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中国商用车低碳发展管理政策趋势研究

Research on Management Policy Trends of Low-Carbon
Development of Commercial Vehicles in China

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China's commercial vehicle electrification policy measures and development characteristics

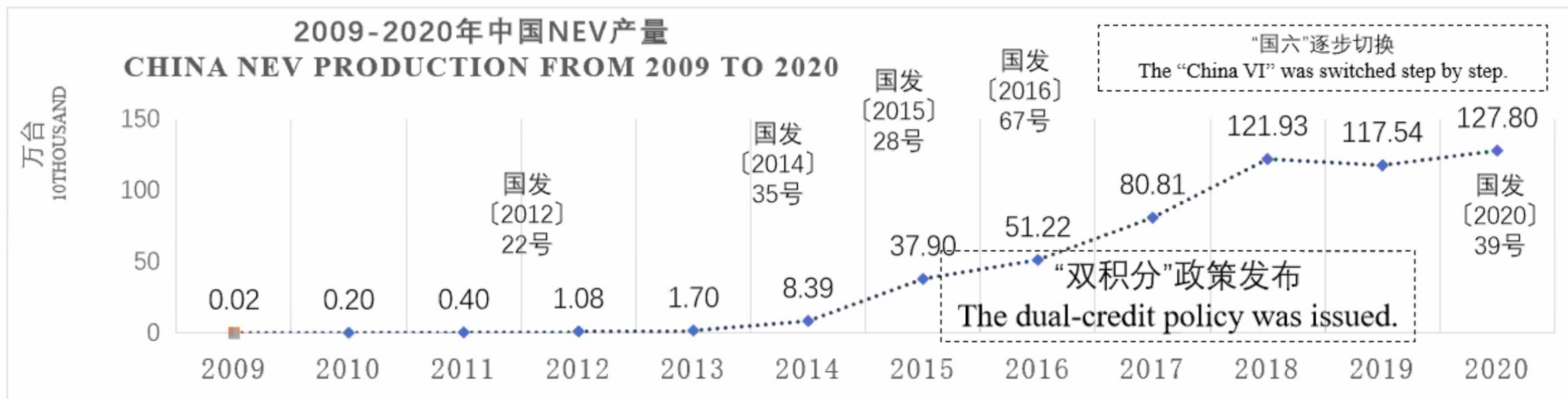
02 低碳发展管理政策趋势

Low-carbon development management policy trends

概述：政策体系健全完善推动中国新能源汽车快速发展

Overview: The sound and perfect policy system has promoted the rapid development of China's new energy vehicles.

- 国家从宏观规划、准入、财税鼓励、基础设施建设到法规、标准等多维度发布政策，扶持产业发展。
- The state has issued policies from macro planning, market access, fiscal and tax incentives, infrastructure construction, to regulations and standards, in order to support industrial development.



财税政策

Fiscal and tax incentives

产业规划

Industry planning

准入/投资

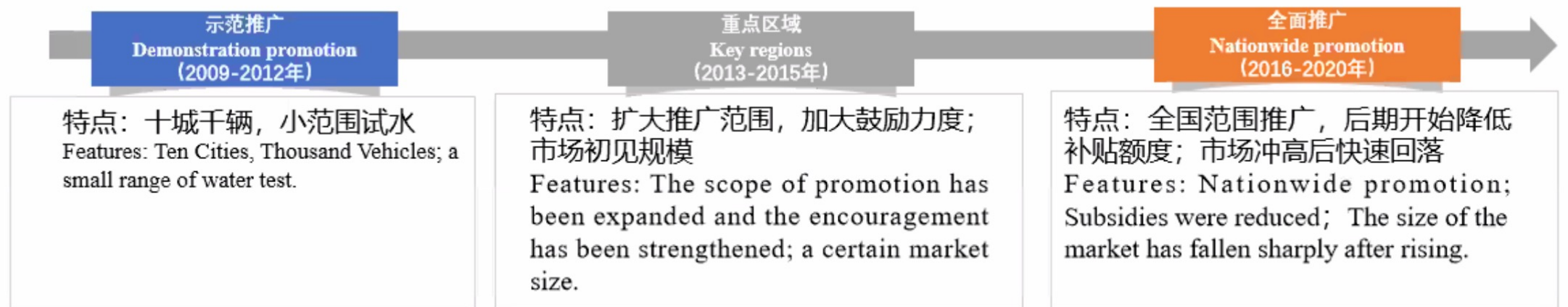
access/investment



特点一：财税政策是电动化发展重要引擎，退坡后市场下滑严重

The 1st feature: Fiscal and tax policies are an important driving force for the development of electrification, and the market declines seriously after the policy retreat.

- 新能源汽车财税补贴政策经历了示范运营、重点区域推广和全国范围推广三个阶段；随着政策阶段性调整，新能源商用车市场起伏变化与力度调整趋势保持一致。
- The fiscal and tax subsidy policies for NEVs have experienced three stages: demonstration promotion, promotion in key regions and nationwide promotion. With phased policy adjustment, new energy commercial vehicle market changes are consistent with the trend of policy adjustment.



特点二：公共领域等特定场景是商用车电动化的主战场

The 2nd feature: Public domain and other specific scenarios are the main application scenarios of commercial vehicle electrification.

- 在公共领域特定场景作为商用车电动化突破口，尤其是城市公交、厢式物流车以及环卫类作业车；
- 财税+地方引导+规划等多种政策措施组合发力。
- The specific scene in the public domain is the breakthrough of commercial vehicle electrification, especially the city bus, van logistics vehicle and sanitation operation vehicle;
- A combination of fiscal and tax policies, local government guidance, and planning has been adopted.

公共领域重点推广三大主力车型

The public sector focuses on promoting the three main models

城市公交 City bus



电动化渗透率97.0%
The electric penetration rate is 97.1% in 2019.

环卫作业 Sanitation operation vehicle



2019年：电动化渗透率2.4%
The electric penetration rate is 2.3% in 2019.

2019年：电动化渗透率8.1%
The electric penetration rate is 0.9% in 2019.



多种政策工具组合，地方积极贯彻配合

Multiple policy tools are combined and local governments actively implement and coordinate them



特点三：地方侧重举措下，差异化发展

The 3rd feature: Local governments' focus on different initiatives has led to differentiated development of electric vehicles.

- 2019-2020年前十城市累计推广新能源货车占比达到64.12%;
- 商用车电动化水平受地方经济水平、政策影响较大。
- From 2019 to 2020, 64.12% of new energy trucks were promoted in the first 10 cities.
- The level of commercial vehicle electrification is greatly affected by local economic level and policies.

使用城市 city	2019-2020年累计销量/万台 Accumulated sales volume in 2019-2020 (10000 units)	市场占比 Market share
深圳市 (shenzhen)	2.95	23.76%
成都市 (chengdu)	1.15	9.23%
广州市 (guangzhou)	0.63	5.10%
北京市 (beijing)	0.63	5.04%
南京市	0.59	4.73%
郑州市	0.56	4.53%
西安市	0.45	3.61%
长沙市	0.39	3.12%
芜湖市	0.36	2.87%
苏州市	0.27	2.13%
累计	7.97	64.12%

✓ **经济基础：GDP排名均较靠前**

✓ Economic basis: They all rank high in GDP.

✓ **多种政策工具举例** Examples of various policy instruments

城市 City	主要政策工具			
	资金鼓励 Financial support	路权开放 Road access liberalizat ion	国六实施 Implemen tation of "China VI"	蓝天保卫 战 Blue sky war
深圳 shenzhen	✓	✓	✓	✓
北京 beijing		✓	✓	✓
成都 chengdu		✓	✓	✓

特点四：油耗、排放逐渐加严，传统燃油车合规成本大幅增加

The 4th feature: Fuel consumption and emission standards are gradually stricter, and the compliance cost of traditional fuel vehicles increases significantly.

- 油耗和排放标准逐步加严，传统燃油车要实现合规需面临更多的成本投入。
- As fuel consumption and emission standards are gradually tightened, traditional fuel vehicles have to face more costs to achieve compliance.

油耗标准不断加严

Fuel consumption standards are gradually tightened

	第一阶段 Stage I	第二阶段 Stage II	第三阶段 Stage III
轻商 Light commercial vehicle	GB 20997-2007	GB 20997-2007; 较第一阶段加严 5%~10% 5%~10% more severe than stage I	GB 20997-2015; 较第二阶段加严 18%~27% 18%~27% more severe than stage II
重商 Heavy commercial vehicle	QC/T 924-2011	GB 30510-2014; 较一阶段加严 10.5%-14% 10.5%-14% more severe than stage I	GB 30510-2018; 较二阶段加严 12.5%-16% 12.5%-16% more severe than the first stage

排放标准日益严苛

Emissions standards are getting tougher



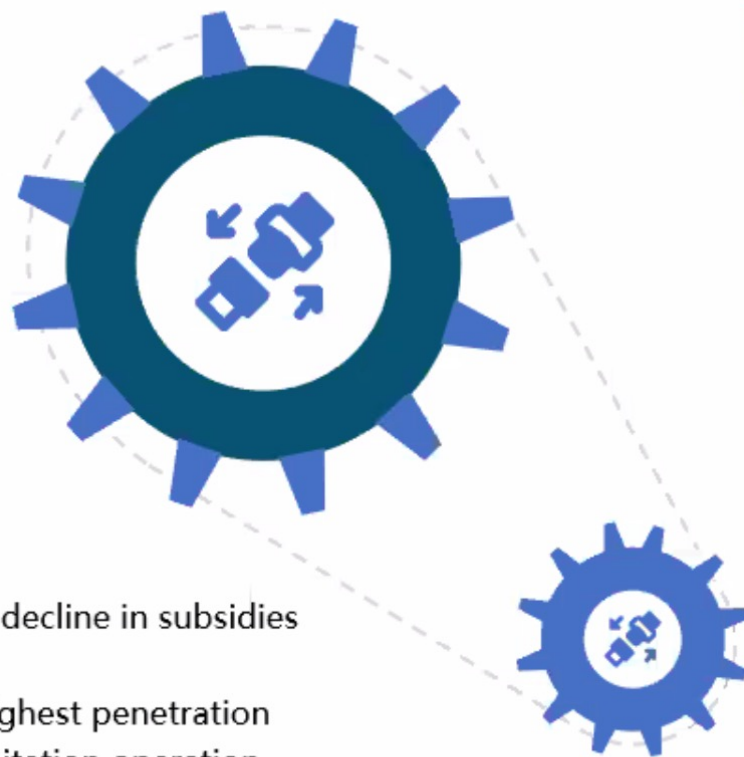
轻商升级成本测算 Light commercial vehicle upgrade cost:

项目 Item	单车平均成本 (元) Average cost per vehicle (yuan)
汽油机颗粒捕捉器GPF Gasoline Particulate Filter	600
车载加油油气回收系统ORVR Onboard Refueling Vapor Recovery System	100
三元催化器TWC Three way catalyst	600
其他 (发动机校准、热管理优化等) Others (Engine calibration, optimization of thermal management, etc.)	200
合计 Total	1500

小结&问题 summary & Problems

小结 summary

- 财税政策依赖性极强，补贴退坡导致市场大幅下滑；
- 公共领域是重点推广市场，公交客车渗透率最高，城市物流和环卫车市场空间仍较大；
- 经济发展水平和地方政策对商用车电动化影响巨大，各地发展极不均衡；
- 油耗、排放法规逐渐加严，倒逼企业节能减排。
- Fiscal and taxation policies are strongly relied on, and the decline in subsidies has led to a sharp decline in the market;
- The public sector is the key promotion market, with the highest penetration rate of city buses, and the market for van logistics and sanitation operation vehicles is still relatively large;
- The level of economic development and local policies have a huge impact on the electrification of commercial vehicles, and the degree of electrification in various regions is extremely uneven;
- Fuel consumption and emission regulations are gradually tightened, forcing companies to save energy and reduce emissions.



存在问题 Existing problems

- 直接性财税补贴政策依赖性较大；
- 电动化发展动力不足，引导性政策作用效果不明显；
- 地方主动性意识较差，区域发展不平衡。
- 现阶段单车限值制度对鼓励先进技术应用、提高节油水平作用有限。
- Direct fiscal and tax subsidy policies are highly dependent;
- The power of electrification development is insufficient, and the effects of guiding policies are not satisfactory;
- The initiative of the local governments is weak, and the regional development is uneven.

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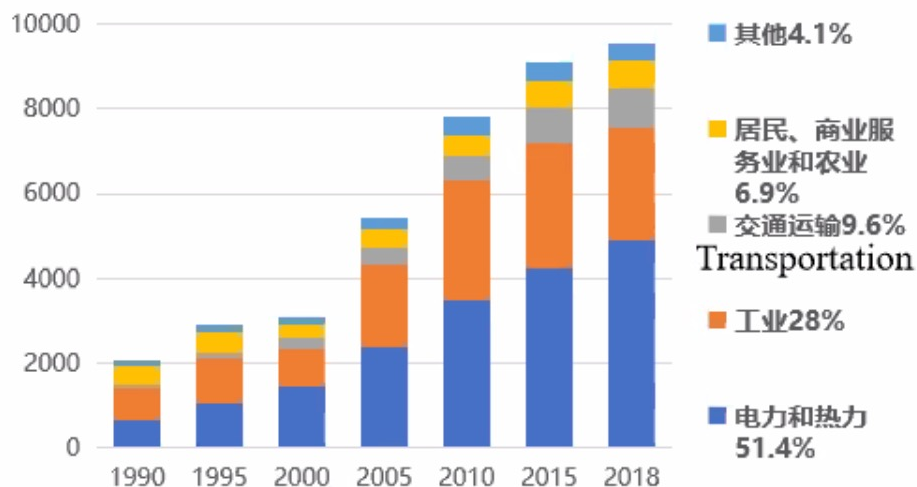
目标形势1: 2030年碳达峰, 2060年碳中和

The 1st target: Carbon peak by 2030, carbon neutral by 2060.

- 2020年9月22日, 习近平在第七十五届联合国大会一般性辩论上郑重宣布, 力争于2030年前碳达峰, 争取在2060年前实现碳中和。
- 从能源类碳排放行业构成来看交通运输占有一定比例, 而商用车作为耗能大户节能减排责任重大。
- On 22 September 2020, President Xi Jinping announced at the general debate of the 75th session of the United Nations General Assembly that China will strive to achieve carbon peak by 2030, and carbon neutral by 2060.
- From the perspective of the industry's carbon emissions composition, transportation occupies a certain proportion, and commercial vehicles, as a large energy consumer, are responsible for energy conservation and emission reduction.

中国能源类碳排放行业构成 (MtCO₂/年)

The composition of China's energy carbon emission industry (MtCO₂/Year)

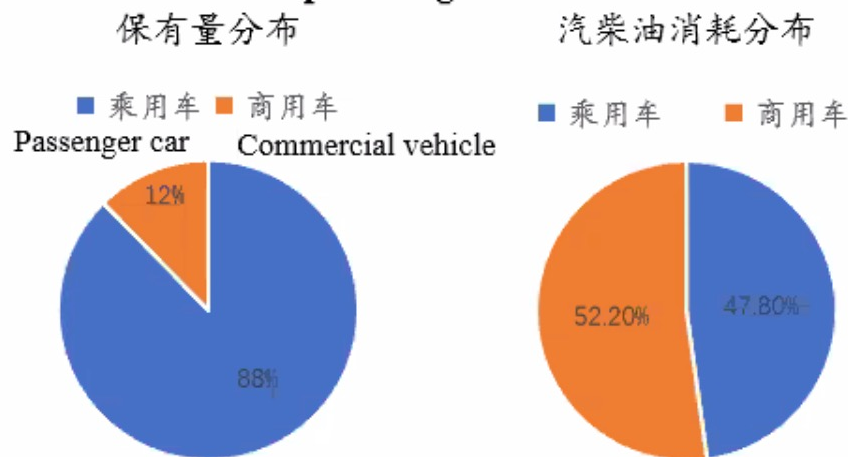


能源类排放重点行业是电力部门全国碳排放占比51.4%

The key energy emission industry is the power sector, which accounts for 51.4% of the country's carbon emissions.

乘商用车保有量分布&汽柴油消耗分布

Distribution of commercial vehicle ownership & energy consumption of gasoline and diesel vehicles



商用车保有量占比12%, 燃油消耗量占比一半以上

Commercial vehicle ownership accounted for 12%, and its fuel consumption accounted for more than half.

目标形势2：2025年新能源汽车新车占比汽车总量20%左右

The 2nd target: New energy vehicles will account for about 20% of total vehicles in 2025.

- 近几年新能源汽车发展进展来看，乘用车领域市场化进程明显快于商用车，但与2025年总体目标仍然存在很大差距。
- In recent years, from the perspective of the development of NEVs, the marketization process of passenger vehicles is obviously faster than that of commercial vehicles, but there is still a big gap with the overall goal of 2025.

国务院办公厅印发
《新能源汽车产业发展规划（2021—2035年）》

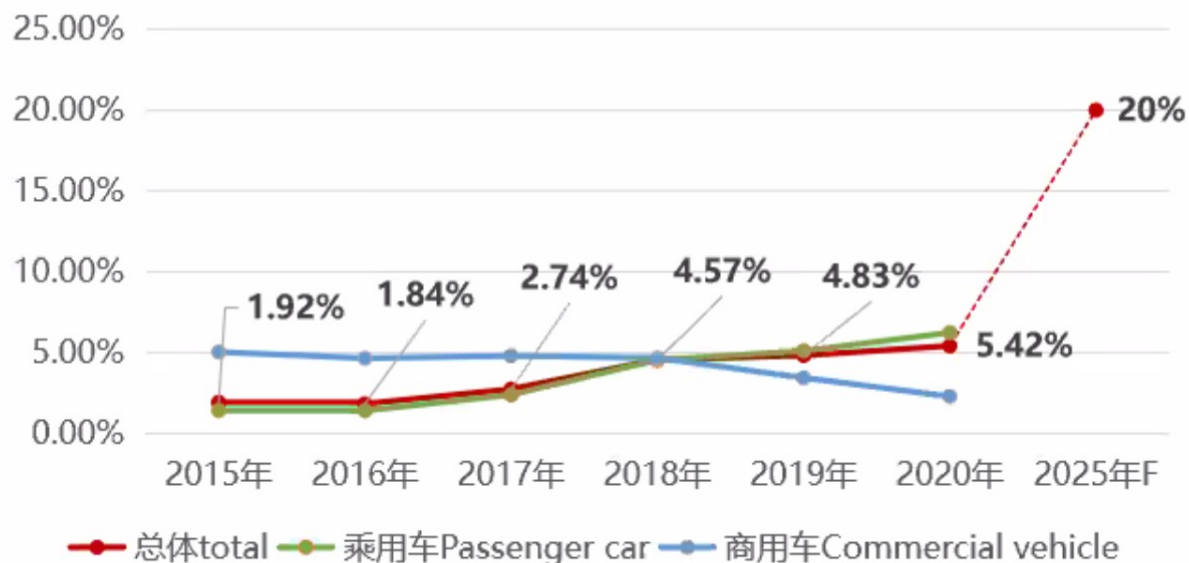
到**2025年**



新能源汽车新车销售量

达到汽车新车销售总量的 **20%**左右

新能源汽车渗透率年度走势
Annual trend of NEV penetration rate



目标形势3: 商用车油耗水平达到国际领先水平

The 3rd target: Commercial vehicle fuel consumption reaches the international leading level.

- 与欧美日等发达国家进行比较, 现阶段油耗限值存在一定差距, 若达到2025年国际领先, 下一阶段标准加严幅度需20%以上。
- Compared with developed countries such as Europe, the United States and Japan, there is a certain gap in fuel consumption limits at this stage. If China wants to reach the international lead in 2025, the next stage of standard must be tightened more than 20%.

政策文件



节能与新能源汽车产业发展规划 (2012-2020年)

汽车产业中长期发展规划

2020

2025



乘用车新车平均燃料消耗量降到5L/100km 乘用车新车平均燃料消耗量降到4L/100km

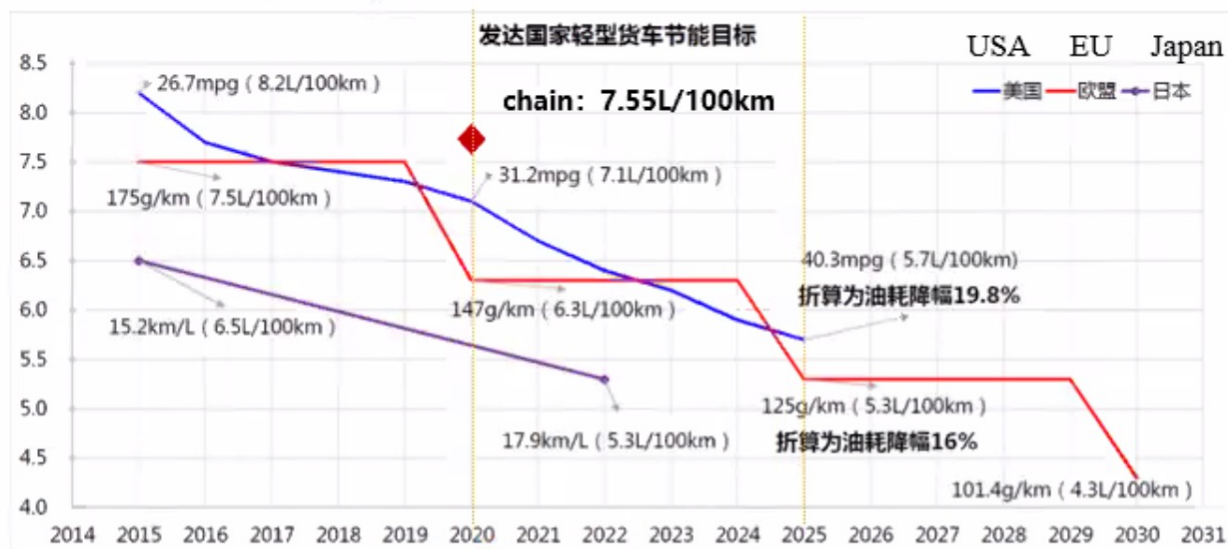
商用车接近国际先进水平

商用车达到国际领先水平

新能源汽车能耗处于国际先进水平

新能源汽车能耗处于国际领先水平

Energy-saving targets for light trucks in developed countries



政策措施机制分析：引入积分管理制度从供给侧促进商用车低碳发展

Mechanism analysis of policy measures: Introducing credit management system to promote the low-carbon development of commercial vehicles from the supply side.

- 参考国际经验，借鉴乘用车双积分运行模式，分析以下三种管理形式机制和表现特点。
- By referring to the international experience and the dual-credit policy of passenger vehicles, the mechanism and features of the following three management modes are obtained.



燃料消耗量积分管理 (CAFC)

Corporate average fuel
consumption credit management
(CAFC credit)

机制：燃料消耗量企业平均核算
特点：整体目标设定管控，可通过结构调整等灵活方式达到目标；避免一刀切，鼓励先进技术。

Mechanism: average accounting of corporate fuel consumption.

Features: Overall targets are set and controlled, while allowing flexible means such as structural adjustment to achieve them; Avoid one-size-fits-all and encourage advanced technology.



新能源汽车积分管理 (NEV积分)

New energy vehicle credit management
(NEV credit)

机制：对生产企业提出新车中新能源汽车占比目标要求
特点：强制要求新能源汽车研发生产，鼓励新能源汽车推广使用；企业主体考核，技术路线、产品种类的选择给予更多灵活性。

Mechanism: Targets for the proportion of NEVs in new cars are set for production enterprises.

Features: Encourage the promotion and application of NEVs by compulsory development and production of NEVs; Take the enterprise as the main body to assess, and give more flexibility to the choice of technical route and product type.



CAFC&NEV积分

机制：燃料消耗量企业平均核算；对生产企业提出新车中新能源汽车占比目标要求；两种积分单向关联抵偿
特点：燃料消耗量与新能源汽车发展关联管理

Mechanism: average accounting of corporate fuel consumption; Targets for the proportion of NEVs in new cars are set for production enterprises; two kinds of credits are unidirectional correlation and compensation.

Features: Fuel consumption is managed together with the development of new energy vehicles.

商用车适用措施评估 Evaluation of applicable measures for commercial vehicles

- 商用车特点与适用条件对应评估，企业平均制度与新能源积分需细分管理对象、分步骤探索实施。
- The characteristics and applicable conditions of commercial vehicles should be evaluated accordingly. The enterprise average system and new energy credits should be subdivided into management objects and explored and implemented step by step.



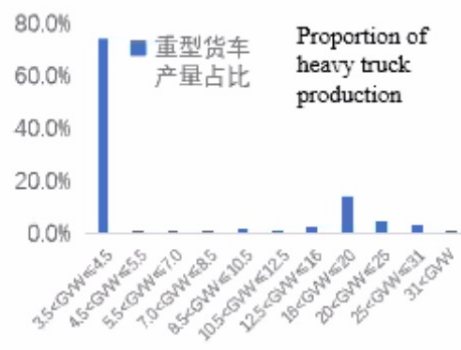
燃料消耗量积分管理 (CAFC)

适用于产品市场多样化需求，同类产品技术水平差异较大。

It is suitable for the situation where the product market is diversified and the technology level of similar products is different.

商用车产品结构分布差异较大，生产资料特性决定产品成本敏感度较高。

The product structure distribution of commercial vehicles is single and concentrated, and the production characteristics determine the product cost sensitivity is high.



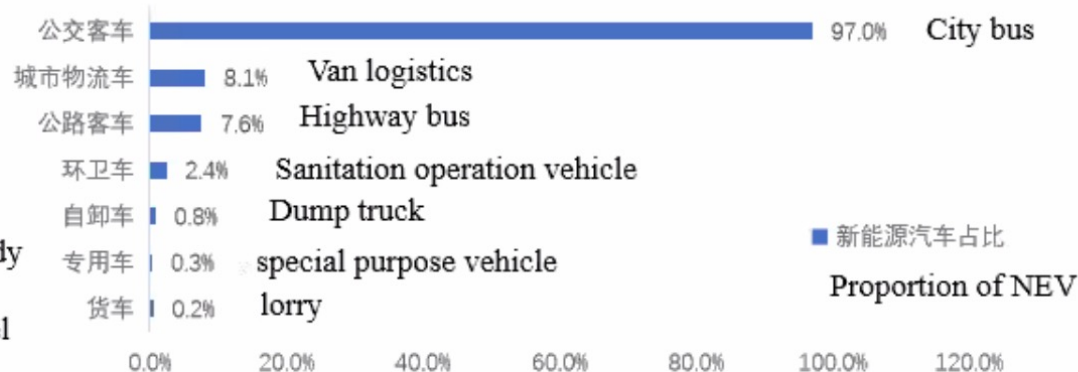
新能源汽车积分管理 (NEV积分)

适用于新能源技术已有积累，产业化初期。

It is applicable to the initial stage of industrialization in which new energy technology has been accumulated.

新能源商用车已具备产业化推广条件，现阶段与燃油车经济性对比优势不明显，处于推广初期。

New energy commercial vehicles have already met the conditions for industrialization promotion. At this stage, compared with fuel vehicles, the comparative advantage in economy is not obvious, and it is in the early stage of promotion.



加快开展新能源商用车积分管理方案研究

Research on new energy commercial vehicle credit management scheme will be accelerated.

- 2018年受委托开展节能与新能源商用车积分管理制度研究。
- In 2018, the research on energy-saving and new energy commercial vehicle credit management system was commissioned to carry out.



2018年 召开节能与新能源商用车 积分管理制度研讨会

In 2018,
Energy saving and new energy
commercial vehicle credit
management system seminar
was held.

研究讨论节能与新能源商用车积分管理制度的研究思路、管理模式、研究内容等

The research ideas, management mode and research contents of energy-saving and new energy commercial vehicle credit management system were studied and discussed.

委托研究

Commissioned
research

中华人民共和国工业和信息化部

工信部(2018)239号

关于下达新能源商用车积分管理办法制定
任务的函

中国汽车技术研究中心有限公司：
为贯彻落实节能减碳工作，科学合理规划商用车
积分办法，现委托你单位开展新能源商用车积分管理办
法制定工作。具体内容如下：
一、主要工作任务
研究编制新能源商用车积分管理办法内容（包括政策目
标、政策体系、市场发展趋势、技术发展趋势、积分管理办
法等），编制相应的研究报告。
对管理内容涉及法规标准管理、相关数据及研究内
容及时反馈并向我单位提供成果。

新能源商用车积分 管理办法

- 政策目标
- 政策体系
- 市场发展趋势
- 技术发展趋势
- 积分管理办法

New energy commercial
vehicle credit
management measures

- Policy objectives
- Policy system
- Market development trends
- Technology development trends
- Credit management measures

分阶段推进，促进新能源商用车稳步发展

The policy will be phased in to promote the steady development of new energy commercial vehicles.

- 经前期研究讨论，在适用范围、积分核算、考核要求、积分管理、处罚措施五个主要方面基本形成共识，初步形成新能源商用车积分管理研究方案。
- After the preliminary research and discussion, a consensus has been basically formed in the application scope, integral accounting, assessment requirements, integral management and punishment measures, and a research plan for the integral management of new energy commercial vehicles has been initially formed.

整体方案研究 Overall plan

1	<p>适用范围：从应用场景、技术经济性等维度出发评估管理对象重点关注轻型车，部分场景重型车引导鼓励。</p> <p>Application scope: Evaluate management objects from application scenarios, technical economy and other dimensions, focusing on light vehicles, guiding and encouraging heavy vehicles in some scenarios.</p>
2	<p>积分核算：以企业为核算主体，不同技术类型、车型种类、技术水平产生积分实际值，并且给予传统节能车鼓励设置。</p> <p>Credit accounting: With enterprises as the main body of accounting, actual credit values are generated for different technology types, vehicle types and technical levels, incentives for traditional energy-saving vehicles are set.</p>
3	<p>考核要求：不同车型分设积分比例要求。考虑企业商用车产品多样化，考核企业为主体，整体满足积分要求即可。</p> <p>Assessment requirements: set percentage requirements for different models. Considering the diversification of commercial vehicle products of enterprises, the assessment of enterprises as the main body can meet the requirements.</p>
4	<p>积分管理：设置灵活性，积分可结转、交易。</p> <p>Credit management: flexibility is set up, and credit can be carried forward and trading.</p>
5	<p>处罚措施：借鉴乘用车积分管理办法，提出信息不符、负积分未归零等不合规问题的处罚措施。</p> <p>Punishment measures: By referring to the credit management methods of passenger vehicles, the punishment measures for non-compliance issues such as information inconformity are put forward.</p>

同步开展商用车积分管理中长期制度体系研究

Synchronously carry out research on medium - and long-term system of commercial vehicle credit management.

- 重点评估商用车燃料消耗量企业平均制度、单积分独立运行、双积分挂钩模式、乘商领域积分互通等具体措施及组合效应，研究设计商用车领域积分管理制度框架。
- Specific measures and combined effects, such as commercial vehicle fuel consumption enterprise average system, independent operation of single credit, dual credit linkage mode, and interchange of credit in the field of passenger and commercial vehicles, should be evaluated in order to study and design the management framework of commercial vehicle credit system.

未来：商用车领域积分管理制度框架研究

Future: Research on the framework of commercial vehicle credit management system

协同考虑燃料消耗量管理标准，借鉴乘用车双积分管理机制，设计商用车领域积分管理制度框架

The framework of credit system in the field of commercial vehicles is designed by coordinating consideration of fuel consumption management standards, and drawing on the dual-credit management mechanism.



 中汽中心 | 数据

中 汽 数 据 有 限 公 司