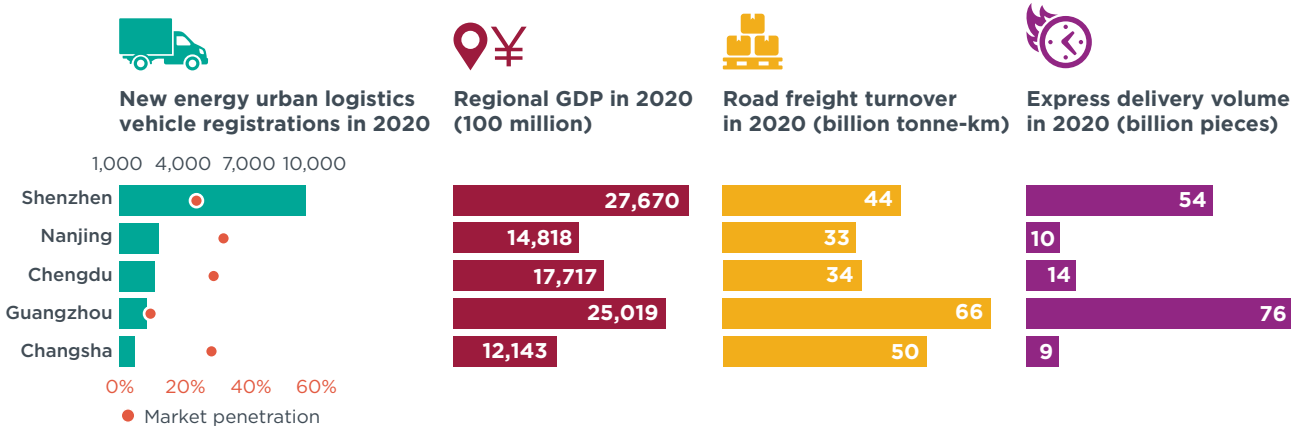

KEY MARKET FACTS

- Annual registrations of new energy (NE) urban logistics vehicles in China exceeded 40,000 in 2020.
- Shenzhen, Nanjing, Chengdu, Guangzhou, and Changsha had the most registrations in 2020, constituting more than 46% of the national total. The corresponding market penetrations in those cities were 23.4%, 31.6%, 28.6%, 9.5%, and 28.0%, respectively.
- Shenzhen, with the greatest regional GDP among these five top cities, came in second for express delivery volume and third for road freight turnover.

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POLICY DRIVERS IN LEADING CITIES

- China launched the Green Freight City program in 2018 with the goal of encouraging nationally financed pilots for adopting NE urban logistics vehicles. The five leading cities were all part of the program (Table 1).
- Four cities had set deployment targets for NE urban logistics vehicles, but the types of targets varied from deployment numbers to deployment percentages.
- Shenzhen was the only leading city to offer an operation subsidy, which was a tiered scheme based on battery capacity.
- All these leading cities offered road-access privileges to NE urban logistics vehicles, either in the form of access to restricted roads or to restricted zones.

TABLE 1

City-level actions promoting new energy urban logistics vehicles

City-level urban logistics vehicle actions				
City	Green Freight City program demonstration city	Target	Operation subsidy and incentive	Preferential road access
Shenzhen	●	●	●	●
Nanjing	●*	●		●
Chengdu	●	●		●
Guangzhou	●	●		
Changsha	●			●

*Candidate for Green Freight City Program

SHENZHEN

» Aimed to deploy 20,000 fully electric urban logistics vehicles from 2016 to 2020 through multiple measures.

» Measures included providing local subsidies for confirmed operation, giving road access privileges to electric trucks on otherwise traffic-restricted roads, setting green logistics zones, requiring the use of only ultra-clean trucks, and more.

» Expanded the buildout of large-scale, centralized charging stations in logistics hubs and commercial areas, and offered parking-fee incentives.

CHENGDU

» Aimed at electrifying all urban logistics vehicles used within the fourth ring road.

» Restricted the use of certain vehicles in central urban areas on certain days and on severely polluted days; New Energy Vehicles (NEVs), including new energy urban logistics vehicles, were exempted from this.

NANJING

» Targeted 100% NEV at the provincial level in 2020 for public service vehicles, including urban logistics and specified NEVs or clean energy vehicles.

» Restricted trucks from driving in central urban areas but granted travel passes to NEVs.

» As home to Nanjing Golden Dragon, China's second-largest NE urban logistics vehicle manufacturer in 2020, the city had the most comprehensive service network from the automaker.

» Being near China's charging service giant StarCharge in Changzhou, Nanjing had an advantage in ensuring charging convenience and affordability.

» Aimed to install one charger for every two NE urban logistics trucks by 2021 and provided parking incentives for NE logistics vehicles.

GUANGZHOU

» Targeted 50% NEV in new public service vehicles including urban logistics and specified NEVs.

» Did not provide any dedicated favorable road access to new energy trucks in 2020, and also did not provide substantial subsidies for new energy trucks.

» With urban trucks averaging daily mileage of about 200 km in Guangzhou, the fuel-cost savings from using NE logistics vehicles—combined with convenient and cheap charging—made NE logistics vehicles an appealing choice for local truck drivers.

POLICY ANALYSIS

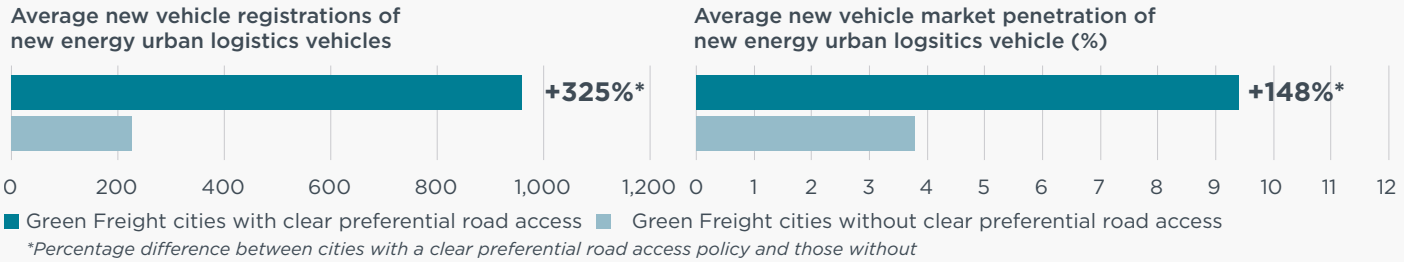
» Our research shows that Green Freight cities with clear preferential road access policies for NE urban logistics vehicles had an average of 4 times more registrations and 2.5 times higher market penetration than those without (Figure 1).

» We also found that Green Freight Demonstration cities had an average of 19 times more registrations and 5 times higher market penetration than non-Green Freight Demonstration cities.

» Almost half of the top 40 cities with the highest number of NE urban logistics vehicle deployments in 2020 were either Green Freight Demonstration cities or candidate cities.

FIGURE 1

Differences in new vehicle registrations and market penetration of new energy urban logistics vehicles between Green Freight cities with and without a clear preferential road access policy, 2020.



Percentage difference between cities with a clear preferential road access policy and those without

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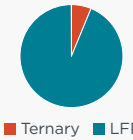
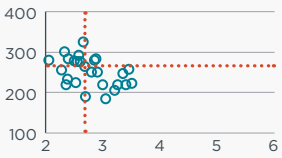
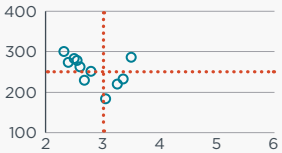
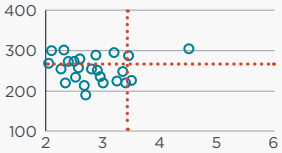
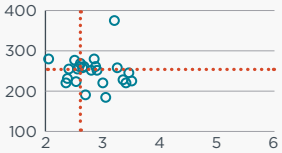
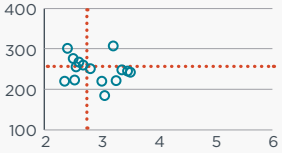
TECHNICAL CHARACTERISTICS AND TOP-SELLING VEHICLE MODELS

» Figure 2 provides details of battery technology, gross vehicle weight (GVW), electric range distributions, and the top-selling vehicle models for NE urban logistics vehicles in these leading cities.

FIGURE 2

Technical characteristics and top-selling vehicle models of new energy urban logistics vehicles in the top five cities for new energy commercial vehicle registrations, 2020.

City	Battery technology	E-range (km) distribution by GVW (t)	Top model	Model %	OEM
Shenzhen			Youyou	9%	Chery Anhui
			EV350	8%	DFAC
			Haoyun 1	5%	SRM
			Yuancheng E5L	5%	Shanxi NEV
			EC35	4%	Chongqing Ruichi
Nanjing			Skywell D10	48%	Nanjing Golden Dragon
			Skywell D07	19%	Nanjing Golden Dragon
			Youyou	3%	Chery Anhui
			Skywell E7	2%	Nanjing Golden Dragon
			Skywell K10	2%	Nanjing Golden Dragon
Chengdu			EV350	11%	DFAC
			Youyou	6%	Chery Anhui
			EC35	6%	Chongqing Ruichi
			Haoyun 1	5%	SRM
			J6F	3%	None top OEM
Guangzhou			Youyou	19%	Chery Anhui
			EC35	7%	Chongqing Ruichi
			Changanzhixing 9EV	6%	None top 10 OEM
			Haitun EV	4%	Chery Anhui
			T5	4%	None top 10 OEM
Changsha			Yuancheng E5L	20%	Shanxi NEV
			Haitun EV	17%	Chery Anhui
			EV350	7%	DFAC
			AUMARK Zhilan	5%	Foton
			Youyou	4%	Chery Anhui

Note: Horizontal red lines equal the sales-weighted average electric range; vertical red lines equal the sales-weighted average gross vehicle weight; model % refers to the vehicle model's share of new registrations of new energy urban logistics vehicles in the corresponding city.

DEFINITIONS, ASSUMPTIONS, AND METHODOLOGIES

- "New energy vehicle" is an umbrella term that encompasses battery electric, plug-in hybrid electric, and hydrogen fuel cell electric vehicles.
- Clear preferential road access policies in Figure 1 refer to the ones with implementation details such as vehicle type, time, and area.
- The policy analysis section was based on the annual registration data of new energy urban logistics vehicles in 2020.
- Green Freight Cities include 16 demonstration cities plus 30 pilot candidate cities.
- Green Freight Demonstration cities are those that have passed the national performance evaluation; pilot candidate cities are those waiting for the evaluation.

For more information, please refer to our published report on new energy commercial vehicles in leading cities.[1]

1 Lingzhi Jin and Yidan Chu, "Accelerating New Energy Vehicle Uptake in Chinese Cities: Assessment of New Energy Commercial Vehicle Policies" (Washington, DC: International Council on Clean Transportation, 2023), https://theicct.org/publication/commercial-nevs-cities-policies-jul23/.

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