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Navigating Europe's "De-Risking" Policy: Challenges and Strategies of Chinese New Energy Vehicles

Zhuofan Yu

German College, Beijing Foreign Studies University, Beijing, China
202220106023@bfsu.edu.cn

Abstract: Driven by the global green transformation and carbon neutrality, new energy vehicle (NEV) industry has become the core area of international competition and cooperation. In recent years, the policy environment of the European NEV industry has changed significantly, especially under the influence of "De-Risking" policy, raising regulatory barriers while reshaping market dynamics. Chinese NEV enterprises are facing both challenges and opportunities in entering the European market. These shifts have driven up compliance and production costs, altered investment flows, and intensified supply chain restructuring. As a result, Chinese NEV manufacturers not only face higher entry costs, but also must navigate changing consumer demand and competitive pressures in an increasingly protectionist environment. This study focuses on two Chinese NEV companies, BYD and Geely, and explores their expansion strategies, supply chain localization, and technology cooperation models in the European market. The study finds that, despite the increased barriers to enter into the European market, Chinese firms can still maintain their competitive advantage by strengthening supply chain localization, deepening cooperation with European firms, and promoting technological innovation. This study helps to understand the evolution of European NEV industry policies and provides a reference for Chinese NEV enterprises to formulate internationalization strategies.

Keywords: new energy vehicle, "De-Risking" policy, supply chain

1. Introduction

New Energy Vehicles (NEVs) refer to vehicles that are fully or predominantly powered by new energy sources such as electricity or hydrogen, as well as those utilizing non-traditional fuels like bioethanol, liquefied natural gas, biogas, and biodiesel. In the context of Chinese policies, NEVs specifically include battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell electric vehicles (FCEVs) [1, 2]. Due to their substantial potential for energy conservation and emissions reduction, NEVs have gained increasing global attention [3, 4]. Since the late 1990s, the Chinese government has actively promoted NEV development, with a particular emphasis on electric vehicles [5]. The Chinese authorities have also regarded the NEV sector as a strategic opportunity to surpass developed nations in the automotive industry, leveraging the relatively narrow technological and industrial gap in this field [5].

Against this background, China has emerged as a global leader in NEV production and adoption, with companies such as BYD and Geely spearheading the international expansion of Chinese electric vehicle brands. In particular, Europe has become a key target market for Chinese NEV manufacturers

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due to the region's strong policy support for green transportation and its commitment to achieving climate goals. However, as European policymakers seek to reduce reliance on external supply chains, the European Union (EU) has introduced a series of "De-Risking" policies. Notably, the Critical Raw Materials Act (CRMA), the European Battery Alliance (EBA), and the Carbon Border Adjustment Mechanism (CBAM) are designed to enhance Europe's self-sufficiency in battery supply chains and mitigate dependence on Chinese imports [6]. These challenges include stricter market entry barriers, increased regulatory requirements, and supply chain localization pressures. Therefore, a comprehensive assessment of the impact of "De-Risking" policies on Chinese NEV manufacturers is essential for understanding the future trajectory of China-Europe cooperation in the NEV sector.

The increasing significance of the NEV industry in the global transition towards sustainability has attracted considerable academic and policy attention. While extensive research has explored China's domestic NEV policies and industrial growth, limited studies have examined the intersection between European "De-Risking" policies and the internationalization of Chinese NEV enterprises [5]. This study fills this gap by systematically analyzing how European regulatory frameworks impact Chinese NEV manufacturers operating in the region.

To comprehensively assess these dynamics, this study employs a policy analysis approach to examine the design and implications of key EU policies, evaluating their role in shaping market conditions for foreign NEV enterprises. Furthermore, a case study method is applied to analyze the market entry strategies of BYD and Geely, focusing on aspects such as factory establishment, supply chain localization, and investment decisions. This comparative approach highlights how different corporate strategies influence adaptability to European regulatory challenges. Additionally, analysis with data support is conducted to assess China-Europe NEV trade flows, market shares, and investment patterns, providing an empirical foundation for understanding the broader economic impact of these policies.

By integrating these methodologies, this research provides a multidimensional perspective on the challenges and opportunities faced by Chinese NEV enterprises in Europe. The findings contribute to both academic discussions on trade policy, industrial strategy, and supply chain resilience, as well as offer practical insights for business leaders and policymakers navigating the evolving China-EU economic landscape. Through this study, a more nuanced understanding of "De-Risking" policies and their implications for international NEV cooperation can be achieved.

2. The impact of "De-Risking" policies on China's NEV industry

2.1. Overview of the European NEV market

In recent years, the European NEV market has experienced sustained and rapid growth, driven by government policy support, infrastructure improvements, and rising consumer environmental awareness. According to the International Energy Agency (IEA), annual NEV sales in Europe surged from 569,000 units in 2018 to 3.32 million units in 2022, maintaining strong growth momentum. Among them, sales reached 2.26 million units in 2021, up by 65% year-on-year, and further increased by 47% in 2022, an upward trend that underscores the growing acceptance of NEVs in the European market.

This growth is mainly driven by stringent EU carbon emission regulations, government subsidy policies and the rapid expansion of charging facilities. Notably, major markets such as Germany, France, and the UK have excelled in electrification, with BEV penetration rates reaching 18.5%, 16.2%, and 23.1%, respectively, by August 2024, compared to relatively low adoption rates in Italy (8.7%) and Spain (11.4%), reflecting variations in national policy frameworks, consumer preferences, and infrastructure development. As the penetration of NEVs in the European market increases,

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competition between local and foreign brands will intensify, further reshaping the landscape of the European automotive industry.

2.2. The expansion of Chinese NEVs in the European market

Although the European NEV market has historically been dominated by traditional car companies such as Tesla, Bayerische Motoren Werke (BMW) and Volkswagen, Chinese brands have steadily increased their market share in recent years. McKinsey's report shows that, as displayed in Table 1 below, that sales of Chinese NEVs in Europe increased from 12,000 units in 2018 (2.1% market share) to 240,000 units in 2022 (7.2%). In particular, Chinese brands reached 120,000 units in 2021, accounting for 5.3% of the market, marking their accelerated penetration in the European market.

Table 1: Chinese NEV in Europe (data from: McKinsey China EV report 2023)

Year	Chinese NEV Sales (in thousands)	Market Share (%)
2018	12	2.1
2019	25	2.1
2020	45	3.3
2021	120	5.3
2022	240	7.2

2.3. The direct impacts and challenges confronting Chinese NEVs

The EU's "De-Risking" strategy aims at reducing dependence on external suppliers, especially those from China, while fostering a more resilient and self-sufficient industrial ecosystem [7]. In the field of NEVs, the EU has implemented a number of key policies, including the establishment of the EBA to develop a local battery value chain, the introduction of the CRMA to ensure the supply of key materials, and the introduction of the CBAM to implement carbon pricing on imported goods. For example, the EU imposed additional anti-subsidy duties on BEVs imported from China, with BYD being taxed 17.4%, Geely being taxed 19.9%, and Shanghai Automotive Industry Corporation (SAIC) being taxed 37.6%.

These policies reflect the EU's ambition to enhance local manufacturing capabilities, ensure the supply of strategic resources, and reduce the impact of external market fluctuations. At the same time, they also bring new challenges to foreign companies, especially Chinese NEV manufacturers.

The EU officially announced on October 29, 2024, a five-year countervailing duty on Chinese imports of electric vehicles, and the implementation of these tariffs has had a significant impact on the performance of China's NEV manufacturers in the European market. In the first half of 2024, Geely sold 68,400 units in Europe, a decrease of 80,200 units compared to the same period in 2023, representing a year-on-year decline of 14.8%. Its market share fell to 3.2% from 4.1% in 2023, with the German market down by 28% and the French market down by 19%. Cancellations of undelivered orders reached 18% in the three months after the policy was announced.

In contrast, BYD's export sales in Europe reached 7,890 units in the first half of 2024, up by 532.7% year-on-year, overtaking Polaris to become the third best-selling Chinese electric vehicle brand in Europe, despite tariff pressure. However, BYD's total sales in Europe in 2023 was only 14,905 units, with the Atto 3 model accounting for 80% of the total, indicating that its market penetration is still limited.

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3. Strategic approaches for Chinese NEV companies to overcome challenges

As the EU's "De-Risking" strategy reshapes the competitive landscape of the European NEV market, leading Chinese automakers such as Geely and BYD have adopted their own unique and strategic responses to adapt to regulatory challenges, enhance market penetration, and strengthen supply chain resilience. This study systematically analyzes their strategic approaches, summarizes their competitive effectiveness, and explores key factors for Chinese NEV manufacturers to sustain long-term competitiveness in Europe.

3.1. Geely's expansion strategy in Europe

In the process of globalization and expansion, Geely has precisely covered different market segments through cross-border mergers and acquisitions and multi-brand strategy to enhance brand influence and market competitiveness [8]. Its core strategies include acquiring high-end brands to enter the European market, building a multi-brand matrix to meet the needs of different consumer groups, and enhancing overall competitiveness through technological synergy.

In 2010, Geely acquired Volvo to realize high-end upgrade through its safety technology and environmental standards. Subsequently, Geely perfected its new energy brand layout through further acquisitions and cooperation (for example, Polestar, Smart, etc.) to meet the European market's demand for sustainable and high-end electric mobility. Specifically, Volvo and Polaris focus on the high-end market, attracting high-end consumers to adopt cutting-edge safety technologies and innovative designs; Zeekr and Lynk & Co target the mid-to-high-end market, providing cost-effective smart mobility solutions, and innovatively adopting the "direct sales + subscription" model to enhance market appeal.

Geely also emphasizes technology integration and collaborative research and development (R&D), leveraging the synergies of its acquired brands to improve overall product competitiveness. For example, Geely and Volvo have jointly developed the Compact Modular Architecture (CMA) platform, which enables the co-production of fuel and NEVs, optimize costs and enhance market adaptability [9]. At the same time, Geely is actively promoting environmental innovations, such as the use of recyclable materials and the optimization of powertrain efficiency, in order to comply with Europe's increasingly stringent carbon-neutral regulations and to meet consumer demand for sustainable mobility.

3.2. BYD's expansion strategy in Europe

Unlike Geely's reliance on brand mergers and acquisitions, BYD's globalization strategy focuses more on localized production, supply chain integration, and in-depth cooperation with European stakeholders in order to reduce operating costs, improve market adaptability, and circumvent trade barriers.

BYD builds production plants in key markets to reduce logistics and tariff costs, circumvent trade barriers, and enhance supply chain stability. In 2023, BYD announced its first European passenger car plant in Hungary and plans further expansion in Germany, France, and the UK to meet growing local demand for NEVs.

At the same time, BYD strengthens cooperation with key stakeholders in Europe, including governments, automotive companies, leasing companies and distribution networks, to expand its distribution channels, optimize after-sales services, and drive fleet sales so as to accelerate market penetration. For instance, in the process of building Hungary plant, BYD received infrastructure support and financial incentives from the government to ensure smooth progress, which enhanced local integration by creating jobs and promoting green energy, boosting brand trust and adaptability.

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BYD is also committed to its supply chain localization, collaborating with European component suppliers to reduce costs and improve sustainability. BYD makes full use of its advantages in battery technology to ensure that its core technologies, such as blade batteries, meet the strict environmental and safety standards of the European market, thus enhancing product compliance and market competitiveness [10]. By integrating global supply chain resources, BYD is able to improve production efficiency and cost optimization, ensuring its NEVs adapt to European consumer demand.

3.3. Generalized strategic framework for market expansion

To succeed in Europe, Chinese NEV manufacturers must enhance technological innovation, strengthen capital and policy cooperation, localize supply chains, and diversify market strategies.

3.3.1. Technological advancements in power batteries and intelligence systems

China's NEV manufacturers are improving vehicle performance and competitiveness in the global market through innovations in battery technology, particularly breakthroughs in energy density and low-temperature performance of lithium manganese iron phosphate (LMFP) batteries and lithium iron phosphate (LFP) batteries [11]. BYD's blade batteries use advanced electrode materials and structural design to increase energy density to about 180 Wh/kg and applies LMFP batteries to extend the battery life, improving range and increasing market acceptance in Europe [12, 13]. Meanwhile, Contemporary Amperex Technology Co., Limited (CATL) and other companies have optimized electrolyte formulations to improve battery performance in low-temperature environments, enabling them to meet European regulatory requirements with high capacity at minus 20 degrees Celsius. In addition to improving existing battery technology, Chinese companies are also actively laying out solid-state battery research and development. Solid-state batteries are seen as the next generation of battery technology due to their superior safety, thermal stability and energy density, and companies such as CATL and BYD are increasing their R&D investment and patent reserves, as well as maintaining their technological leadership and promoting industrialization through pilot production and cooperation with European automakers.

In terms of intelligence, Chinese companies are accelerating the development of autonomous driving and smart internet technologies to meet global market demand. Companies such as Xiaopeng Automobile (XPeng) are advancing L3-level autonomous driving functions and improving decision-making capabilities under complex road conditions through advanced sensor fusion and artificial intelligence-based traffic interpretation. In addition, Chinese automakers are accelerating the adoption of Internet of Vehicles (IoV) and Over-the-Air (OTA) technologies, and working with local European navigation and payment service providers to optimize the smart mobility experience, while ensuring compliance with European data compliance requirements and enhancing market adaptability.

3.3.2. Supply chain localization: enhancing market responsiveness and cost efficiency

To enhance their competitiveness in the European market, Chinese NEV companies are accelerating the localization of their supply chains to optimize production efficiency, reduce logistics costs and comply with European regulations through localized raw material supply, manufacturing base construction and green production.

In terms of upstream raw material supply, Chinese companies are working with European mineral companies through mergers, joint ventures and long-term agreements to ensure a stable supply of lithium, nickel and cobalt, and are setting up local bases for key battery materials to reduce costs and enhance supply chain resilience [14]. In addition, localized production of key battery components, such as cathode and anode materials, diaphragms, and electrolytes, can help improve production efficiency and reduce uncertainties associated with cross-border transportation.

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In the battery manufacturing segment, Chinese companies are accelerating the establishment of a complete battery production system in Europe, covering raw material processing, battery manufacturing and battery assembly. This strategy not only reduces import tariffs, but also ensures compliance with EU sustainable development requirements. CATL's production base in Germany adopts green manufacturing technology and utilizes renewable energy to reduce carbon emissions and enhance environmental credentials. At the same time, in-depth cooperation with European automakers enables battery products to be customized for local market demand, improving product suitability and market acceptance.

In terms of vehicle and core parts manufacturing, Chinese NEV enterprises are relying on Europe's mature automotive industry clusters to establish localized production bases in core markets such as Germany, France and Sweden. Through the localized production of components such as powertrain, electric motor and electronic control system, enterprises have reduced logistics costs and enhanced supply chain synergy [15]. In addition, green manufacturing has become an important part of the localization strategy, including the adoption of renewable energy sources and optimization of energy consumption management, in order to comply with the European carbon neutrality target and enhance brand competitiveness.

4. Conclusion

This study analyzes the challenges and strategies of Chinese NEV enterprises entering the European market under the "De-Risking" policy, using BYD and Geely as case studies. The findings indicate that although the demand for NEVs in the European market continues to grow, Chinese enterprises face significant obstacles, including trade friction, industry chain reorganization, technical barriers, and brand perception differences. Despite their advantages in supply chain integration, cost efficiency, and technological innovation, policy uncertainty and market restructuring have constrained their expansion. To navigate these challenges, Chinese NEV enterprises must enhance localized production, strengthen brand positioning, and invest in technological innovation to achieve sustainable growth in Europe.

Based on these findings, this study suggests that Chinese NEV enterprises should accelerate the process of industrial chain localization, establish a perfect production and supply system in Europe to reduce the uncertainty brought by policy barriers and deepen cooperation with local governments and businesses. Additionally, optimizing branding strategies and focusing on technological innovation, service system construction and user experience will be crucial to overcoming "low-end manufacturing" market perception barriers. Furthermore, given Europe's increasingly stringent environmental regulations, increased R&D investment in battery technology and green energy is essential to enhance core competitiveness.

However, this study has certain limitations. The dynamic nature of European NEV policies may impact the applicability of market entry strategies. Moreover, as a case study-based qualitative analysis, this research is not sufficient to comprehensively cover the internationalization paths of all Chinese NEV companies and fails to quantify the specific economic impacts of policy, market and technology factors on firms' internationalization. Future studies could employ quantitative methods and expand the sample scope to provide a more comprehensive analytical framework for policymakers and businesses.

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