

Research on ESG System of Environmental and Social Governance and Green Development Strategy of Enterprises

Yawen Deng

Graduate School of Business, University Sains Malaysia, Jalan Sungai Dua, 11800 George Town, Penang, Malaysia

Abstract

In the context of the integration of global "dual carbon" goals and sustainable development concepts, the environmental and social governance (ESG) system has become a core dimension for measuring the comprehensive competitiveness of enterprises and a key institutional guarantee for driving their green transformation. This article is based on the actual situation of Chinese enterprises, focusing on the intrinsic relationship between ESG and green development, sorting out the core connotations and requirements of the two, analyzing the current situation and problems of enterprise ESG construction and green transformation, exploring the ESG driving mechanism, and proposing optimization strategies. Research has found that ESG can effectively solve the cost, technology, and cognitive challenges in corporate transformation through environmental constraints guidance, social synergy, and governance system guarantees; The practice of green development in enterprises has also improved the ESG implementation path in reverse. This article aims to provide practical references for enterprises to construct ESG governance frameworks and formulate green development strategies, as well as theoretical support for high-quality and sustainable economic development in China.

Keywords

ESG system, corporate green development, governance mechanism, strategy optimization, sustainable development.

1. Introduction

Global climate change and ecological issues have become prominent, and green and low-carbon have become an inevitable trend in world economic development. China has set clear strategic goals of peaking carbon emissions before 2030 and achieving carbon neutrality before 2060, incorporating green development into the overall economic and social situation, and promoting the transformation of enterprises from high energy consumption models to green and low-carbon. In this context, the Environmental and Social Governance (ESG) system, as a comprehensive evaluation framework that integrates environmental responsibility, social responsibility, and corporate governance, has transformed from a "soft constraint" in the international capital market to a "hard requirement" for sustainable development of enterprises.

At the international level, the EU's Corporate Sustainability Reporting Directive (CSRD) and the US SEC's climate disclosure rules have been implemented, promoting the mandatory stage of ESG information disclosure; Domestically, the Shanghai Stock Exchange and Shenzhen Stock Exchange have released ESG information disclosure guidelines, China Securities Index Corporation has launched an ESG evaluation system, and green finance policies continue to be strengthened. ESG has become a lever for enterprises to connect with the capital market and enhance brand value.

However, there are still practical problems in Chinese enterprises: some companies have shallow understanding of ESG and regard it as a compliance cost; Insufficient innovation in green technology and weak driving force for transformation; ESG information disclosure is not standardized and lacks quantitative content; The governance structure is incomplete and has not formed a closed loop of "strategy execution supervision". Based on this, this article takes "ESG system and corporate green development strategy" as the theme, clarifies the logical relationship between the two through theoretical analysis and practical analysis, analyzes the current challenges, and constructs a strategic system. It not only responds to the national "dual carbon" strategy, but also meets the needs of enterprises to enhance competitiveness, and has theoretical and practical value [1]. The research framework is as follows: elaborating on the theoretical basis, analyzing the current situation, exploring the mechanism of action, identifying challenges, proposing optimization strategies, and concluding with conclusions and prospects.

2. Theoretical basis of ESG system and green development of enterprises

The ESG system is a three-dimensional collective term for the environment (E), society (S), and governance (G), and is the core framework for measuring the sustainable development of enterprises. The environmental dimension focuses on corporate environmental protection, climate change response, and efficient resource utilization, with core indicators including carbon emissions, energy consumption intensity, and waste recycling rate; The social dimension focuses on the fulfillment of corporate responsibilities to stakeholders, covering employee rights protection, supply chain social responsibility, community contribution, and consumer rights protection; The governance dimension focuses on the scientific nature of internal management, including board structure, ESG decision-making mechanism, incentive and restraint system, and information disclosure transparency. The three are interrelated and mutually supportive, forming the institutional foundation for sustainable development of enterprises [2].

The green development of enterprises is characterized by "low consumption, low emissions, high efficiency, and high circulation", which is the core path for traditional models to transition towards sustainability. Its essence is to achieve the unity of economic, environmental, and social benefits through technological innovation, institutional optimization, and management upgrading. It not only requires enterprises to reduce negative environmental impacts, but also emphasizes the cultivation of new growth points through green innovation, achieving a virtuous cycle of "ecological benefits → economic benefits → social benefits".

On a theoretical level, stakeholder theory is the core basis for both: companies need to respond to the demands of diverse stakeholders, ESG systems build communication bridges by regulating the three-dimensional behavior of companies, and green development is a direct manifestation of companies responding to environmental demands and fulfilling ecological responsibilities. The theory of sustainable development defines common goals: ESG provides a framework for sustainable development of enterprises, and green development is the core practice path of this concept at the enterprise level, with the ultimate goal of achieving "intra generational equity and intergenerational equity" and promoting coordinated development of the economy, society, and ecological environment.

In addition, institutional economics theory points out that ESG, as a combination of formal and informal institutions, can reduce the transaction costs of green transformation for enterprises through external policy constraints and internal governance optimization, promote the internalization of environmental externalities, and help green development shift from "passive compliance" to "active transformation". The ESG system is the institutional guarantee for the green development of enterprises, and green development is the core practice carrier of the ESG system. The two complement and promote each other in a coordinated manner.

3. Analysis of the Current Situation of ESG System Construction and Green Development in Enterprises

The construction of ESG system in Chinese enterprises presents a trend of "policy driven, leading by the top, and gradually spreading". At the policy level, the National Development and Reform Commission, the Ministry of Ecology and Environment, and others are promoting the improvement of ESG information disclosure and governance mechanisms. In January 2023, the Shanghai and Shenzhen Stock Exchanges revised their guidelines from "voluntary" to "semi mandatory", requiring key industry enterprises to disclose quantitative indicators. At the enterprise level, central and state-owned enterprises are the main force, and the State owned Assets Supervision and Administration Commission of the State Council has included ESG in its assessment, requiring the establishment of a management system by 2025 and regular disclosure [3]; As of 2024, the ESG disclosure rate of A-share listed companies exceeds 50%, with nearly 80% in key industries. Private enterprises and small and medium-sized enterprises started late but have a good momentum. Leading companies such as Huawei and Tencent have established ESG governance structures and incorporated green development into their core strategies; Under the guidance of policies and industrial chains, small and medium-sized enterprises are promoting energy-saving renovations, compliance management, and evaluation systems such as the China Securities Index and Business Road Integration Green, providing directions for improvement.

In terms of green development, Chinese enterprises have achieved significant results through technological transformation and product innovation. In the energy sector, traditional thermal power enterprises are promoting energy conservation and emission reduction, while photovoltaic and wind power enterprises are expanding. By 2023, the proportion of new energy generation installed capacity will exceed 50%; In the industrial sector, high energy consuming industries such as steel and cement promote clean production, resulting in a decrease in energy consumption per unit product; In the consumer sector, the supply and proportion of green products have increased. At the same time, there are structural problems: on the main body, large enterprises transform quickly based on their financial and technological advantages, while small and medium-sized enterprises have weak motivation due to cost and technological limitations; In the industry, high energy consuming industries face great transformation pressure, and some enterprises have less investment in environmental protection. High tech industries need to deepen the integration of the two; On a regional level, enterprises in the eastern region have strong green awareness and remarkable achievements, while the progress in the central and western regions is slow due to the impact of industrial structure and policy implementation.

Although most companies recognize the correlation between ESG and green development, the depth of integration is insufficient. Some companies equate ESG environmental dimensions with green development, ignoring the support of social and governance dimensions, and green development lacks long-term sustainability; Although a few companies have set their strategies, they still have "two skins" in their execution and have not included ESG indicators in their assessments, lacking supervision; In addition, there is a lack of sufficient support for green development content in corporate ESG disclosure, and the quality of disclosure is not high, making it difficult to meet the needs of relevant parties. Overall, the integration of the two is in its early stages and has not yet formed a positive interactive pattern of synergy among the three.

4. The Mechanism of ESG System Driving Green Development of Enterprises

In terms of environmental dimension, ESG drives corporate green transformation through a dual wheel approach of "external policy constraints+internal goal guidance". At the external level, tightening environmental policies and expanding carbon markets in various countries have raised the compliance costs of high energy consumption and high emissions. China's "double random, one open" regulation and carbon market promotion have forced enterprises to reduce emissions and consumption; The EU CBAM requires high carbon imported products to pay carbon tariffs and promotes technological transformation of steel and cement export enterprises. At the internal level, ESG requires companies to set carbon peak, energy conservation and emission reduction targets, and incorporate them into their medium - and long-term strategies. Through the ISO14001 system, carbon footprint accounting, and clean production, enterprises decompose environmental goals into various stages and implement a closed-loop management of "target execution assessment" to promote the shift of production mode from "end of pipe treatment" to "source prevention and control" to reduce pollution and increase efficiency.

In terms of social dimension, ESG integrates stakeholder demands and provides collaborative support for green development. At the supply chain level, enterprises review suppliers' environmental responsibilities, and large enterprises promote green supply chains based on their industrial chain advantages, forming a "core driven, upstream and downstream collaborative" approach. For example, Apple requires suppliers to use renewable energy to drive global supplier transformation. At the market level, the increase in consumer green awareness makes green products more competitive, and ESG excellent enterprises are recognized; Investors are paying attention to the improvement and intensification of green finance, and high rated enterprises enjoy low-cost financing. China's green credit has continued to grow at double digits for many years, providing funds for enterprise green innovation and energy-saving transformation. In addition, employees tend to choose companies with good environmental responsibility, and the community demands to reduce environmental impact, which together constitute the driving force for development.

In terms of governance dimensions, ESG has improved its internal management structure and established institutional guarantees for green development. In terms of decision-making, companies establish ESG committees to formulate green strategies, approve major investments, avoid strategic shortsightedness, and ensure long-term transformation investment. In terms of incentives, companies will include ESG indicators in their assessments and link them to salary and promotion. For example, some central enterprises' carbon emission reduction indicators account for more than 10% of the management's assessment weight, which will stimulate enthusiasm [4]. In terms of supervision, strengthen internal and external supervision, regularly disclose green information, and be subject to stakeholder supervision to ensure that the strategy does not deviate. At the same time, the governance dimension emphasizes green innovation, establishing research and development funds, industry university research cooperation, improving technology, and providing core support for development.

5. ESG related challenges faced by green development of enterprises

5.1. Imperfect policy and standard system

The ESG policy and standard system in China is still being improved, and there is a problem of "multiple supervision and inconsistent standards". The Shanghai and Shenzhen Stock Exchanges, State owned Assets Supervision and Administration Commission, and other guidelines have differences in disclosure indicators and formats, such as differences in absolute

carbon emissions and unit output emissions requirements, which increase the adaptation costs for enterprises. The imbalance between policy compulsion and incentive, limited incentive coverage, and difficulty in motivating enterprises to take initiative. There are significant regional differences in policy implementation, with insufficient supervision in some areas, which poses a risk of "bad money driving out good money".

5.2. Bottlenecks in Green Technology Innovation

Green technology is the core of green development, and Chinese enterprises are facing the challenge of "insufficient core technology and low R&D investment". The core patents in the fields of new energy materials and CCUS are scarce, and the technology relies on imports. The core equipment and processes of CCUS are mostly monopolized by Europe and America. Green technology has a long research and development cycle, high risks, limited funds for small and medium-sized enterprises to bear costs, and insufficient attention from large enterprises. Insufficient collaboration between industry, academia and research, difficulty in transforming scientific research achievements, and disconnect between technological innovation and market demand.

5.3. Cost pressure and income imbalance

The cost pressure of green transformation for enterprises is significant, and there is an imbalance between short-term investment and returns. Green technological transformation, environmental protection equipment, and ESG construction require more funds and have a long return cycle. For example, the investment in energy-saving transformation for small and medium-sized enterprises needs 3-5 years to be recovered, and some enterprises lack motivation. The premium in the green product market has not yet been formed, and consumers' awareness of green products has increased, but price remains key. The acceptance of high prices for green products is limited. The carbon pricing mechanism is not mature, making it difficult to convert emission reduction benefits into direct benefits, and some enterprises lack long-term motivation.

5.4. Inadequate Information Disclosure and Evaluation System

The low quality of ESG information disclosure is a common problem, with some companies disclosing only in form, lacking quantitative indicators and substance, and incomplete disclosure of data such as carbon emissions and energy consumption; A few companies selectively disclose negative information [5]. The imperfect third-party evaluation system affects credibility, and there are many domestic evaluation agencies with different methods and indicators, resulting in significant differences in ratings for the same enterprise. Some institutions lack professionalism and independence, lack industry data, and the evaluation results lack scientific rigor.

6. Optimization strategies for green development of enterprises based on ESG

Enterprises should establish an integrated ESG governance structure of "strategy organization execution assessment", incorporating ESG concepts into core strategies, setting goals such as carbon peak, energy conservation and emission reduction, and decomposing them into annual plans, which can refer to the SBTi guarantee target science; Establish an ESG committee of the board of directors, ESG department of the management, and business liaison personnel, clarify responsibilities to form a collaborative pattern, incorporate ESG indicators into performance evaluation, increase the weight of indicators such as carbon reduction and green innovation, link them with salary promotion, and establish incentive mechanisms to stimulate full participation [6].

Green technology innovation should be regarded as the core competitiveness, and research and development investment should be increased through multiple channels: large enterprises should focus on key technology research and development such as new energy and carbon capture, while small and medium-sized enterprises should deeply cultivate differentiated innovation in segmented fields; Improve the mechanism of industry university research collaboration, jointly build platforms with universities, participate in industry alliances, and accelerate the transformation of achievements; Strengthen the cultivation and introduction of green talents, carry out employee training, introduce high-end talents, establish innovation incentive funds, and reward high-quality achievements.

Promote the collaborative green transformation of the supply chain through ESG, with core enterprises developing ESG admission standards, incorporating environmental compliance and carbon reduction into supplier assessments, regularly rating and prioritizing cooperation with outstanding suppliers; Provide technical guidance and financing support for small and medium-sized suppliers, organize training, and connect with green credit; Build a green supply chain information platform to share real-time supplier ESG performance, carbon emissions, and other information, jointly carry out carbon footprint accounting, optimize processes, and reduce emissions throughout the entire chain.

Improve the ESG information disclosure mechanism in accordance with the principles of "truthfulness, accuracy, completeness, and timeliness", develop a list based on mainstream domestic and international standards, and focus on disclosing quantitative indicators such as carbon emission trends and energy consumption structures; In the form of "annual report+interim briefing", ESG columns are set up on the official website and official account, professional institutions are introduced for authentication, and the authentication results are disclosed for supervision.

Proactively connect policies and market resources, apply for green loans, bonds, tax incentives, and fiscal subsidies; Disclose green strategies and ESG performance to investors to attract investment, and enhance product market share by promoting and conveying green value; Join ESG industry organizations, participate in standard setting, promote the formation of a unified evaluation system, and create a fair environment for green transformation.

7. Conclusion

The Environmental and Social Governance (ESG) system is a key driving force for corporate green transformation and has a profound intrinsic connection with green development. This article explores the theoretical foundations, current characteristics, mechanisms, challenges, and optimization strategies of both through theoretical analysis and practical analysis. The core conclusions are as follows:

ESG and corporate green development are supported by stakeholder theory and sustainable development theory, with environmental constraints guiding, social synergies empowering, and governance institutional guarantees, forming a triple driving mechanism. At present, the ESG construction and green development of Chinese enterprises have shown initial results, with central and state-owned enterprises leading and policy support increasing. However, there are still problems such as inconsistent policy standards, insufficient green technology innovation, cost-benefit imbalance, and low quality of information disclosure. The degree of integration between the two needs to be improved.

Five strategies are needed to promote green and high-quality development: building an integrated ESG governance structure of "strategy organization execution assessment"; Increase investment in green technology innovation and break through the bottleneck of core technologies; Build a supply chain collaboration system and form a green pattern throughout

the entire chain; Standardize ESG information disclosure, enhance transparency and credibility; Strive for policy and market resource support to reduce transformation costs.

The integration of the two requires multi-party collaboration among enterprises, governments, markets, and society: enterprises integrate ESG into their operations and drive development with green innovation; The government improves policy standards, strengthens incentives and supervision; Market guides resources to cluster towards green areas; Enhance green awareness in society and create a positive atmosphere.

Future research can focus on the practical adaptability of specific industries and scale enterprises, and explore the empowering role of ESG digital management in conjunction with digital transformation. With the improvement of ESG system and the popularization of green concepts, enterprises will achieve the unity of economic, environmental, and social values, and make greater contributions to China's "dual carbon" goals and sustainable development.

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