

What Happened to China's New Energy Vehicles Brand Companies?

Xiaohui Zang^{1,2,a}, Raja Nazim Abdullah^{1,b*}, Lihua Liu^{3,4,c}, and Bei Li^{2,d}

^aE-mail:zxhconnie@qq.com, ^{b*}Corresponding author E-mail: rajanazim@fpe.upsi.edu.my,
^cE-mail: 78299606@qq.com, ^dE-mail: 413001997@qq.com

Universiti Pendidikan Sultan Idris, Tanjong Malim, Perak, Malaysia¹, Liuzhou Vocational & Technical College, Liuzhou, Guangxi, China², Guangxi University of Science and Technology, Liuzhou, Guangxi, China³, Universiti Putra Malaysia, Serdang, Selangor, Malaysia⁴

Abstract. The automotive industry, being one of the worldwide important industries, is confronted with challenges such as environmental pollution and resource scarcity. The development of New Energy Vehicles has garnered international attention as one of the foremost initiatives to mitigate pollution and curb energy consumption. This study aims to investigate the current scenario of New Energy Vehicle Brand Companies in China, which has emerged as the world's largest market. This study identifies four critical challenges associated with the development of New Energy Vehicles in China, which hold significant implications for government policies, societal dynamics, economic growth, and environmental sustainability.

Keywords: New Energy Vehicles, Chinese Automobile Brand Companies, Industry policy, Issue.

1 Introduction

The automotive industry is globally recognized as one of the most significant industries [1]. Automobiles not only offer a convenient and efficient mode of transportation for individuals, families, and goods but also generate a multitude of job opportunities, both directly in manufacturing and indirectly in related sectors such as transportation, maintenance, sales, and services. According to Martin Placek [2], research data reveals that a staggering 85 million motor vehicles were produced worldwide in 2022. Behind this remarkable figure lies the unwavering dedication of countless individuals.

Although automobiles bring convenience to people's lives and create value for society, they also pose challenges to the living environment. Traditional fuel vehicles rely on burning oil in internal combustion engines, resulting in excessive oil consumption and emission of exhaust pollutants as the primary source [3]. The pressing issues of climate change and global resource scarcity have prompted a reevaluation of conventional individual mobility based on combustion engines [4]. New Energy Vehicles (NEVs) have emerged as a prominent solution within the automotive industry to address the crises related to oil dependency, energy shortage, and environmental pollution.

NEVs have garnered global attention and are rapidly advancing. According to Trend Force reports, global New Energy Vehicle sales were 5.462 million units in 1H23, reflecting a growth

of 33.6% YoY, while China, Western Europe, and the US continue to dominate NEV sales [5]. Actually, China dominated the global market with a share of 63% in 2022, establishing itself as the largest regional market. However, as Statista reported that China's growth can be attributed to government subsidies, a wider range of affordable electric vehicles, and increased market competition.

This paper aims to analyze the challenges faced by Chinese Automotive Brand Companies (CABCs) through an examination of China's NEV development. Section 2 reviews Chinese NEV industry policies that serve as key drivers for their development in China. Section 3 outlines the current state of NEV development in China and discusses the primary obstacles that CABCs must confront within a competitive market environment in section 4. Finally, this paper concludes with a summary and proposes potential research directions in section 5.

2 Chinese NEVs Industry Policy Review

The Chinese automotive sector has emerged as one of the fastest-growing markets in the global auto industry and cannot be ignored [6]. Since 2009, China has consistently ranked first in the world in terms of automobile production and sales volume. However, China's auto industry still has a long way to go before it can be considered a global auto power. According to relevant studies, Germany, Japan, and the United States are in the first camp of automobile power, while South Korea, France, and Italy are in the second camp, and Britain and China are in the third camp [7]. Most of China's auto parts Companies are small in scale, have limited technical capabilities, and lack expertise in key fields, which hinders the development of independent brand vehicle Companies by providing continuous and stable high-quality parts support.

To address this issue, Chinese President Xi Jinping inspected SAIC and proposed the concept of "automotive power" in May 2014. He pointed out that the development of NEVs is the only way for China to become an auto power country [8]. Subsequently, the development of NEVs became a top priority for China, and the Chinese government implemented a comprehensive range of policies aimed at promoting the growth of NEVs. These policies cover the entire stage of product innovation, manufacture, and use, as well as production supply, consumer demand, and application environment, as shown in Fig. 1.

Supply side	<ul style="list-style-type: none"> • Scientific and technological support • Macrosynthesis 	<ul style="list-style-type: none"> • Tax incentives 	<ul style="list-style-type: none"> • Charging piles and other infrastructure
Demand side			<ul style="list-style-type: none"> • Purchase subsidy • Tax exemption • Government procurement
Application environment		<ul style="list-style-type: none"> • Standard management • Access management • Industry norm 	<ul style="list-style-type: none"> • No restrictions on buying and driving • Financial support • Charging discount
	Innovation stage	Production stage	Use stage

Fig. 1. The overall layout of China's NEVs industry policy. Source: Pang De-liang [9].

These related policies were gradually issued according to the development of the industry. In general, China's policies on NEVs are mainly divided into four stages, the first stage is from the year 2001 to 2008, the second is the year 2009 to 2013, the third is from 2014 to 2017, and the fourth is after 2018 [9].

2.1 The first stage: From the year 2001 to 2008

In 2001, the Ministry of Science and Technology of China introduced the "863" Program Electric Vehicle Major Project, which outlined a "three vertical and three horizontal" framework [10]. The three vertical components include pure electric vehicles, hybrid electric vehicles, and fuel cell vehicles. The three horizontal components consist of a multi-energy powertrain control system, a motor drive system and control unit, and a power battery and battery pack management system, as shown in Fig. 2.

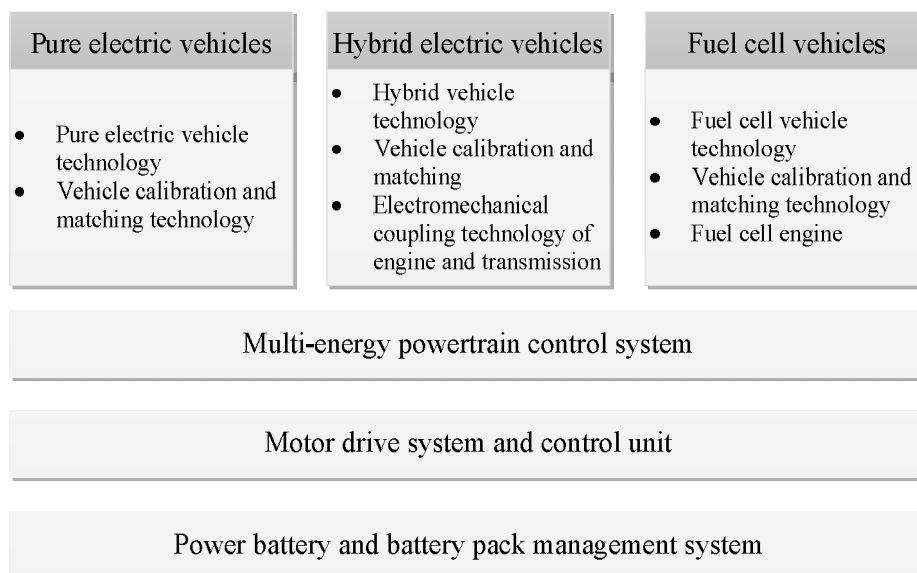


Fig. 2. The "three vertical and three horizontal" layout of NEVs major project. Source: ZHAO Dan & MA Jian [11].

During the Tenth Five-Year Plan period (2001-2005), China invested 20 billion yuan in establishing the "Three Vertical and Three Horizontal" technology system, leading to significant advancements in NEV technology and industry with a focus on power electrification [12]. In 2007, the National Development and Reform Commission of China issued the "New Energy Vehicle Production Access Management Rules," which provided systematic regulations for the standards and market system of the NEV industry [10].

During this stage, the institutional arrangement of the NEV industry primarily focused on the supply side and the innovation stage, with policies aimed at promoting research and development in the fundamental technologies of NEVs [9].

2.2 The second stage: From the year 2009 to 2013

The Central People's Government of the People's Republic of China issued the "Notice on the pilot work of demonstration and promotion of energy-saving and New Energy Vehicles" in 2009, determining the first pilot 13 cities including Beijing, Shanghai, Chongqing, Changchun, Dalian, Hangzhou, Jinan, Wuhan, Shenzhen, Hefei, Changsha, Kunming and Nanchang to demonstrate and promote energy-saving and new-energy vehicles. Encourage the use of energy-saving and new-energy vehicles in public services such as public transportation, leasing, public service, sanitation, and postal services through adopted fiscal policies. The department that purchased the energy-saving and new-energy vehicles would get a subsidy from the government [13]. China's NEVs moved from the stage of technological research and development to the stage of market application with the release of this announcement.

The Chinese central government announced the "Plan for Adjustment and Revitalization of the Automobile Industry" in 2009, outlining a special fund of 10 billion yuan to support in the country's NEV industrialization [10]. In the subsequent years, the Chinese government continued to widen the intended consumer base and the pilot program's scope.

During this stage, the Chinese government implemented a number of initiatives to encourage the sales and uptake of NEVs while continuing to support policies that were focused on production. In 2013, the Ministry of Finance and other Chinese governmental departments jointly issued a notice titled 'Continuing Promotion and Application of New Energy Vehicles,' which highlighted the progressive reduction in subsidy standards for NEVs over time and raised the eligibility criteria for subsidies [14]. The subsidization amount has gradually decreased since 2014.

2.3 The third stage: From the year 2014 to 2017

The Chinese government has established a comprehensive set of institutional frameworks to emphasize the importance of the industry, thereby directing Companies towards conducting research, fostering innovation, and expanding production activities. Additionally, they have initiated measures to encourage customer purchases during this phase.

For example, in 2014, the China Ministry of Finance and other departments released an "*Announcement on Exemption of New Energy Vehicle Purchase Tax*," which stated that NEVs would be exempt from vehicle purchase tax for 2014 [15]. Furthermore, in September 2015, The State Council's executive meeting mandated that all localities should not impose restrictions on the purchase and usage of NEVs on roads and any existing restrictions should be lifted [9]. To address traffic congestion and air pollution concerns effectively, several major cities in China have on consumers' acquisition and utilization of gasoline-powered vehicles. For instance, after purchasing a vehicle through a license plate lottery system if unsuccessful in plating through this process; driving the vehicle is prohibited.

Moreover, some regions enforce odd-even date-based driving restrictions where vehicles with license plates ending in an odd number are barred from being driven on even-numbered dates and vice versa; non-compliance results in penalties such as fines or tickets. In 2017, the Ministry of Industry and Information Technology issued [16], which facilitated adjustments to NEV industry policies by focusing on guiding mass consumption patterns while promoting enterprise-independent innovation.

2.4 The fourth stage: After the year 2018

With the implementation of a series of government policies, public awareness of environmental protection has gradually increased and market recognition of NEVs has significantly improved. China became the world's largest market for NEVs in 2017, and since 2018, its NEV industry has entered a period of accelerated development [9].

However, in the coming years, subsidies for NEVs will be reduced as indicated by the “Notice on Fiscal Subsidy Policy for the Promotion and Application of new energy Vehicles in 2022” [17] jointly issued on December 31, 2021. This policy states that subsidies will not be given to vehicles registered after December 31st, 2022; thus, ending purchase price subsidy policies for NEVs.

In summary, government leadership and policy support have been instrumental in driving China's rapid development within its NEV industry [11]. For instance, vehicle purchase subsidies can lower prices making it possible for consumers with moderate incomes to afford them. Additionally, individuals with low incomes may consider lower total cost ownership associated with new energy vehicles such as less maintenance/repair costs or low cost per mile when deciding whether to buy an EV over conventional cars [18], which effectively boosts sales volume while stimulating this emerging market.

3 The Current Situation of Chinese NEV Development

Benefiting from China's national policies, the new energy vehicle (NEV) industry in China has experienced remarkable growth, guided by robust support and guidance [19]. The production and sales of NEVs have witnessed a rapid surge, accompanied by a significant increase in the number of CABCs.

Specifically, according to the data from China Association of Automobile Manufacturers (<http://www.caam.org.cn>) shows that the production of NEVs in China escalated from 0.0839 million units in 2014 to an impressive 7.058 million units by 2022 (as depicted in Fig. 3), reflecting an extraordinary growth rate exceeding 8000%. According to the latest data forecast China's new energy vehicle production will exceed 8.5 million in 2023 and will exceed 11 million in 2024.

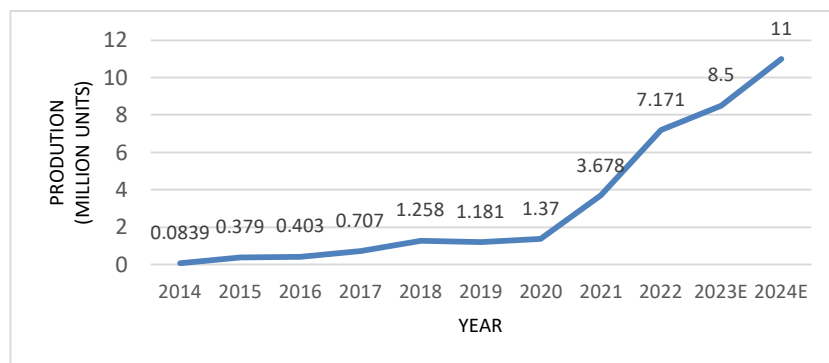


Fig. 3. China's new energy vehicle production from 2014 to 2024.

Meanwhile, the number of CABCs has increased year by year with the strong support of the government's industrial policy. According to the "Catalogue of New Energy Vehicle Models Exempted from Vehicle Purchase Tax" issued by the Ministry of Industry and Information Technology of the People's Republic of China (<https://www.miit.gov.-cn>) over the years, after sorting out the relevant electric vehicle manufacturers from 2014 to 2021, the number of Companies producing NEVs in China has continued to increase those years. In 2014, the total number was 57, and this figure reached 275 by 2021, an increase of the amplitude reached 382% as shown in Fig. 4.

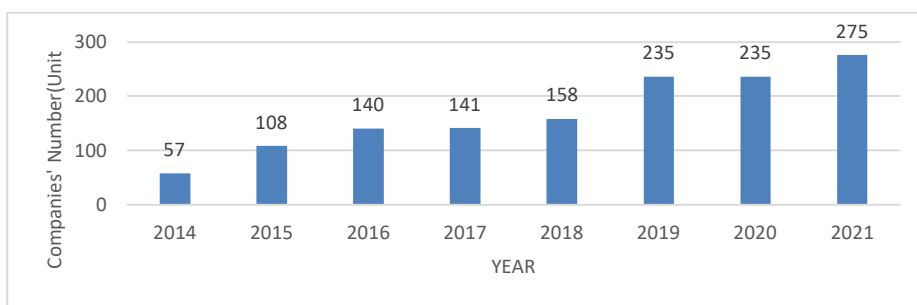


Fig. 4. The number of NEV companies in China from 2014 to 2021.

In fact, a significant number of these companies have not yet sold any vehicles until now. According to data provided by the China Passenger Car Association, only fewer than 70 Chinese auto companies can produce and sale NEVs. The number of these companies reached a maximum of 69 in 2022, and fell to 63 in 2023 (show as Fig. 5). It can be seen that in 2023, some automobile companies have stopped production.

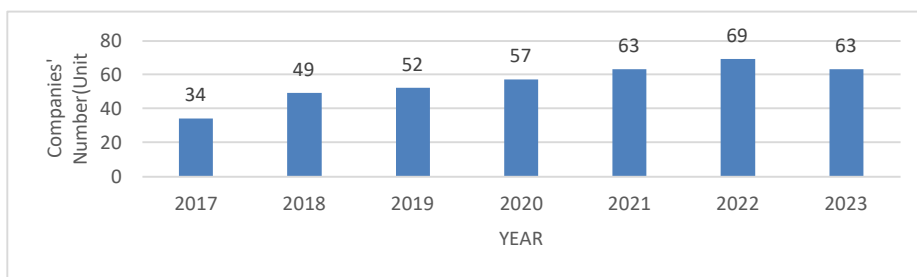


Fig. 5. The statistics of companies that have sold NEVs in China from 2017 to 2023.

By comparing the data in Fig. 4 and Fig. 5, it can be found that most Chinese automobile brand companies do not produce and sell new energy vehicles.

4 Issues Faced by Chinese Automobile Brand Companies

The profit margin of China's auto industry has been declining since 2015, as shown in Table 1. Despite the automotive industry's revenue exceeding 900 billion yuan in 2022, the profit margin for the period has fallen below 6%, reaching only 5.7%. This indicates that the profitability of the industry has been under pressure during this period.

Table 1. China's automotive industry revenues, costs, and profit margins from 2015 to 2022.

Year	2015	2016	2017	2018	2019	2020	2021	2022
Auto Production (10,000 Units)	2484	2819	2994	2797	2553	2463	2653	2702
Revenues (100 Million Yuan)	70157	80186	87750	83373	80847	81558	86706	92900
Costs (100 million yuan)	6071	6677	6833	6091	5087	5094	5306	5320
Profit Margin for the Period	8.7%	8.3%	7.8%	7.3%	6.3%	6.2%	6.1%	5.7%

Data source: China Passenger Car Association (CPCA), obtained in June 2022.

Note: USD 1\$= CNY 6.9646, according to the People's Bank of China, on December 30, 2022.

The decline in profits in China's automobile industry is closely related to the development of NEVs, which has led to some companies' bankruptcy or reorganization. However, the rapid development of NEVs in China can be attributed to government leadership and policy support. According to ZHAO Dan [11], the Chinese government's policies have been instrumental in promoting the development of the NEV industry in China. The subsidy policy issued by the government has attracted more companies to devote themselves to the NEV industry and more consumers to buy NEVs, thereby promoting the growth of the NEV market in China [20].

The rapid development of NEVs in China is driven more by policy than the market. However, policy-driven markets are usually volatile markets. If the policy suddenly loses its appeal, the market will probably overreact, and this is the case in the NEV market [21]. There are evident issues faced by Chinese automakers with the decline of China's NEV industry support policies.

4.1 Issue 1: Chinese Automobile Brand Companies face severe market pressure.

Consumers place a significant emphasis on the cost of purchasing, using, and maintaining electric vehicles. The more affordable an electric vehicle is, the more likely consumers are to choose it over a gasoline-powered vehicle of the same grade [20]. The Chinese government has implemented various measures, such as car purchase subsidies and purchase tax exemptions, to directly reduce the cost of purchasing electric vehicles [22]. However, a decline in government subsidies can directly impact consumers' purchase intentions by increasing the cost of purchasing electric vehicles, thereby diminishing the price advantage of NEVs [23]. This has led to consumer reluctance in accepting price increases for NEVs, which, in turn, presents challenges for companies in controlling price hikes due to the decline in government policy support, resulting in a slowdown in NEV sales growth [24]. As a result, ABCs are facing market pressures [25].

In summary, the cost-effectiveness of electric vehicles and the availability of government subsidies play a crucial role in consumer purchase decisions. The decline in government support and potential price increases have impacted consumer preferences and sales growth in the NEV market, posing challenges for ABCs.

4.2 Issue 2: Chinese Automobile Brand Companies face severe cost problems.

The decline in government subsidies has resulted in significant cost pressure on CABCs [26], with rising costs being one of the main challenges faced by these companies. The cost pressures are caused by two factors, including the reduction of the government's industrial policy support and the increase in costs. Dong Yudong, CEO of ORA brand vehicle, attributed the loss of Black Cat and White Cat models to the rise in raw material prices, the continued decline of NEV subsidies in 2022, and the cost impact of the chip shortage, resulting in a loss of more than 10,000 yuan for each vehicle sold [27].

According to China International Capital Corporation's statistics, the current cost increase of NEVs is 10%-20%, which means the cost increase of a vehicle is about 10,000, which is significant for small electric vehicles with lower prices [28]. The challenge for CABCs is to strike a balance between rising prices and cost pressure. If the price does not increase, the cost pressure on the company will be too significant, but if the price increases too much, it may affect the sales of the vehicles. Therefore, the companies can only increase the price slightly to reduce cost pressure, and the remaining cost gap can only be borne by the company itself [29].

In the past, many CABCs have resorted to selling their vehicles at prices lower than their production costs due to cost pressure and production capacity restrictions. However, whether these companies can establish the corresponding relationship between price and cost in line with the law of the market will determine the survival of these brands [30]. In summary, rising costs pose significant challenges for CABCs, and striking a balance between pricing and cost pressure is crucial for their survival in the NEV market.

4.3 Issue 3: Some Chinese Automobile Brand Companies have suffered serious losses.

The reduction in governmental support for industrial policies and the escalation in battery raw material prices have led to significant financial setbacks for CABCs [28]. Both emerging and established CABCs have encountered substantial economic losses. For instance, NETA Motor reported a net loss of 2.9 billion yuan in 2021 and an additional net loss of 1.32 billion yuan in 2020, resulting in a cumulative deficit of 4.2 billion yuan over the span of two years [31]. Similarly, NEXTEV and Xiaopeng recorded net losses of 1.78 billion yuan and 1.7 billion yuan respectively during the first quarter of 2022 [32].

Moreover, some CABCs heavily rely on government subsidies as their primary source of income rather than vehicle sales. For example, BAIC New Energy's sales revenue was 10.9 billion yuan, while the financial subsidy reached 4.959 billion yuan in 2017. In 2020, the government subsidy amounted to a staggering 15.1 billion yuan, while the operating income was only 5.2 billion yuan, resulting in a net loss [33].

To summarize, the decline in subsidies and the increase in raw material costs have significantly impacted the financial performance of CABCs, leading to substantial losses. These challenges highlight the need for CABCs to find a balance between pricing and cost pressures to survive in the market.

4.4 Issue 4: Some Chinese Automobile Brand Companies face bankruptcy.

The rapid increase in the number of CABCs in recent years was driven by the supportive policies of the Chinese government. However, with the weakening of industrial policy support, many CABCs have faced bankruptcy, and this trend is expected to continue as competition intensifies.

According to a report, 75 CABCs have gone bankrupt in the past three years [34], including well-known traditional automobile brands. For example, Tianjin FAW Xieli Automobile Co., Ltd., founded in 1997 and listed in 1999, ceased vehicle production in 2020. Zhonghua Automobile, a famous Chinese automobile brand that started producing vehicles in 2000, was acquired by BMW in 2021. Zotye Automobile, a successful Chinese automobile company founded in 2003, underwent restructuring and changed ownership in 2021. Additionally, some CABCs, like Byton Motors, went bankrupt without even producing a single vehicle. Byton Motors, established in 2017 and having received 8.4 billion yuan in financing, spent all the funds without producing a vehicle [35, 36].

The intense market competition has put many weak CABCs in trouble. Zhu Huarong, chairman of Chongqing Changan Automobile Co., Ltd., a well-known Chinese automobile brand manufacturer, stated at the 2022 China Electric Vehicle 100 Forum that about 80% of CABCs will either close down, suspend operations, merge with other companies, or change their production strategies in the next 3-5 years [37].

5 Conclusion

In conclusion, the rapid growth of China's NEV sector and the increasing number of CABCs can be attributed to the supportive industrial policies implemented by the Chinese government. However, as these policies are gradually reduced, CABCs are facing numerous challenges. This article provides an overview of the development of China's NEV industry and highlights key issues currently faced by CABCs. These issues can serve as valuable considerations for future researchers and offer insights into the Chinese NEV industry.

Furthermore, CABCs are operating in an uncertain and highly competitive external environment. To ensure long-term development and maintain a competitive advantage, business managers must carefully consider their strategies. As suggested by D. Teece [38], in dynamic and uncertain business environments, organizational agility, effective strategic management, entrepreneurial leadership, and strong dynamic capabilities become crucial for sustained growth and financial performance. Therefore, further research can explore various aspects related to CABCs, including organizational agility, strategic management, entrepreneurial leadership, dynamic capabilities, and their impact on corporate development.

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References

- [1] Sanguesa, J. A., Torres-Sanz, V., Garrido, P., Martinez, F. J., & Marquez-Barja, J. M. (2021). A Review on Electric Vehicles: Technologies and Challenges. *Smart Cities*, 4(1), 372–404.
- [2] Martin Placek. (2023). Estimated worldwide motor vehicle production from 2000 to 2022. *Statista*. Retrieved June 17, 2023, from <https://www.statista.com/statistics/262747/worldwide-automobile-production-since-2000/>
- [3] Li Miaoran. (2020). *China's New Energy Automobile Industry Support Policy Effect* (Doctoral Thesis). University of Chinese Academy of Social Sciences (Graduate College).
- [4] Fabian Kley, Christian Lerch, & David Dallinger. (2011). New business models for electric cars— A holistic approach. *Energy Policy*, 39(6), 3392–3403.
- [5] Chen, C. (2023, August 17). BYD Closes In on Tesla in Q2 BEV Sales, with Surges Noted in Thailand and Australia, Says TrendForce. TrendForce. Re-trieved December 28, 2023, from <https://www.trendforce.com/presscenter/news/20230817-11795.html>
- [6] Mei Winnie Song. (2010). *The development and use of electronic business in the Chinese automotive supply chains* (Ph.D.). University of Nottingham.
- [7] Zhao Fuquan, Liu Zongwei, Hao Han, Wang Yue, & Zhao Shijia. (2016). A Comprehensive Evaluation System for Automotive Industry of Different Nations. *Chinese Journal of Automotive Engineering*, 6(2), 79–86.
- [8] Xi Jinping: New energy vehicles are the important way to power country by automobile industry. (2014). *Special purpose vehicle*, (6), 78.
- [9] Pang De-liang, Bu Rui, & Liu Zhao-guo. (2022). Suggestions on the Evolution and Optimization of Institutional Arrangements for China's New Energy Vehicles Industry. *ECONOMIC REVIEW JOURNAL*, (04), 106–115.
- [10] Zhang Jincheng & Fang Weihua. (2022). Research on the Evolution of Innovation Ecosystem from the Perspective of Policy Change: Taking the New Energy Vehicle Industry as an Example. *Science and Technology Management Research*, 42(11), 173–182.
- [11] ZHAO Dan & MA Jian. (2020). Development status, problems and future of electric vehicles in China. *Journal of Chang'an University (Social Science Edition)*, 22(04), 51–61.
- [12] Yang Xinfu. (2021). Research on the development of China's new energy automobile industry under the background of "One Belt and One Road." *HEBEINONGJI*, (05), 49–50.
- [13] Ministry of Finance of People's Republic of China. (2009, February 5). Notice on the pilot work of demonstration and promotion of energy-saving and new energy vehicles. *The Central People's Government of the People's Republic of China*.
- [14] Ministry of Finance of People's Republic of China. (2013, September 13). Notice on continuing to carry out promotion and application of new energy vehicles. *Ministry of Finance of the People's Republic of China*.
- [15] Ministry of Finance, People's Republic of China, State Administration of Taxation, & Ministry of Industry and Information Technology of People's Republic of China. (2014, August 1). Announcement on exemption of new energy vehicle purchase tax. *Ministry of Finance of the People's Republic of China*.
- [16] Ministry of Industry and Information Technology of the People's Republic of China, Ministry of Finance of the People's Republic of China, Ministry of Commerce of the People's Republic of China, General Administration of Customs of the People's Republic of China, & General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China. (2017, September 28). Measures for parallel management of average fuel consumption and credits of new energy vehicles

in passenger vehicle enterprises. *Ministry of Industry and Information Technology of the People's Republic of China*.

[17] Ministry of Finance of the People's Republic of China. (2021, December 31). Notice on Fiscal Subsidy Policy for the Promotion and Application of new energy Vehicles in 2022. *Ministry of Finance of the People's Republic of China*.

[18] Ivanova, G., & Moreira, A. C. (2023). Antecedents of Electric Vehicle Purchase Intention from the Consumer's Perspective: A Systematic Literature Review. *Sustainability*, 15(4), 2878.

[19] MA Jian, LIU Xiao-dong, CHEN Yi-song, WANG Gui-ping, ZHAO Xuan, HE Yi-lin, ... ZHANG Yi-xi. (2018). Current Status and Countermeasures for China's New Energy Automobile Industry and Technology Development. *China J. Highw. Transp.*, 31(08), 1–19.

[20] YANG Shu-xia, CHENG Xiao-yu, & ZHU Chun-xu. (2021). Consumer Behaviors of Private Electric Vehicles in Post Subsidy Era and "Separation of Vehicle and Electricity" Model. *Journal of North China Electric Power University (Social Sciences)*, (01), 35–47.

[21] Cao Qing. (2020). Current State of the New Energy Vehicle Industry and Policies in the Post-Subsidy Era. *Advanced Materials Industry*, (05), 37–40.

[22] CHENG Peng, LIU Xielin, LI Yang, & ZHOU Jianghua. (2018). Research on Formation Mechanism of Disruptive Innovation in the Context of Local Demand. *Journal of Management Science*, 31(02), 33–44.

[23] Hao Hao & Xu Wenxian. (2021). Research on the Development of China's New Energy Vehicle Industry in the Post Subsidy Era. *Science & Technology Vision*, (17), 109–111.

[24] YIN Ruo-qing, SHEN Wang-yi-jia, & MA Yi-xuan. (2022). The Influence of Government Subsidy Policy on Enterprises of New Energy Vehicles. *LOGISTICS ENGINEERING AND MANAGEMENT*, 44(06), 125–128.

[25] Li Wenjian, Dai Liangping, Guo Benhai, & Wu Siyuan. (2021). Game analysis of cooperative innovation for the upstream and downstream enterprises of new energy vehicles under the compound traction mechanism in subsidies recession era. *Soft Science*, 35(01), 81–88.

[26] Yu Dayong. (2022, April 11). Amidst the Resounding Calls for Price Increases: When Will New Energy Vehicle Prices Return to Rational Levels? *CHINA HIGH-TECH INDUSTRY HERALD*, p. 015.

[27] Zhao Xueyi & Zhang Xiaoyu. (2022, February 26). Suspension of Orders for "Black Cat White Cat" Models Due to Unavoidable Losses, Great Wall Motors' Ora Brand to Introduce New Vehicles. *Securities Daily*, p. A03.

[28] Xu Yajie. (2022, April 7). Price hikes and difficult to get the vehicles: have new energy vehicles encountered "bottlenecks"? *China Youth Daily*, p. 011.

[29] Pu Zhenyu. (2022, April 18). Business Insights of Electric Vehicle Price Increases. *The Economic Observer*.

[30] Bai Lin. (2022, March 20). Widespread Price Increases in New Energy Vehicles and Industry Differentiation Is on the Horizon. *Chongqing Daily*.

[31] Wang Shuaiguo & Zhang Xinlin. (2022, August 8). The Fourfold Crisis Beneath NETA's Highlight. *The Economic Observer*, p. 022.

[32] Gong Qianshu. (2022, June 17). Growth Challenges of Emerging Forces in the Automotive Manufacturing Industry. *South Daily*, p. B04.

[33] Cao Yu. (2022). Causative Factors and Performance Analysis of BAIC New Energy's Backdoor Listing. *Green Finance and Accounting*, (01), 34–36.

[34] Yu Jianping & Cai Liyuan. (2023, August 7). Surge in July Sales for New Automakers, All of NIO, XIAOPENG, and Li Exceed Ten Thousand. *China Times*.

- [35] DU Qiaomei. (2021, November 2). Nanjing Zhixing new Energy bankruptcy liquidation case opened: Byton Auto “end of song”? *21st Century Business Herald*, p. 012.
- [36] LV Jiangtao. (2021). Burning through 8.4 billion RMB with zero production output: Byton Automotive Life-or-Death Situation – Can Even Foxconn Save It? *CHINA ECONOMIC WEEKLY*, pp. 76–77.
- [37] Liujin. (2022, August 1). Automakers Enter the Accelerated Differentiation Period. *Economic Daily*, p. 006.
- [38] Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic Capabilities and Organizational Agility: Risk, Uncertainty, and Strategy in the Innovation Economy. *California Management Review*, 58(4), 13–35.