

Comparative Analysis on the Marketing Strategy of New Energy Vehicles in China: Taking Tesla and NIO as an Example

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Abstract. This paper evaluates and compares Tesla and NIO's marketing strategies in China to conclude why NEVs are commonly used in public transportation but not popularized in private transportation. The analysis is based on the 4Ps and SWOT methodology that includes the evaluation of product strategy, pricing strategy, place strategy, promotion strategy, strengths, weakness, opportunities, and threats of Tesla and NIO. This paper concludes that Tesla and NIO successfully captured the NEV market by utilizing various marketing strategies; whereas NEV complements, such as charging stations, are in short supply which restricts NEV companies from expanding market share in the automobile industry. Further suggestions on research directions and government activities support the realization of the net zero carbon emission objective in the global context of environmental emergencies.

Keywords: New energy vehicle; Tesla; NIO; Marketing strategy; SWOT analysis.

1. Introduction

In response to the urgent ecological environment preservation appeal and the gradual fossil energy depletion, the worldwide mainstream consciousness has been raising the awareness of exploring new energy and approaching sustainable development. In allusion to the Chinese automotive industry, replacing conventional gas-guzzling cars with new energy vehicles (NEV) is indispensable to mitigate human dependence on non-renewable energy, alleviate urban carbon dioxide pollution, and support national energy structure optimization. The term "NEV" refers to the four-wheeled vehicle that utilizes an untraditional vehicle fuel as its propulsion source, including fuel cell electric vehicle (FCEV), battery electric vehicle (BEV), dimethyl ether vehicle (DEV), hydrogen engine vehicle (HEV), hybrid vehicle (HV), and other new energy (e.g., highly efficient energy storage devices) vehicles [1]. Since new marketing ideas keep surfacing in agreement with the marketplace's contextual discontinuities, this paper critically assesses and compares sustainable marketing strategy between Tesla and NIO by taking account of major stakeholders' value exchange to strive for higher NEV sales volume in private transportation [2, 3]. Sustainable marketing strategy is the value generation process involving strategic creation, communication, delivery, and exchange of offerings through business practices, consumption behaviors, and the marketplace while reducing environmental damage to improve global stakeholder's well-being and living standards equitably and ethically for the present and future generations [4]. This paper provides future operational and marketing thoughts for NEV companies via analyzing 4Ps and SWOT to achieve the global sustainable development objective and open the private transportation market.

2. Methodology

This paper comparatively analyzes Tesla and NIO's marketing strategy in China via the 4Ps and SWOT to refine their marketing campaign towards private transportation consumers by motivating objective adjustment and research and development.

2.1 The 4Ps Theory

Respectively, the 4Ps theory refers to product, price, place and promotion strategy which supports marketing analysis [5].

2.1.1 Product Strategy

Tesla produces a wider range of NEV than NIO. Tesla designed Model S, Model X, Model Y, Model 3 as SUV and sedan, Cybertruck as the only MPV, and a newly developed Roadster in advance sale. NIO primarily produces SUVs, such as ES6, EC6, and EC8, with the only sedan - ET7.



Figure. 1 SUV for Tesla



Figure. 2 SUV for NIO

Figure 3 illustrates the change in Sedan, SUV, and MPV's market share in China from 2015-2019, which are the main products of Tesla and NIO. SUV's market share is inclined to emulate that of Sedan, but together they almost dominate the entire market. Dale pointed out the significant factors that increased SUV popularity: safety, seating capacity, off-road capability, and cargo capacity. Although MPV makes up only a small proportion, it still holds a steady demand in the market. Thereas, Tesla is producing a more reasonable proportion of product types than NIO, justifying previous suggestion that NIO could consider further devoting into product type enrichment.

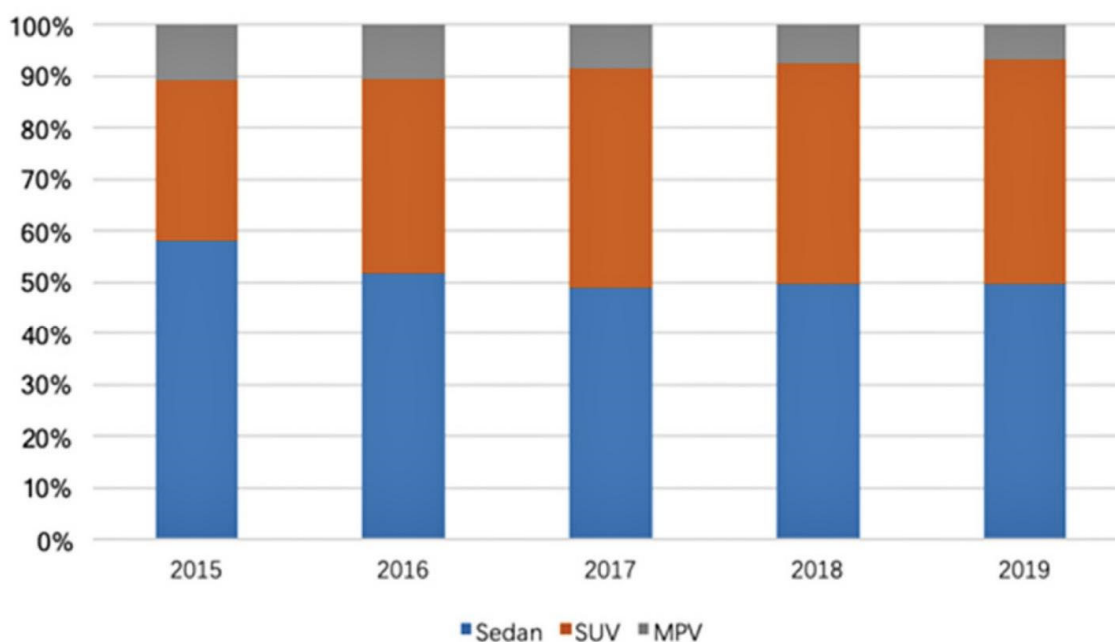


Figure. 3 2015 - 2019 Changes in Market Share of **Sedan**, **SUV**, and **MPV**
(Source: China Automobile Dealers Association Market Research Branch)

Regarding the 2019 predominant considerations of NEV consumers before making purchases, mileage and battery are the most frequently concerned factors. On the premise that prices of Model 3 and ES6 are similar, NIO's mileage is shorter than that of Tesla [5]. Similarly, Tesla Model Y is less expensive than NIO ES8, but the range of NIO is shorter than that of Tesla, meaning that Tesla is offering a more favorable product pool than NIO at the same or even a lower price level.

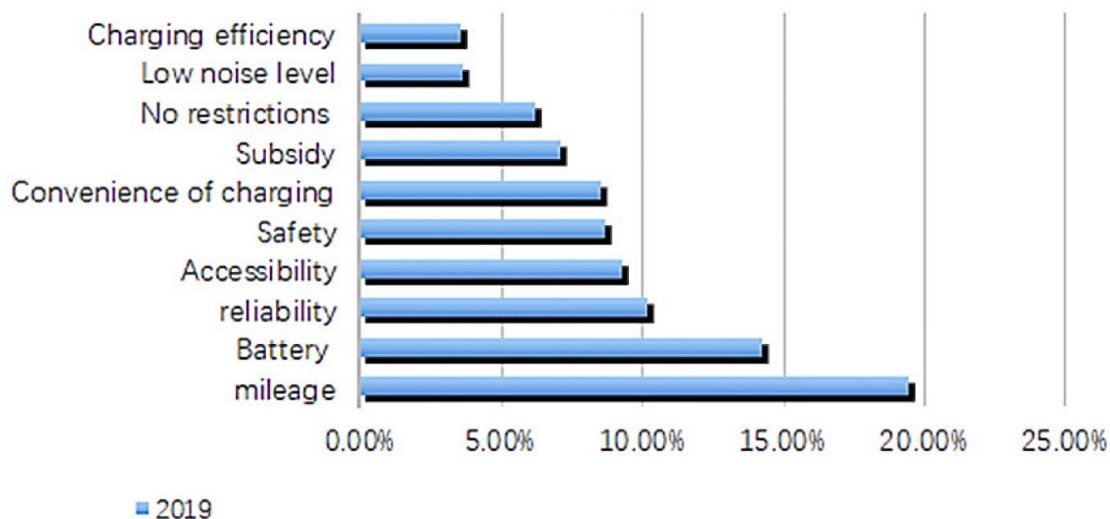


Figure. 4 2019 NEV consumer's primary considerations when making purchases
(Source:<https://index.toutiao.com>)

2.1.2 Pricing Strategy

Tesla divided its pricing strategy into two stages so that it may gradually enter the Chinese mass market and enable more people to acquire electric automobiles. The first stage assisted Tesla's entrance to the Chinese market with high pricing that left the first impression on the public as a high-end brand. As the pioneer international technological NEV production company in China, Tesla ensures that its production technology and product performance are at least on par with conventional gasoline cars with similar price levels in all realms. Moreover, Sonali indicated that Tesla involves skim pricing to sell low-volume NEV to affluent consumer groups at a high price. Considering all factors, Tesla initially priced its products expensively, attributed to its high transportation and research and development cost and the premium brand symbol to maintain when entering a new market with purchasing-culture differences. However, if the existing pricing strategy is indifferent to the original one, it is doubtful that Tesla could capture the market so rapidly; inversely, it tends to be unable to attract consumers and obtain positive returns, finally losing market competitiveness [5].

To prevent such failure, Tesla slowly infiltrates the Chinese mass market by transitioning into the second penetration pricing stage to expand the client base, swiftly seize the market, and deter potential competitors. Huang's research on Tesla Motor's Chinese localized pricing strategy proposed that Tesla is currently applying a flexible pricing approach to promote product accessibility [6]. Rather than merely targeting upper-income groups, Tesla takes advantage of government subsidies for the NEV industry and continuously launches new low-priced, price-effective, and high-volume domestic NEVs to the general public to increase sales volume [5]. Under the implementation of two successive pricing strategies, Tesla's small profits and quick returns strategy not only obtained a firm foothold in China's NEV market and discouraged China's domestic NEV production companies from market entering but also established a solid, cost-effective brand image in Chinese NEV consumers' minds.

Unlike Tesla, NIO has always followed a relatively simple pricing structure and strategy. Despite strong competitors, NIO has always maintained its market price unchanged, and none of its product series' prices has been lower than 320,000 RMB. This pricing strategy could be a token of consumer status but also creates enormous restrictions for market occupation since it limits middle to lower-income groups' accessibility. Therefore, Tesla's case enlightens NIO through flexible pricing, correctly altering pricing tactics and setting by referring to various market situations and the average consumer earnings to expand market share.

2.1.3 Place Strategy

Innovatively, Tesla constructed, operated, and managed experience shops directly instead of adopting traditional 4S shops and was the first to shift car consumption into an online, convenient

mode in the Chinese automobile industry. A hundred and two physical shops spreading across Chinese commercial metropolis allow comprehensive product visualization and payment time flexibility which merely requires online payment for satisfying products at any time. Once paid, Tesla provides door-to-door delivery, eliminating consumers' time and energy wasted on collecting products and removing Tesla's costs to dealerships. Followed by Tesla, NIO introduced online payment, and its physical shops are also not conventional 4S store that ordinarily exhibits and stores products. Instead, NIO House is equipped with lounges, reading rooms, and living areas to make consumers feel the delicacy of life. China Securities Network identified that the nationwide eighty-three NIO Houses are more concentrated in commercial centers, including Shanghai Lujiazui and Beijing Wangfujing, and at the same time placed close to high-end brands such as Mercedes-Benz and Audi to reinforce brand positioning and image in the general public's minds [6,7]. As a result, though the number of NIO Houses is less than that of Tesla's experience shops, their place strategies are relatively similar, but NIO has a more precise objective to polish the brand image as luxurious.

2.1.4 Promotion Strategy

In terms of promotions, Tesla mainly applies price cuts. For example, the high-performance model version's price was decreased by 165,100 RMB to 369,900 RMB, while the long-range model version's starting price was decreased in February 2021 from 148,100 RMB to 339,900 RMB. In addition, according to the database on the Sohu website, Tesla offers free systematic upgrades to those regular customers who did not benefit from the preferential pricing policy to lift their purchasing experience [8]. In contrast, Net Ease News reports that Bin Li, the funder of NIO, refutes making price reductions no matter how its strong competitors act since the products are valued by money, and the action is unfair to regular consumers [5]. Therefore, it appears that Tesla successfully increased the market share primarily by using the promotion strategy of price cuts and after-sales compensation, whereas NIO's funder has a different pricing philosophy and hence would not decrease price levels as promotions.

2.2 SWOT Analysis

In the circumstance of the Chinese government vigorously promoting the NEV industry, SWOT analysis evaluates Tesla and NIO's strategic marketing behaviors from four aspects: strengths, weaknesses, opportunities, and threats.

2.2.1 Strength

Tesla's marketing strategy outperforms that of its peer competitors from two major aspects: branding and willingness to invest in research and development. On the one hand, Tesla's official webpage illustrates clear product image of green and environmentally friendly by actively responding to the global net zero carbon emission target. The company not only offers NEV but also household energy storing Powerwall, energy converting Solar roof and large-scale energy storage, such as Megapack and Powerpack, to gain competitive advantage from peer companies. This branding method persuades consumers who cares about the worsening global warming situation to purchase Tesla's NEV among cars of similar prices - as mentioned before, Tesla's main competitors in terms of specific product are those labeled similar prices to Tesla's product. On the other hand, as shown in figure 5, from 2013 to 2019, Dong presented that Tesla's expenditures for research and development remains at a high level especially after the launch of Model 3 to found later technological improvements [9]. Furthermore, the autopilot hardware in Tesla is considerably more advanced than NIO's. Tesla reportedly has five surround vision cameras, compared to NIO's four, while one surround view camera would make a significant difference.

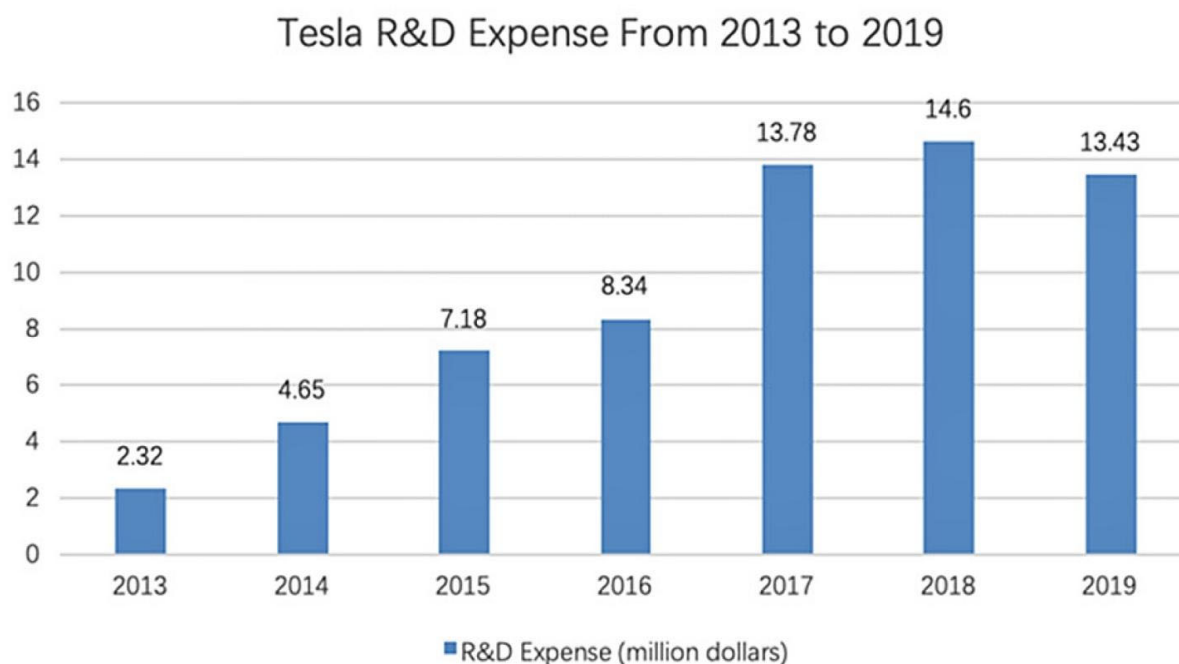


Figure. 5 Tesla's research and development expenditure from 2013 to 2019

The benefits of NIO's services are astounding. According to TechNode's article, NIO has a heightened environment awareness both before and after the sale, implementing the feeling of at home throughout its services. Moreover, future automobile owners could also enjoy using upscale services like free prices and free car washes. Pre- and post-sale services can assist businesses draw in more customers [10]. NIO gives more consideration to user experience than Tesla does that it achieves a transparent one-touch dial and assured service by connecting each service node to the user across the Internet. In addition, most automobile companies' auto component-making technology is controlled by suppliers, whereas NIO's induction motors, motor controllers, and permanent magnet synchronous motors are not only developed but also supplied by its subsidiary company XPT (Nanjing) E-Powertrain Technology Co., Ltd hence higher production autonomy.

2.2.2 Weakness

Although the NEV's sales volume has increased significantly in China since 2009, the majority of NEVs sold are for public transportations: privately or publicly provided services that are accessible to all individuals who purchase for the required fee, such as CAOCOA, DIDI, and urban buses [1, 11]. One reason could be that NEV's model selection could satisfy public transportation requirements but hardly meet the demand of private consumers. Chinese companies nowadays target to cater the governmental appeal of achieving a net zero carbon rate and building brand reputation hence purchase NEVs. Nevertheless, private consumers need to take deeper consideration when making choice, for instance, it is more time-saving to charge by electricity than by fuel since it takes more than an hour to recharge a new energy car but only about a minute to refuel a patrol car hence inconvenient for private consumers with intense transportation needs. Based on the 4P strategy analysis results, it can be inferred that the common shortage of Tesla and NIO is that they cover less variable model designs than what the general population needs. Especially for NIO, its models are, basically, SUVs which indicates that NIO consumers would not have as many opportunities to select than Tesla, BMW or Mercedes-Benz's consumers and, contributing to internal product competition rather than promoting overall competitiveness in the market. As an illustration, NIO's ES8 sales from November 2020 to September 2021 is not ideal: its average monthly sales volume is 1,600 which is thirty-four percent less than the 2,144 Tesla Model Y sales [12]. Another reason attributes to both the lack of NEV endurance and the seriously insufficient quantity of NEV charging stations in China. Summarized in

Table 1. Number of charging stations in thirty-four first-level administrative regions of China, not mentioning the imbalance between demand and supply in second and third-tier provinces, NEV charging stations are still in short supply in first-tier cities such as Shanghai and Beijing. In terms of charging pile qualities, Zheng contended that apart from that in the first-tier cities, charging piles do not show good charging ability. To minimize the influence of the shortage in both quantity and quality of charging station, Automotive Research Report shows each major area in China has a varied level of interest in electric vehicles, impacting hugely on local sales, hence Tesla and NIO could focus on product upgrade to enhance the endurance and increase mileage to enlarge their private markets.

Table 1. Number of charging stations in thirty-four first-level administrative regions of China

no. of charging stations ≥ 40	40 > no. of charging stations ≥ 10	10 > no. of charging stations ≥ 1	no. of charging stations =0
Zhejiang Province	Shanghai	Inner Mongolia Autonomous Region	Xinjiang Uygur Autonomous Region
Guangdong Province	Sichuan Province	Guangxi Zhuang Autonomous Region	Ningxia Hui Autonomous Region
Beijing	Hebei Province	Heilongjiang Province	Tibet
	Shandong Province	Jilin Province	Qinghai Province
	Jiangsu Province	Liaoning Province	Shanxi Province
	Fujian Province	Gansu Province	Taiwan Province
	Hainan Province	Shaanxi Province	
	Hunan Province	Henan Province	
		Anhui Province	
		Chongqing	
		Hubei Province	
		Jiangxi Province	
		Guizhou Province	
		Yunnan Province	
		Tianjin	
		Hongkong	
		Macao	

Furthermore, Tesla has experienced irreversible reputational damage due to its frequent brake failure incidents in recent years. Despite Tesla's declaration that the nontraditional kinetic energy recovery system's pedal design caused driver's operational errors, safeness is the premise for travel; hence controversies and doubts on product quality have not decreased [5]. Therefore, long-term research and development urgently need to promote Tesla's systematic practicality so that private customers can purchase without worrying about safety hazards. In addition, NIO has not established or plans to establish its own processing factory in recent years. Instead, NIO renewed its three-year contract with Chinese domestic production factory JAC Motors; while its industrial foundry quality is not eminent, product quality control is incredibly challenging and crucial for NIO to lift core competitiveness. Meanwhile, the Chinese government regulated that manufacturer's name must be attached near the brake light for China's domestically produced passenger automobiles [5]. Nonetheless, other joint venture automobiles frequently omit the tail label, for example, Beijing Benz. Similarly, the NIO tail label will be subtracted from JAC because NIO concentrates on high-end cars, whereas JAC emphasizes low-end models, and NIO's auto show displayed car did not contain the tail label; and the tail labels will not be printed until customer delivery. In this case, consumers could consider JAC lowering NIO's product value because the NIO's tail label will not be printed until it is delivered to the customer [13]. To conclude, NIO needs further research on whether the benefit of replacing JAC Motor with their own production factory could outweigh the costs.

2.2.3 Opportunities

Tesla's Gigafactory in Shanghai marks its achievement in product localization. Before the factory went into operation, Tesla's transporting expense was considerable, and because imported goods were subject to regulations and currency exchange rates, Tesla inflated product prices unfavorable to major customers. Shanghai Gigafactory enabled Tesla to double its monthly production in China after lockdown and implement its two-stage pricing strategy by stimulating production efficiency and saving costs on transportation and tariffs. In addition, the Chinese Governmental launched the fiscal policy of subsidizing both NEV producers and consumers to reduce carbon emissions and accomplish environmental protection aims. Regarding subsidies, Tesla offers a discount of 11,088 RMB for private consumers and 7,761 RMB for non-private consumers who equipped their cars with a price lower than 300,000 RMB, referring to government regulations. Although the subsidy was declined since 2020, the subsidy of 7,761 RMB to 11,088 RMB is still an appreciable discount compared to conventional fuel cars with similar price levels, attracting consumers.

Customers are more inclined to select electric cars of similar caliber due to the rising environmental protection awareness. Environmental pollution exacerbated by economic growth, for instance, haze, has become prevalent over the past few years, offering global citizens a chance to practice sobriety. Unlike conventional gasoline vehicles, NEV does not burn fuel which resolves the issue of air pollution and vehicle exhaust emissions in general. NEV's development complies with the global periodical sustainable development requirements and has a promising market future.

2.2.4 Threats

NEV's bright prospects in this era have provided Tesla and NIO with profit-making opportunities. Meanwhile, groups of competitors such as Li Auto and Xpeng capture the thriving and competitive market. Apart from the emerging companies, existing firms such as BYD have also possessed a comparably leading status in the NEV market by utilizing an accumulated customer base, threatening Tesla's market position these years. Tesla also faces supply chain issues due to its high dependence on vehicle parts produced by other businesses. For the three supply chain characteristics, the electric car dealer reports that Tesla will produce complex chassis, external trim, interior trim, etc., in addition to its own vital technologies, including lightweight vehicle integration and BMS control. Tesla outsourced a substantial amount of vehicle parts and procured sixteen big parts accounting for forty-seven percent of the overall BOM cost as system outsourcing. Tesla will be able to lower production costs and draw in more customers if it can solve the supply chain issue. One common threat for NEV companies is that governmental's subsidy act as a double-edged sword since the regulation system is not impeccable. For instance, NEV companies gained over one million RMB in 2018 by cheating the subsidy system [14]. Governments could review and modify policies related to the NEV subsidy system to ensure the effectiveness of money spent.

3. Conclusion

In conclusion, Tesla, as an international new energy automobile company, behaves better than NIO in general. Via the 4Ps and SWOT analysis, it is clear that Tesla strategically combines its pricing and placing strategy, which successfully opened the Chinese NEV market and built a brand image. Tesla also renovates traditional dealership purchasing to online purchase of cars and provides door-to-door delivery service, saving time and energy for transportation. Though lack of product variety is a shared problem for both companies, NIO's products are primarily SUVs hence could focus on considering whether or not to build NIO's own factories to promote freedom of production and product variety to match private customer preferences. The fineness of NIO's before and after-sales services is inherited in its high-end brand tenet, making consumers feel at home. Benefiting from the rising environmental protection awareness from consumers and Chinese national governmental subsidy to both NEV producers and consumers, Tesla and NIO have the opportunity to lower production, research, and development costs, pulling up the industrial development pace. However,

one problem necessary to solve if the NEV industry aims to expand its market share rapidly is to build more charging stations across the country since the charging inconvenience discourages a significant portion of private consumers from purchasing. Further research could focus on how local governments could best support the net zero target in the automobile industry and best monitor the subsidy system to maximize production efficiency.

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