

ESG Green Practices of Chinese Automakers under the EU Carbon Tariff Background:A Case Study of SAIC Motor's "Carbon Reduction"

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ABSTRACT

This study, set against the backdrop of the implementation of the EU Carbon Border Adjustment Mechanism (CBAM), explores the challenges it poses to the export competitiveness and green transformation of Chinese automobile enterprises. Using SAIC Motor as a case study, it systematically analyzes its practices and response strategies in the ESG domain. The research indicates that the EU carbon tariff presents multiple challenges for Chinese automakers through increased carbon costs, strengthened trade barriers, and accelerated pressure for green transformation. SAIC Motor has effectively enhanced its green competitiveness and adaptability to the international market by constructing a "1+3" collaborative optimization model. This model is based on a comprehensive ESG governance system, combined with a circular economy model, carbon footprint certification, and climate action across the entire chain. This case provides a practical pathway and theoretical reference for Chinese automakers to achieve low-carbon transformation and sustainable development under the carbon tariff framework.

KEYWORDS

EU Carbon Tariff (CBAM); ESG; Chinese automakers; SAIC Motor; Green transformation

1 Research background and significance

1.1 Research background

As a leader in global environmental policy, the European Union has recently introduced a carbon tariff mechanism. This mechanism imposes taxes on imported goods based on their carbon emissions, aiming to push both domestic and foreign enterprises to reduce their carbon footprint and accelerate the transition to green, low-carbon models. This move not only demonstrates the EU's firm commitment to environmental protection but also has a profound impact on the global trade landscape and corporate operational methods. However, this policy presents new challenges for Chinese automakers' exports. The EU carbon tariff is scheduled to be fully implemented in 2026, with a transitional period starting on October 1, 2023. During this period, companies are required to report the carbon emissions of specific products at the end of each quarter but do not need to actually pay the "carbon tariff". This means that Chinese automobile enterprises will jointly face high "carbon tariff" costs with European importers, thereby losing their original price advantage for exports to the EU. Consequently, optimizing corporate ESG green practices is of significant importance and an urgent necessity of the times for Chinese automakers facing the difficulties posed by the carbon tariff policy.

As a leading Chinese automaker, SAIC Motor, confronting severe market challenges and profound industry changes under the EU carbon tariff background, strives to achieve high-quality carbon peaking by 2025. Its subordinate companies have formulated their respective "Dual Carbon" strategic goals. SAIC Motor's clear carbon reduction pathway demonstrates its determination and action in optimizing development within the ESG field, providing a pioneering practical example for the ESG development of Chinese automakers at large.

1.2 Research significance

This study focuses on the context of the EU Carbon Border Adjustment Mechanism (CBAM), conducting an in-depth analysis of SAIC Motor's practices, challenges, and countermeasures in optimizing ESG green performance. It holds significant theoretical value and practical importance. Theoretically, it fills a gap in the in-depth research on the impact of international mandatory environmental regulations on the operations of micro-enterprises in high-carbon export industries (such as China's automotive industry). It also explores new pathways for systematically integrating ESG concepts into green tool innovation to cope with external carbon cost pressures, providing important empirical evidence and theoretical expansion from China's transitional economy for corporate sustainable development and green theory. Practically, by analyzing the specific practices and response strategies of the leading enterprise SAIC Motor, the study aims to provide reference experience and operational guidance for the broader Chinese automotive export industry, helping them effectively manage carbon tariff costs and reshape international competitiveness. Simultaneously, the refined optimization model can offer a reference path for the entire automotive industry to explore low-carbon transformation driven by financial innovation, and ultimately provide micro-level legal basis and policy insights for the government to improve the green policy system and build mechanisms to address international carbon barriers.

2 Conceptual foundation

2.1 ESG concept

ESG (Environment, Social, Governance) is the product of the deep integration of social responsibility theory, sustainable development theory, and modern corporate governance theory ^[1]. The ESG system, based on the three core dimensions of environment, social, and governance, provides a systematic framework for promoting sustainable development. As shown in Table 1, a series of specific indicators extend from this framework. To practice the ESG concept, enterprises need to focus on improving environmental performance in their production and operations, adhere to legal and business ethics norms, actively respond to the demands of stakeholders, and continuously improve modern corporate governance structures. This concept was first proposed by the United Nations Environment Programme in 2004, integrating the three dimensions of environment, social, and governance into a systematic investment decision evaluation system. In this process, the "economic-environmental-social" balanced development concept of the triple bottom line theory, along with the resource-based view's analysis of intangible resource value creation, together constitute the theoretical core of the ESG evaluation system ^[2]. ESG ratings are richer in connotation than single indicators and are more objective relative to the multi-dimensional indicator systems constructed by enterprises themselves. From an enterprise perspective, ESG ratings help comprehensively measure a company's sustainable development capability in responding to climate change and integrating into the "Dual Carbon" goals ^[3].

Table 1 Common ESG indicators

Environment(E)	Social(S)	Governance(G)
Environmental Protection Strategy	Targeted Poverty Alleviation	Risk Control
Green Technology	Industrial Poverty Alleviation	Financial Accounting Strategy
Environmental Investment	Rural Revitalization	Compensation System
Employee Environmental Awareness	Philanthropy and Charity	Information Disclosure Risk
Energy-saving Measures	Privacy and Data Protection	Ethical Conduct
Green Procurement Policy	Employee Welfare and Health	Information Disclosure Risk
Waste Pollution & Management Policy	Product Quality and Safety	Board Independence
Compiled from publicly available sources		

2.2 EU carbon tariff

CBAM, the Carbon Border Adjustment Mechanism, also known as the carbon tariff or carbon border adjustment tax. The CBAM regulation clearly states: CBAM shoulders the important task of preventing carbon leakage ^[4]. It refers to, on the basis of implementing strict domestic climate policies, requiring imported or exported high-carbon products to pay or refund corresponding taxes or carbon allowances. The EU continues to strengthen its climate goals; however, non-EU countries generally implement relatively lenient environmental and climate policies, thereby increasing the risk of carbon leakage. Carbon leakage refers to EU companies outsourcing carbon-intensive production to regions with lax policies to avoid internal strict standards, or shifting to importing carbon-intensive products to replace domestic production. This transfer not only leads to the migration of carbon emissions outside Europe but also seriously undermines the effectiveness of climate governance in the EU and globally.

3 Impacts on Chinese automakers under the EU carbon tariff shock

3.1 Increased carbon costs lead to challenges of declining international competitiveness

From the perspective of production factors, the carbon tariff increases costs for high-carbon emission industries, including direct carbon costs and investment costs for technological transformation to meet carbon emission standards ^[5]. The automotive industry, as a high-carbon emission industry, faces restrictions on the input of production factors such as capital and technology. Compared with Europe and the United States, Chinese automakers are relatively lagging in the research, development, and application of low-carbon technologies, thus being at a disadvantage in terms of the quality and efficiency of production factors ^[6]. European and American companies are in a leading position in the field of low-carbon technology, putting pressure on the price advantage and technological innovation of Chinese products. Meanwhile, the popularization of global consumers' environmental awareness has increased market preference for low-carbon products. The carbon tariff policies implemented by Europe and the United States further strengthen this trend, suppressing the international market's willingness to purchase high-carbon emission products from China.

3.2 Stringent carbon emission restrictions pose trade barrier risks

Although Chinese automakers are actively promoting the achievement of the Dual Carbon goals, the introduction of the EU carbon tariff policy is bound to bring significant impact and stricter restrictions on the carbon emissions of China's automotive industry. Currently, only the power industry in China is included in the national carbon emission trading market; other industries have not yet reached EU standards in carbon market management and carbon emission verification. Therefore, with the gradual implementation of carbon emission policies, if the products of Chinese automakers cannot meet EU carbon emission standards, they may face additional trade barriers.

3.3 Low-carbon constraints cause green transformation bottlenecks

Reducing carbon emissions is a principle commonly recognized by the international community, including China and the EU. At this stage, carbon emission restrictions mainly rely on the binding force of government policies. The introduction of the EU carbon tariff can provide intangible market impetus for enterprises, promoting independent emission reduction and carbon reduction by enterprises, and facilitating the achievement of the Dual Carbon goals. However, the carbon tariff policy also forces Chinese automakers to accelerate the pace of green transformation, speed up the research, development, and upgrading of low-carbon technologies, bringing huge economic and technological pressures to enterprises. Companies need to invest in R&D costs, transition and upgrade to low-carbon emission production methods, introduce internationally advanced green emission reduction technologies and experience, accelerate growth, and ensure international competitiveness in markets such as the EU and the US is comparable to that of local manufacturing enterprises^[7].

4 Analysis of SAIC motor's ESG practice pathway

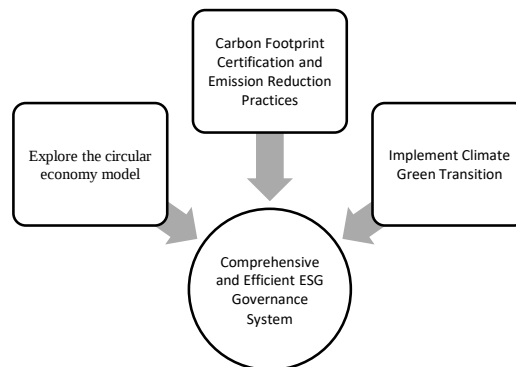


Figure 1 "1+3" Collaborative optimization carbon reduction model

4.1 Basic situation of SAIC motor's ESG

As one of the leading enterprises in the domestic automotive industry, SAIC Motor has formed a business structure led by vehicle operations, innovating around the "Carbon Peaking, Carbon Neutrality" goals in the new energy track, and actively developing components, logistics, finance, overseas investment, and other businesses^[8]. SAIC Motor has continuously carried out social responsibility report evaluation work since 2009. The report discloses the company's social responsibility philosophy, practice highlights, and annual results, effectively promoting in-depth communication and positive interaction between the company and its stakeholders, and jointly advancing the sustainable development of the company and society. Relying on deep insights into market trends and the social environment, the company continuously deepens its understanding of the connotation of social responsibility and systematically integrates related concepts into corporate operational practices, promoting the continuous deepening of responsibility management.

4.1.1 Environment (E): perfecting the environmental management system

SAIC Motor unswervingly supports the national "Carbon Neutrality, Carbon Peaking" goals, vigorously develops the new energy vehicle business, promotes green manufacturing, and reduces carbon throughout the vehicle lifecycle^[9]. It strictly follows the "Environmental Protection Law of the People's Republic of China" and local environmental management laws and regulations, and has established a group-level environmental management system based on the ISO 14001 international standard, deeply integrating environmental management into daily operations. To further improve environmental management performance, the group regularly conducts environmental protection training to

strengthen employees' environmental awareness and practical capabilities.

4.1.2 Social (S): practicing the social welfare system

As a leading large automotive enterprise group in China, SAIC Motor attaches great importance to corporate social responsibility, practices the philosophy of "giving back to society and benefiting people's livelihoods," fully utilizes its own advantages, actively carries out volunteer services, pays attention to vulnerable groups, jointly builds warm communities^[10], actively participates in social welfare undertakings, and interprets the responsibility and commitment of a corporate citizen with practical actions.

4.1.3 Governance (G): comprehensive and efficient governance system

SAIC Motor highly values the importance of corporate governance within the ESG framework, always adhering to a scientific, standardized, and efficient governance system as the core, and continuously improving the company's sustainable development level. To further enhance corporate governance and ESG performance, SAIC Motor has established specialized governance mechanisms and organizational structures to ensure that the current state of ESG governance aligns with international advanced practices.

4.2 SAIC motor's strategies to address the EU carbon tariff

4.2.1 Developing a circular economy model

Adhering to the green development concept, SAIC Motor is committed to developing a circular economy model, which not only aligns with the national Dual Carbon strategic goals but also enables efficient resource utilization to cope with the cost increase impact brought by the EU carbon tariff policy. Firstly, practicing the Extended Producer Responsibility (EPR) system, SAIC Motor actively responds to national policy requirements, deeply promotes the practice and innovation of the EPR system for automotive products, and has successfully built a complete closed-loop system covering recycling, comprehensive resource utilization, green supply chain management, and information disclosure. By leading the establishment of the "SAIC Extended Producer Responsibility Consortium," it effectively integrates resources from the upstream and downstream of the industrial chain, achieving efficient recycling and utilization of resources. Simultaneously, it actively promotes the use of recyclable packaging materials, making significant progress in this field, mainly focusing on three core directions: packaging circulation and sharing, lightweight design, and volume efficiency improvement. Furthermore, it promotes green warehousing and logistics, builds a green and low-carbon full-chain system, and ultimately enhances international competitiveness.

4.2.2 Carbon footprint certification and emission reduction practices

SAIC-GM-Wuling is committed to carrying out carbon reduction practices throughout the entire life cycle from product design to end-of-life. Its Xingguang PHEV model took the lead in passing the carbon footprint label level evaluation, winning China's first road vehicle product carbon footprint level identification certificate, with an evaluation level of Grade 1 (optimal level), continuously upgrading in carbon emission standards. Additionally, the group strictly complies with the national carbon emission allowance system. 22 enterprises in the Shanghai region fully completed the 2023 compliance surrender work, with a total annual surrender volume of 849.3 thousand tons and a 100% compliance rate.

4.2.3 Comprehensive implementation of climate green transformation

SAIC Motor is committed to the comprehensive implementation of a climate transition plan, establishing systematic strategies and measures at the production end, product end, and industrial chain end, and continuously promoting the implementation of related work. At the production end, it builds a green manufacturing system by increasing the proportion of renewable energy through self-built photovoltaic projects and purchasing green electricity; at the service end, it conducts low-carbon planning, providing automotive products with low carbon emissions while becoming a "source" promoting low-carbon original technologies for automobiles; at the industrial chain end, it practices circular economy, improves material recycling rates, and promotes the use of new energy-saving and environmentally friendly materials.

5 Conclusion and outlook

In summary, against the background of the EU Carbon Border Adjustment Mechanism (CBAM) exacerbating global

green trade barriers and posing multiple challenges such as "rising carbon costs," "trade barrier risks," and "green transformation bottlenecks" to the Chinese automotive industry, this study has conducted an in-depth analysis of SAIC Motor's ESG practices and response strategies. By constructing a "1+3" collaborative optimization model—centered on a "comprehensive and efficient ESG governance system" and systematically implementing three key pathways: developing a circular economy model, practicing carbon footprint certification for emission reduction, and comprehensive climate green transformation—SAIC Motor has effectively alleviated the pressure from the EU carbon tariff and enhanced its green competitiveness and adaptability to the international market. This model emphasizes the deep integration of ESG concepts into corporate strategy and the entire operational chain. It not only consolidates the foundation for sustainable development by perfecting environmental management, practicing social responsibility, and strengthening corporate governance but also optimizes resource utilization efficiency through the circular economy, enhances product green transparency through authoritative carbon certification, and promotes comprehensive carbon reduction through systematic climate actions covering "production-product-industrial chain," providing a highly operable reference model for Chinese automakers to navigate the challenges under the EU carbon tariff. Looking forward, the Chinese automotive industry should fully learn from SAIC's experience, accelerate the systematic construction and deep practice of ESG, transform the pressure of green transformation into momentum for innovation and upgrading, and through the systematic integration of ESG concepts and breakthroughs in low-carbon technology, can take the initiative in the global green and low-carbon wave and achieve high-quality development.

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