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中国新能源商用车地方推广特点及发展趋势

Characteristics and Development Trends of Local Promotion of New Energy Commercial Vehicles in China

中国汽车技术研究中心有限公司

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目录

Contents

01 新能源商用车地方政策特点

01 Characteristics of local policies for new energy commercial vehicles

02 政策作用下新能源商用车地方市场表现

02 Local market performance of new energy commercial vehicles
under the influence of policies

03 未来发展趋势

03 Future development trend

1.1 前期政策回顾：国家层面主导，地方细则配套

Preliminary policy review: dominated by the central government and supported by local rules


- 新能源商用车政策支持主要体现在规划、购置运营补贴、基础设施配套建设补贴、空气污染防治等方面。
- 国家政策与地方政策形成“主导-落实配套”关系特点。
- Policy support for new energy commercial vehicles is mainly reflected in planning, purchase and operation subsidies, infrastructure supporting subsidies, air control, etc.
- National policies and local policies form the characteristics of "leading and supporting" relationship.

规划 Planning

国家：《节能与新能源汽车产业发展规划（2012—2020年）》
National: "Energy-saving and New Energy Automobile Industry Development Plan (2012-2020)"

2015年	2020年
50万	500万


地方：规划至2020年超500万辆
Local: Planning to exceed 5 million vehicles by 2020




占比规划 43%
Accounted for 43% of planning

补贴 Subsidy


国家补贴 State subsidies + **地方补贴** Local subsidies
(根据国家补贴按照一定比例给予补充 Supplement according to a certain proportion of state subsidies)



购置
Purchase



运营
Operation



基础设施建设
infrastructure

空气污染防治 Air pollution control

国家：《打赢蓝天保卫战三年行动计划》 National: "Three-year Action Plan for Winning the Blue Sky Defense War"

重点领域、重点区域，推广使用新能源汽车 Promote the use of new energy vehicles in key areas and regions

地方：细化落实 Local: detailed implementation



年度目标
annual target



细化举措
Refinement

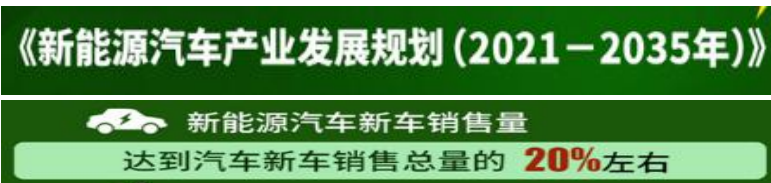
党政机关用车 Party and government organs car
差异化路权 Differentiated right of way

1.2 新形势政策特点：国家试点鼓励，以奖代补

Policy features of new situation: to encourage national pilots and to replace subsidies with awards

- 国家政策支持明确发展方向、推动技术创新，逐渐退出普惠式补贴机制。
- 鼓励机制多采用试点推广、以奖代补的方式，如公共领域电动化、燃料电池汽车示范应用、新能源汽车换电模式应用试点。
- The national policy supports to clarify the development direction, promote technological innovation, and gradually withdraw from the inclusive subsidy mechanism.
- The incentive mechanism mostly adopts pilot promotion and using awards instead of subsidies, such as electrification in the public domain, demonstration application of fuel cell vehicles and pilot application of battery exchange mode of new energy vehicles

规划
Planning



技术路线图
Technology
Roadmap

9大技术方向：轻量化、智能制造与关键装备、节能汽车、纯电动与插电式混合动力汽车、燃料电池汽车、动力电池、电驱动总成、充电基础设施

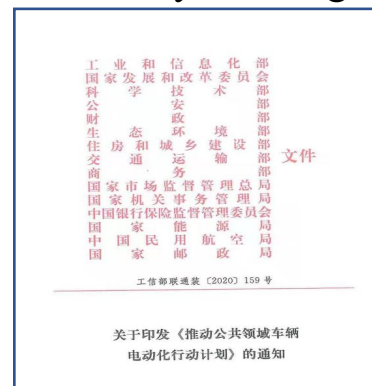
9 major technical directions: lightweight, intelligent manufacturing and key equipment, energy-saving vehicles, pure electric and plug-in hybrid vehicles, fuel cell vehicles, power batteries, electric drive assemblies and charging infrastructure

补贴
Subsidy

将2020年底到期的新能源汽车购置补贴和免征购置税政策延长两年

Extend purchase subsidies and the exemption of tax for new energy vehicles for two years

试点推广
以奖代补



- 总体推广目标 ●
- 推广换电车辆10+万辆，换电站1000+座
- 突破换电产品关键技术
- 打通基础设施审批流程
- 建立换电汽车监管平台
- 健全换电技术标准体系
- 形成换电模式产业生态
- 构建换电政策支持体系

1.2 新形势政策特点：地方主导、因地制宜、创新机制

Policy features of new situation: local leadership, local conditions and innovation mechanism

- 特定领域加大推广应用力度、公共领域电动化进程加快。
- 差异化路权管理逐渐扩展至商用车领域，推动新能源商用车发展。
- The application in specific fields and public sphere have been strengthened and accelerated.
- Differentiated right of way management is gradually extended to the field of commercial vehicles to promote the development of new energy commercial vehicles.

昆明 Kunming

新增和更新的城市公交车、城市配送物流车、网络预约出租汽车、分时租赁汽车、驾培及考试等乘用车、景区内观光车、园林洒水车、环卫车、道路维护等市政工程用车，采购和使用新能源汽车

New and updated urban buses, urban distribution and logistics vehicles, network reservation taxis, time-sharing rental vehicles, driving training and examination and other passenger vehicles, scenic spot light viewing vehicles, garden sprinkler, sanitation vehicles, road maintenance and other municipal engineering vehicles are required to use new energy vehicles

郑州 Zhengzhou

完成巡游出租车新能源替代，新能源水泥罐车、渣土车总数分别达到1000台，新能源物流车总数达到30000台以上。

The complete replacement of new energy for cruise taxis is required. The goal of new energy cement tankers and muck trucks should be 1000 respectively, and the goal of new energy logistics vehicles is more than 30000.

深圳 Shenzhen

纯电动轻、微型货车(包含轻型厢式货车和轻型封闭式货车),除每天7时至20时禁止通行深南大道外,允许在深圳市其余道路行驶。

Pure electric light and mini trucks (including light vans and light closed trucks) are allowed to drive on other roads in Shenzhen except Shennan Avenue, which is prohibited from 7:00 to 20:00 every day.

成都 Chengdu

全天24小时禁止国III及以下排放标准的货车驶入成都绕城高速（G4202, 不含）以内区域。以下车辆不受限制：悬挂新能源汽车号牌货车

Trucks with China III and below emission standards are prohibited from driving into the area within Chengdu Ring Expressway (G4202, excluded) 24 hours a day. The following vehicles are not restricted: trucks with new energy vehicle license plates

目录

Contents

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02 Local market performance of new energy commercial vehicles under the influence of policies

03 未来发展趋势

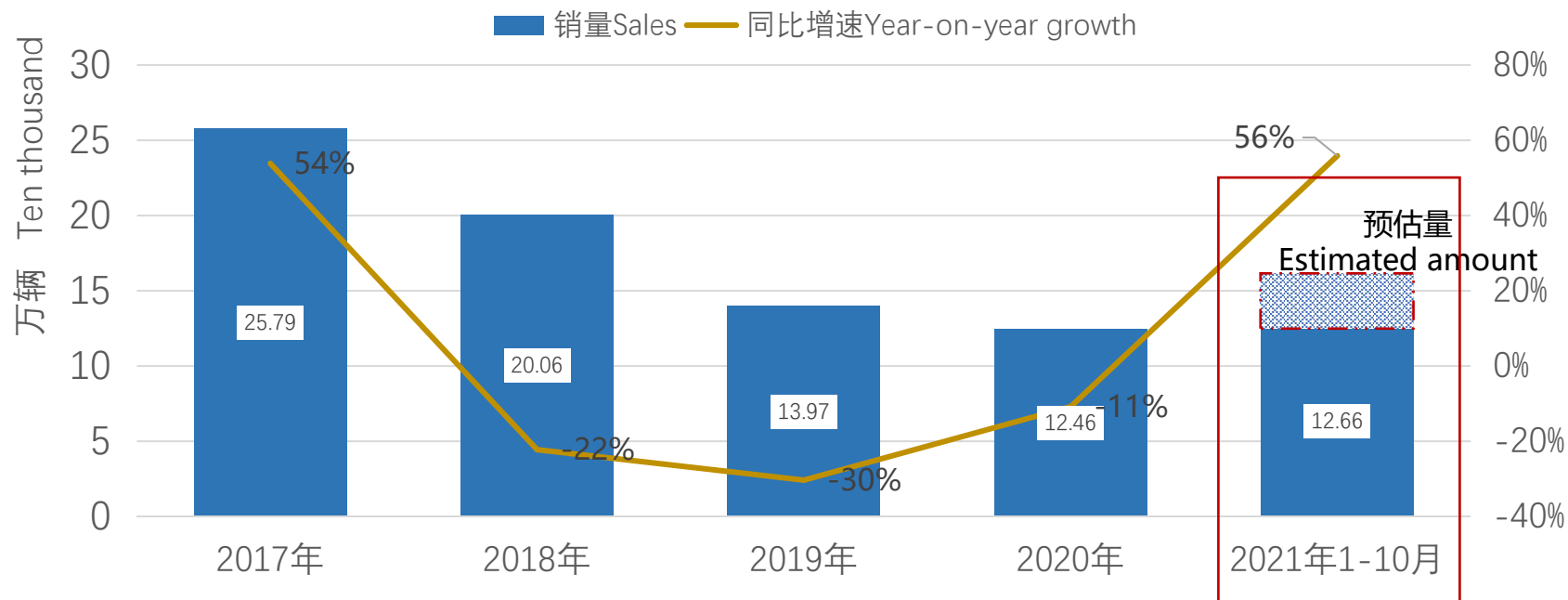
03 Future development trend

2.1 新能源商用车销量止跌反弹

Sales of new energy commercial vehicles stopped falling and rebounded

- 新能源商用车市场经历四年连续下滑后反弹，2021.1-10累计销量12.66万辆，同比增长55.88%，预计全年销量将突破16万。
- The new energy commercial vehicle market rebounded after four consecutive years of decline. The cumulative sales volume of 2021.1-10 was 126,600, a year-on-year increase of 55.88%. The annual sales volume is expected to exceed 160,000.

2017-2021年新能源商用车销量走势
2017-2021 New Energy Commercial Vehicle Sales Trend



增长因素分析: Analysis of growth factors:

- 物流车电动化进程加快
Speeding up the electrification of logistics vehicles
- 重型商用车电动化布局，换电模式应用兴起
The electric layout of heavy commercial vehicles, the rise of the application of battery swapping modes
- 地方特色激励政策实施
Implementation of local incentive policies

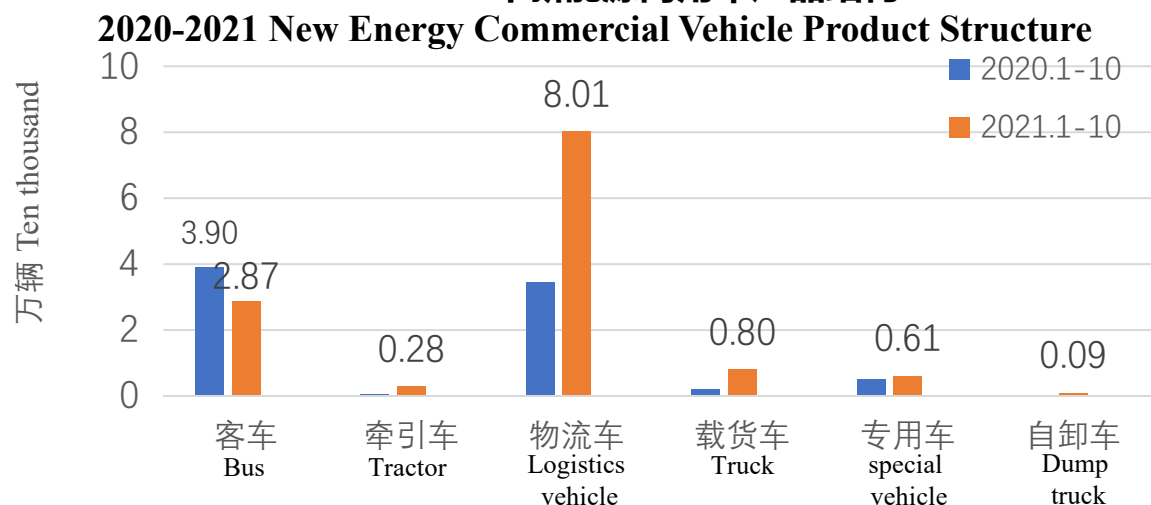
数据来源：终端销量
Data source: terminal sales

2.2 新能源商用车市场产品结构调整加快

Product structure adjustment in the new energy commercial vehicle market is accelerating

- 客车市场缩量，2021年1-10月销量2.87万辆，同比降低26%；货车市场激增，尤其表现在物流车领域，2021年1-10月销量8.01万辆，同比增幅133%；
- 除物流车以外其他货车领域，采用换电技术车型开始进入市场，2021年1-10月累计销量近2000台。
- The passenger car market is shrinking, with 28,700 sales from January to October 2021, a year-on-year decrease of 26%; the truck market has surged, especially in the field of logistics vehicles, with 80,100 sales from January to October 2021, a year-on-year increase of 133%;
- Except for logistics vehicles, vehicles with battery swap technology have begun to enter the truck market. Cumulative sales from January to October 2021 are nearly 2,000 units.

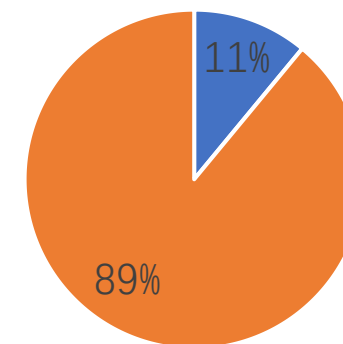
2020-2021年新能源商用车产品结构



增量 Increment	-10317	2278	45701	5894	1160	657
同比 Year-on-year	-26%	429%	133%	284%	24%	278%

2021.1-10 换电车型分布

2021.1-10 Distribution of Battery Swap Models



■ 换电车型 ■ 非换电车型
Battery swap models Non-swap models

数据来源：终端销量
Data source: terminal sales

2.3 不同类型商用车推广区域差异较大

The promotion areas of different types of commercial vehicles vary greatly

- 城市公交逐渐趋于饱和，市场集中度相对较低；
- 物流车和换电车型市场区域集中度较高，个别地区带动作用显著。
- Urban public transport tends to saturate gradually, and the market concentration is relatively low;
- The regional concentration of logistics vehicle and battery swap model market is high, and the driving effect of individual regions is significant.

客车销量/Bus sales TOP10

使用省份 Province	数量 Sales	占比 Proportion
四川	2237	7.79%
浙江	2220	7.73%
广东	2172	7.56%
湖北	2034	7.08%
江苏	1694	5.90%
山东	1664	5.80%
辽宁	1514	5.27%
安徽	1498	5.22%
陕西	1201	4.18%
河北	1083	3.77%

物流车销量/Logistics vehicle sales TOP10

使用省份 Province	数量 Sales	占比 Proportion
广东	24600	30.70%
福建	8133	10.15%
江苏	6986	8.72%
上海	6546	8.17%
四川	5994	7.48%
陕西	3765	4.70%
重庆	3431	4.28%
云南	2932	3.66%
北京	2917	3.64%
浙江	2044	2.55%

换电车型销量/Battery swap model sales TOP10

使用省份 Province	数量 Sales	占比 Proportion
河北	1357	68.43%
山东	96	4.84%
江苏	62	3.13%
湖南	60	3.03%
上海	59	2.98%
陕西	56	2.82%
浙江	41	2.07%
新疆	37	1.87%
广东	35	1.77%
内蒙古	29	1.46%

2.4-1 客车：公交客车保有量市场占比较高，推广区域表现三类特征

Buses: The market share of bus ownership is relatively high, and there are three characteristics of the promotion region

- 第一类：经济发达，电动化转型积极区域；第二类：电动化渗透率相对较低，市场存在空间；第三类：蓝天保卫战等环保政策驱动。
- The first category: economically developed areas with active electrification transformation; the second category: the penetration rate of electrification is relatively low, and there is room for the market; the third category: driving by the blue sky defense war and other environmental protection policies.

省份 province	截止2020年公交客车电动化（根据保有量统计渗透率） Electric rate of public buses by 2020 (Statistics of penetration rate based on car ownership)	地域特征 Regional characteristics
广东 Guangdong	90.07%	经济发达，电动化转型最为积极 The economy is developed and the electrification transformation is the most active
四川 Sichuan	34.67%	电动公交渗透率相对较低 Electric bus penetration rate is relatively low
湖北 Hubei	48.34%	
辽宁 Liaoning	50.35%	
江苏 Jiangsu	63.04%	蓝天保卫战重点区域（长三角地区） Key areas of the blue sky defense war (Yangtze River Delta)
浙江 Zhejiang	66.49%	
安徽 Anhui	68.48%	
陕西 Shaanxi	77.49%	蓝天保卫战重点区域（汾渭平原） Key areas of the Blue Sky Defense War (Fenwei Plain)
河北 Hebei	73.40%	蓝天保卫战重点区域（京津冀及周边） Key areas of the blue sky defense war (Jing-Jin-Ji region and surrounding areas)
山东 Shandong	71.03%	

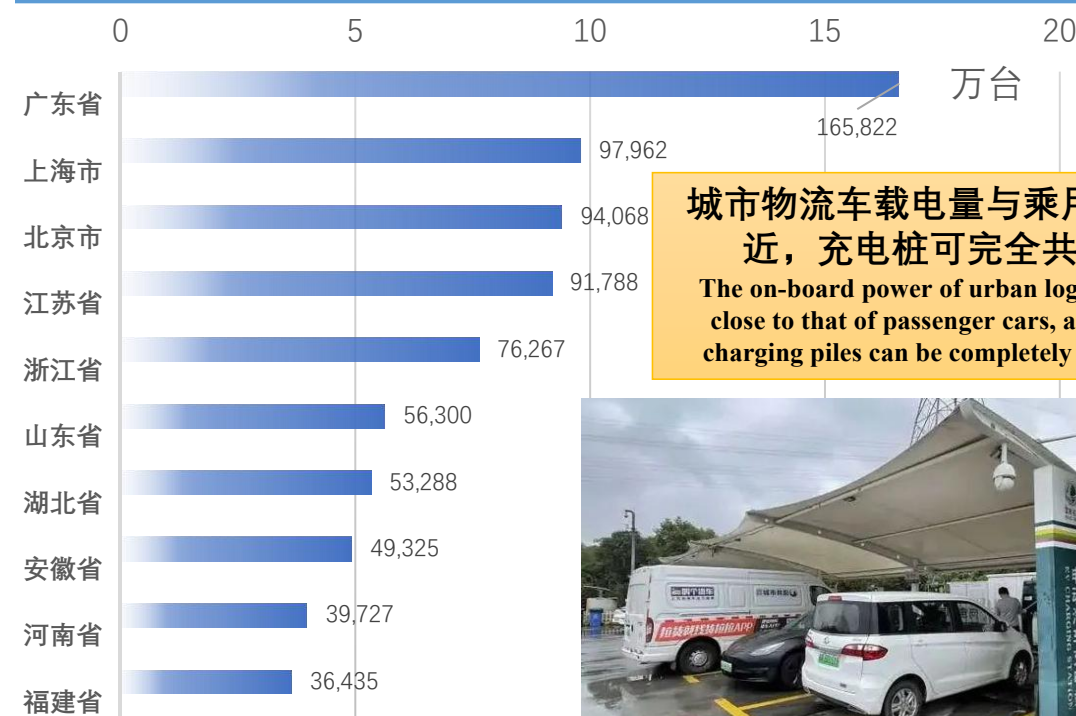
2.4-2 物流车：主要增量贡献地区经济基础和产业环境良好

Logistics vehicle: Regions with good economic foundation and industrial environment contribute the the main increments

- 电动物流推广靠前城市具备较好的政策环境和较强经济实力，充电基础设施建设相对完善。
- The cities ahead of the promotion of electric logistics have a good policy environment and strong economic strength, and the charging infrastructure construction is relatively perfect.

政策完善 Policy improvement		实施地区	政策类型	实施地区	
路权开放 Open right of way		深圳	加快新能源 替换	上海	
		广州		福建	
		成都	Speed up the replacement of new energy vehicles	陕西	
		重庆		昆明	
经济发达 Developed economy		2021前三季度GDP	排名	城市	2021前三季度GDP
1	上海	30866	6	苏州	16396
2	北京	29753	7	成都	14438
3	深圳	21791	8	杭州	13151
4	广州	20029	9	武汉	12317
5	重庆	19951	10	南京	11907

公共充电基础设施TOP10地区占比达71.6%
The top 10 areas of public charging infrastructure account for 71.6%



城市物流车载电量与乘用车接近，充电桩可完全共用
The on-board power of urban logistics is close to that of passenger cars, and the charging piles can be completely shared



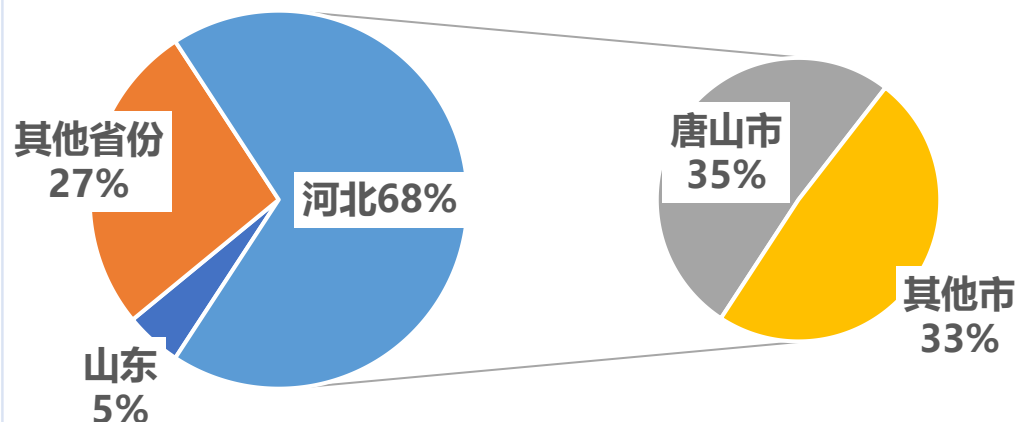
2.4-3 换电重卡：示范运营起步，唐山等重工业地区先行

Battery swap heavy truck: demonstration operation started, and Tangshan took the lead

- 2021年10月，工信部发布《关于启动新能源汽车换电模式应用试点工作的通知》。
- 从推广情况看，换电车型主要集中在河北、山东等重工业发达、生态环境有待于改善等地区。
- In October 2021, MIIT issued the pilot program for the application of the battery swap model for new energy vehicles.
- Electric models are mainly concentrated in Hebei, Shandong and other regions with developed heavy industry.

换电车型主要集中在河北省的唐山、邯郸等地区

The battery swap models are mainly concentrated in Tangshan, Handan and other areas of Hebei Province.



国家政策：《关于启动新能源汽车换电模式应用试点工作的通知》 National policy: the pilot program for the application of the battery swap model for NEVs

纳入此次试点范围的城市共有11个，其中综合应用类城市8个(北京、南京、武汉、三亚、重庆、长春、合肥、济南)，**重卡特色类3个(宜宾、唐山、包头)**

A total of 11 cities are included in the scope of the pilot, including 8 comprehensive application cities (Beijing, Nanjing, Wuhan, Sanya, Chongqing, Changchun, Hefei, Jinan), and 3 heavy-duty truck specialties (Yibin, Tangshan, Baotou)

地域特征——以唐山为例/Regional characteristics -- Taking Tangshan as an example

地理位置：北京周边，港口；Geographical location: around Beijing, port;
产业和生态环境特征：钢铁厂众多，重工业发达，空气污染相对严重；Industrial and ecological environment characteristics: There are many steel plants, heavy industry is developed, and air pollution is relatively serious;

适用性：换电重卡较适合于港口外驳、物流园区及钢厂短驳等高频使用场景
Applicability: Battery swap heavy trucks are more suitable for high-frequency use scenarios such as port transfers, logistics parks and short transfers in steel plants

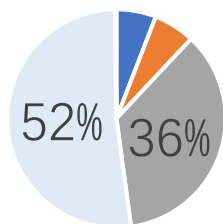
2.5 应用场景差异影响产品性能特征，体现市场需求

Differences in application scenarios influence product performance characteristics and reflect market demand

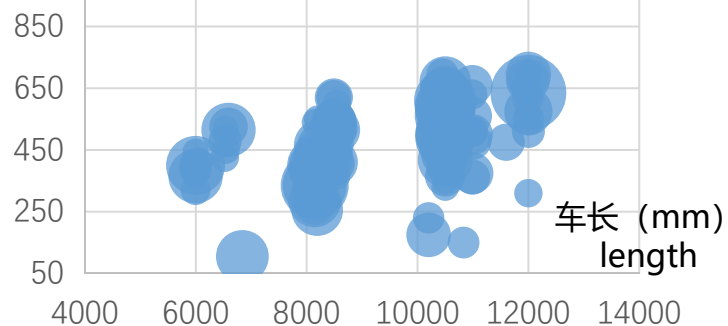
- 电动化市场成熟，产品多元化发展，反之，产品较为单一集中。
- 受到应用场景影响，客车续驶里程要求更高，物流车多集中250km左右，换电车型主要应用于重卡领域。
- The electrification market is mature and the products are diversified. On the contrary, the products are relatively single and concentrated.
- Affected by application scenarios, passenger vehicles have higher requirements for driving mileage. Logistics vehicles are mostly concentrated around 250km. The battery swap models are mainly used in the field of heavy trucks.

客车 bus

- L≤6
- 6<L≤8
- 8<L≤10
- 10<L≤12
- L>12



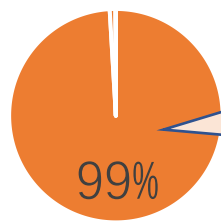
续驶里程 (km) Driving range



注：气泡大小代表销量

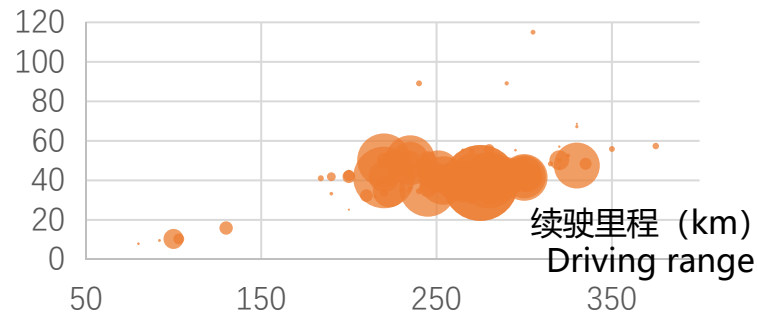
Note: The size of the bubble represents sales

物流车 Logistics vehicle



总质量4.5t以下
The total mass is
below 4.5t

带电量 Battery power (kWh)



注：气泡大小代表销量

Note: The size of the bubble represents sales

换电车型 Battery swap models

换电车型 Battery swap models	数量 quantity
牵引车 Tractor	1357
自卸车 Dump truck	421
专用车 special vehicle	153
物流车 Logistics vehicle	52
总计 total	1983

典型产品 Typical products



牵引车-总质量49000kg
Tractor-total mass is 49000kg



自卸车-总质量31000kg
Dump truck-total mass is 31000kg

目录

Contents

01 新能源商用车地方政策特点

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under the influence of policies

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03 Future development trend

3.1 国家背景：双碳目标要求下电动化方向明确

National background: the direction of electrification is clear under the dual-carbon goals

- 2021年10月国务院印发《2030年前碳达峰行动方案》，提出“碳达峰十大行动”，其中“交通运输绿色低碳行动”明确到2030年新能源、清洁能源动力占比目标。
- In October 2021, the State Council issued the "Action Plan for Carbon Dioxide Peaking Before 2030", and proposed the "Top Ten Actions for Carbon Peaking", in which "the action for promoting green and low-carbon transportation" clarified the target for vehicles fueled by new and clean energy by 2030.



《2030年前碳达峰行动方案》

"Action Plan for Carbon Dioxide Peaking Before 2030"

深入贯彻碳达峰、碳中和的重大战略决策，扎实推进碳达峰行动

Deeply implement the major strategic decisions of carbon peaking and carbon neutrality, and solidly promote the carbon peaking action



重点任务：“十大行动”之“交通运输绿色低碳行动”

Key tasks: "the action for promoting green and low-carbon transportation" of the "Ten Major Actions"

到2030年，当年新增新能源、清洁能源动力的交通工具比例达到**40%左右**

By 2030, the share of incremental vehicles fueled by new and clean energy will reach around 40%.

3.2 地方行动：多因素协同推动商用车加快电动化

Local action: multi-factor coordination promotes the acceleration of the commercial vehicle electrification

- 地方城市不仅要为国家实现目标贡献力量，更要多因素综合考虑，如环保、经济发展等，商用车电动化转型势在必行。
- Local cities must not only contribute to the realization of the country's goals, but also comprehensively consider many factors, such as environment protection and economic development. The transformation of commercial vehicles to electrification is imperative.

商用车 电动化 推动因素

Driving factors for
the electrification of
commercial vehicles



环保 Environment protection

商用车领域是大气污染防治重点管理对象，重工业省份城市、蓝天保卫战重点区域环保压力大

The commercial vehicle field is a key management target for air pollution prevention and control. Heavy industry provinces and cities, and key areas of the blue sky defense battle are under great environmental protection pressure.



经济 Economic development

“双碳”目标背景下存在挑战与机遇，形成“带动经济发展--支持产业发展”良性循环

Challenges and opportunities exist in the context of the "dual carbon" target, forming a virtuous circle of "driving economic development-supporting industrial development".



城市发展 City development

优化交通结构、建设智慧交通

Optimize transportation structure and build smart transportation.

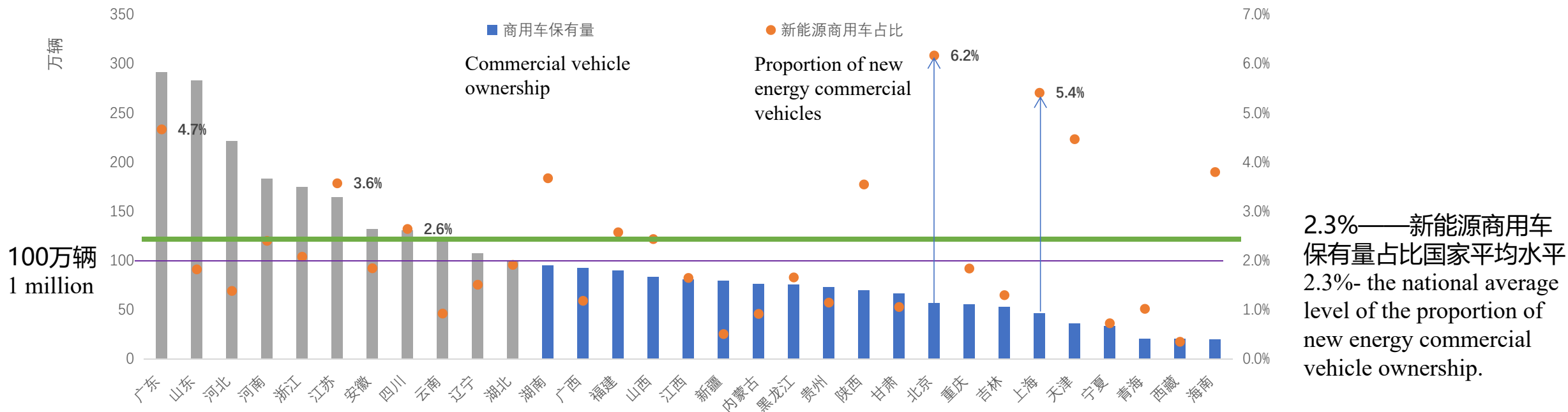
行动 举措 Actions

- 加大力度支持企业研发、生产，充分发挥商用车生产企业属地优势
- Increase efforts to support enterprise R&D and production, and give full play to the local advantages of commercial vehicle manufacturers
- 路权差异化管理，城市货运需求不断加大背景下促进新能源产品推广应用
- Differentiated management of right of way, promoting the promotion and application of new energy products in the context of increasing urban freight demand

3.3 市场容量：新能源商用车保有量占比依然较低，存在需求空间

Market capacity: The proportion of new energy commercial vehicles is still low, and there is room for demand

- 截至2020年各省份保有量统计显示，新能源商用车保有量占比依然较低，未来新增及替换发展存在一定市场空间。
- As of 2020, provincial statistics show that the proportion of new energy commercial vehicles is still low, and there is a certain market space for new and replacement development in the future.



2.3%——新能源商用车保有量占比国家平均水平
2.3%- the national average level of the proportion of new energy commercial vehicle ownership.

11个省份商用车保有量超过100万辆，新能源商用车保有量占比达到国家平均水平仅广东、江苏和四川三个省份。
Eleven provinces have more than 1 million commercial vehicles, and only three provinces-Guangdong, Jiangsu and Sichuan- have achieved the national average in the proportion of new-energy commercial vehicle ownership



中 汽 数 据 有 限 公 司