

Study on the Motivations and Effects of Corporate Green Bond Issuance from an ESG Perspective

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Abstract: Green finance plays a pivotal role as a vital force supporting corporate sustainable development. Currently, many environmentally friendly projects still face challenges in securing funding, and green bonds serve as one of the financial instruments to support such initiatives. To better analyze the effects of corporate green bond issuance, this paper introduces the concept of ESG. The ESG framework provides a fundamental structure for enterprises pursuing green and low-carbon development. By comprehensively evaluating corporate environmental, social responsibility, and governance performance, this study conducts an in-depth examination and discussion of these aspects. As a financial instrument, green bonds channel funds toward environmentally friendly and energy-saving projects, which should positively influence corporate ESG performance. This paper analyzes the motivations and economic consequences of Guangxi Guiguan Electric Power's green bond issuance from an ESG perspective. Findings reveal that Guiguan Electric Power demonstrated favorable market effects, financial effects, and environmental effects following its green bond issuance. Finally, recommendations are proposed in three areas: responding to national policies, improving information disclosure, and strengthening supervision. These suggestions hold significance for promoting the healthy development of the green bond market.

1. Introduction

1.1. Research Background

Environmental issues have emerged as the most pressing concern of the 21st century, necessitating a shift toward low-carbon, green, and sustainable economic development models. China maintains a steadfast focus on global climate change, with the concept that "lucid waters and lush mountains are invaluable assets" deeply ingrained in public consciousness. The report of the 20th CPC National Congress emphasized accelerating the green transformation of development patterns, fostering green and low-carbon industries, and advancing carbon peaking and carbon neutrality. Green bonds, with their dual characteristics of "green" and "financial," help broaden corporate financing channels, guide green investments, and propel the green transformation and upgrading of traditional industries. In December 2023, the China Securities Regulatory Commission and the State-owned Assets Supervision and Administration Commission jointly issued the "Notice

on Supporting Central Enterprises in Issuing Green Bonds." This initiative aims to enhance the capital market's capacity to serve green and low-carbon development, support central enterprises in raising funds through green bonds, and synergistically advance carbon reduction, pollution control, ecological expansion, and economic growth. It also seeks to drive the green and low-carbon development of the private sector, promoting a comprehensive green transformation of the economy and society. At present, China's green bond development is moving toward normalization and scaling up, characterized by transparent fund usage and strict environmental benefit oversight. By subscribing to green bonds, investors not only gain financial returns but also contribute to advancing environmental protection projects. With the continuous rise in social environmental awareness, the green bond market is accelerating its expansion, attracting increasing attention from government departments, financial institutions, and investors.

1.2. Research Significance

This paper analyzes the effects of corporate green bond issuance from an ESG perspective. ESG aligns closely with China's green economy and green development philosophy, fitting the national context of simultaneously addressing environmental governance and economic growth. Moreover, it provides a relatively quantitative evaluation system for corporate green development, complementing the broader environmental backdrop of green bond issuance. By applying ESG theory to analyze the effects of green bond issuance across environmental, social, and corporate governance dimensions, this study examines corporate ESG performance in green bond issuance to present a more comprehensive and integrated assessment of its impacts. This paper explores the effects of green bond issuance by Guangxi Guiguan Electric Power Co., Ltd. (hereinafter referred to as Guiguan Electric Power) from both theoretical and practical perspectives. It identifies the advantages of issuance and areas for further improvement, thereby providing references and suggestions for refining the steps required in China's corporate green bond issuance process and supplementing the information disclosure system. This contributes to enriching and perfecting the construction of China's green bond issuance system.

2. Literature Review

2.1. Green Bonds

Existing literature on green bonds can be categorized into two dimensions: issuance drivers and issuance effects. Regarding issuance drivers, current studies primarily suggest that green bond issuance enhances corporate reputation, stimulates active participation from external investors, and facilitates healthy corporate development under policy guidance. Lin Boqiang and Su Tong (2022) classify the drivers of green bond development into three aspects: macroeconomic fundamentals, financial system institutions, and the environment for green and low-carbon transition[1]. Zhang Siju (2022), using Tsinghua Environment as a case study, found that national policy guidance positively influenced the company's green financing decisions [2]. Chen Fenggong and Zhang Yihao (2023) argue that improved green governance performance and reduced financing constraints constitute the internal and external drivers through which green bonds motivate enterprises to pursue market incentives [3]. Wu Shinuo et al. (2022) further elucidate how green bond financing effectively drives corporate technological innovation, ultimately achieving growth in corporate value [4]. Zhang Xueying et al. (2022) contend that issuing green bonds significantly enhances corporate innovation capabilities, primarily due to green bonds' unique role in alleviating financing constraints [5]. Wu Yuhui and Tian Yanan (2022) highlight in their research how green bond issuance establishes a positive social image and reputation for enterprises, supporting their long-

term development [6].

2.2. ESG

Research on ESG performance has primarily focused on its impact on corporate investment efficiency, corporate value, and corporate innovation. Gao, Jieying et al. (2021) argue that corporate ESG performance can enhance investment efficiency by reducing agency costs and alleviating financing constraints [7]. Xi, Longsheng and Wang, Yan (2022) contend that under the “investor sentiment effect,” ESG disclosure mitigates stock price crash risks by stabilizing investor sentiment [8]. Wang Linlin et al. (2022) found that superior corporate ESG performance correlates with higher firm value [9]. Xu Sheng et al. (2024) contend that corporate ESG enhances investor sentiment and information transparency, thereby boosting stock liquidity. The increased stock liquidity resulting from strong ESG performance significantly elevates corporate value and innovation [10]. Guo Mingjie et al. (2023) observe a negative correlation between ESG scores and financing costs among China's heavily polluting enterprises [11].

2.3. Literature Review

Through reviewing the literature, this study examines domestic and international research on the effects of green bonds. Regarding market development, corporate issuance of green bonds is driven by multiple factors including enhanced reputation, government support, and reduced financing costs. Existing literature indicates that green bonds help alleviate financing constraints, increase corporate value, and strengthen innovation capabilities. Research on ESG primarily focuses on the relationship between ESG performance and corporate value, concluding that there is a significant correlation between the two. This paper adopts an ESG perspective to explore the causes and effects of Guiguan Electric Power's green bond issuance, identifying lessons to be learned and existing issues, and proposing targeted recommendations.

3. Introduction to Guiguan Power's Green Bond Case Study

3.1. Introduction to Guiguan Power

Guangxi Guiguan Electric Power Co., Ltd. (hereinafter referred to as "Guiguan Electric Power"), a subsidiary and listed holding company of China Datang Corporation Limited, serves as a benchmark enterprise for low-carbon transformation in the power sector and a pioneer in green finance. The company focuses on the production, operation, investment, and construction of clean energy sources such as hydropower, wind power, and photovoltaic power. By the end of 2024, Guiguan Electric Power had total assets of RMB 50.2 billion and an installed power generation capacity of 14.173 million kilowatts, with clean energy accounting for 90.6% of its total capacity. It generates over 35 billion kilowatt-hours of green electricity annually. This business structure provides a solid foundation for Guiguan Electric Power to issue green bonds.

3.2. Overview of "24 Guiguan Electric MTN001"

Guiguan Power's inaugural 2024 green medium-term note innovatively integrates three themes: "carbon neutrality, rural revitalization, and revolutionary base areas." This multi-theme approach establishes a dedicated fund management system to ensure capital is precisely directed toward committed sectors while enabling separate accounting and reporting of the environmental and social benefits generated by these funds. This not only fulfills key requirements for green bond

certification but also demonstrates the bond's comprehensive benefits to investors and regulators. The details of "24 Guiguan Electric MTN001" are shown in Table 1.

Table 1: Overview of "24 Guiguan Electric MTN001"

Clause Type	Specific Content
Bond Name	Guangxi Guiguan Electric Power Co., Ltd. 2024 First Green Medium-Term Note (Carbon Neutrality, Rural Revitalization, Revolutionary Old Areas)
Securities Abbreviation	24 Guiguan Electric MTN001
Security Code	102483972
Interest Commencement Date	September 5, 2024
Maturity Date	September 5, 2027
Coupon Rate	2.26%
Issue Size	1.4 billion
Green Rating Agency	Dagong Low-Carbon Technology (Beijing) Co., Ltd.

4. Analysis of Guiguan Electric Power's Motivation for Issuing Green Bonds

4.1. Responding to National Green Policies

Table 2: Green Bond-Related Documents

Date	Policy	Issuing Authority
September 2015	Overall Plan for Reforming the Ecological Civilization System	The Central Committee of the CPC and the State Council
December 2015	Catalogue of Green Bond Supported Projects (2015 Edition), Guidelines for Green Bond Issuance	People's Bank of China, National Development and Reform Commission
2016	Guiding Opinions on Establishing a Green Financial System	People's Bank of China and Six Other Ministries
2016–2017	Green Bond Pilot Program and Expansion	Shanghai and Shenzhen Stock Exchanges, National Association of Financial Market Institutional Investors
February 2019	Green Industry Guidance Catalog (2019 Edition)	National Development and Reform Commission and Six Other Ministries
April 2021	Catalogue of Green Bond Supported Projects (2021 Edition)	People's Bank of China, National Development and Reform Commission, China Securities Regulatory Commission
July 2022	China Green Bond Principles	Green Bond Standards Committee
2024	Indicator System for Environmental Benefit Disclosure of Green Bonds (JR/T 0322-2024)	People's Bank of China
August 2025	Catalogue of Green Finance Supported Projects (2025 Edition)	People's Bank of China, China Banking and Insurance Regulatory Commission, China Securities Regulatory Commission

As shown in Table 2. China's green bond policy began in 2014, with early guidelines issued separately by the People's Bank of China and the National Development and Reform Commission.

In 2016, seven ministries jointly promoted the development of a green finance system. The 2021 Catalog of Green Bond Supported Projects unified domestic standards, excluded fossil fuel projects, and aligned with international practices. The 2022 China Green Bond Principles clarified four core elements including proceeds management. Industry standards for environmental benefit disclosure were introduced in 2024, while 2025 regulations further unified green bond and green loan standards. The "dual labeling" system precisely channels funds and dynamically adjusts supported sectors. This policy framework now comprehensively covers issuance, management, and disclosure, robustly supporting green industry development.

4.2. Alleviating Financing Constraints and Reducing Financing Costs

By issuing green bonds, enterprises can secure longer-term and more stable funding support, thereby alleviating financing pressures. Scientific planning of investment and financing strategies enables matching the maturity structures of assets and liabilities, reducing risks arising from maturity mismatches and enhancing capital utilization efficiency. To establish a strong ESG profile, companies must advance their efforts across multiple dimensions—including business strategy, social responsibility, and governance structures. Relying solely on internal accumulation often proves insufficient to meet comprehensive requirements. During external financing, information asymmetry and other factors make it difficult to fully identify risks, leading creditors to demand higher risk compensation. By issuing green bonds, companies can ease financing constraints, lower funding costs, and strengthen their motivation to pursue ESG practices.

4.3. Enhancing Corporate Image to Attract Investors

Reputation theory posits that corporate reputation stems from accumulated trust. Companies demonstrating proactive social responsibility generate positive impacts, fostering a favorable image and earning societal recognition. Such reputation signifies strong competitiveness, attracting investor endorsement and increased capital allocation—ultimately yielding greater economic and social benefits.

As ESG investment principles gain traction, an increasing number of investors are scrutinizing corporate performance across environmental, social, and governance dimensions. By issuing China's first composite-theme green bond and directing its proceeds toward green projects, Guiguan Electric Power significantly elevated its market image and brand value. This move sent a strong signal to the market about the company's proactive implementation of the "dual carbon" strategy and commitment to social responsibility. Consequently, it bolstered the goodwill and trust of investors, regulators, and local governments, enhancing the company's market reputation and competitiveness.

5. Analysis of Financing Effects from Guiguan Electric Power's Green Bond Issuance

5.1. Market Recognition and Investor Response

In terms of market recognition, Guiguan Power, as a listed company under the Datang Group, holds an AAA issuer credit rating and possesses excellent credit qualifications. With clean energy accounting for 90.6% of its operations and a high proportion of green business activities, the company meets green bond certification standards. Innovative bond design features, such as carbon asset-linked clauses, enhanced market appeal by offering investors opportunities to participate in carbon asset revenue sharing.

Regarding investor structure, green bonds typically attract specific investor types, including ESG investment funds, green financial institutions, and institutional investors with socially responsible

investment requirements. Their participation reduces issuance costs while providing a stable investor base for the bonds.

5.2. Financial Benefit Analysis

The most direct economic benefit of the "24 Guiguan Electric MTN001" bond is the significant reduction in Guiguan Electric's financing costs. Its 2.26% coupon rate represents the lowest level for subordinated perpetual medium-term notes in Guangxi. This achievement stems from the bond's precise alignment with multiple national strategic priorities, attracting substantial capital seeking sustainable investment opportunities. As a perpetual note with a 3+N-year term, "24 Guiguan Electric MTN001" may be accounted for as equity rather than debt. This helps optimize the company's balance sheet structure, reduce leverage ratios, enhance refinancing capacity, and strengthen risk resilience. Simultaneously, it provides the company with long-term stable funding, aligning with the extended investment payback periods characteristic of green energy projects.

5.3. Environmental and Social Benefit Assessment

All proceeds from the "24 Guiguan Power MTN001" bond will be allocated to the operation of new energy projects, including hydropower and wind power. This is projected to achieve annual carbon dioxide emissions reductions of 236,400 metric tons and save 144,800 metric tons of standard coal. These quantifiable environmental benefits not only contribute to ecological conservation but also lay a solid foundation for the company's potential future participation in carbon markets or compliance with stricter environmental policies, thereby creating potential green economic returns. By the end of 2024, Guiguan Power's clean energy share had reached 90.6%. This bond financing aligns closely with its core business and development strategy, providing financial support for the sustained operation and expansion of its green energy operations. This further solidifies Guiguan Power's position as a benchmark in the power industry's low-carbon transition.

Regarding social benefits, the bond requires at least 30% of the raised funds to be invested in the Longtan Hydropower Station project located in the revolutionary base area of the Left and Right Rivers. It is committed to advancing rural revitalization through five dimensions: education, livelihood, industry, employment, and State-building. This model of integrating green finance with support for revolutionary base areas has earned Guiguan Electric Power a favorable social reputation in the project location, established more stable relationships with local governments and communities, and fostered a supportive external environment for the company's sustainable development.

6. Research Findings and Recommendations

6.1. Conclusion

The issuance of "24 Guiguan Electric MTN001" represents a successful financing initiative for Guiguan Electric that harmonizes economic, environmental, and social benefits. It not only secured long-term capital at a lower cost and optimized the company's financial structure but also significantly enhanced its market image and brand value while reinforcing its green development strategy, injecting green momentum into the enterprise's high-quality development. The innovative model of this bond also provides valuable insights for other enterprises seeking to leverage green financial instruments to achieve multidimensional objectives.

6.2. Recommendations

First, Enterprises should conduct in-depth analysis of the alignment between their operations and national strategies. Following Guiguan Electric Power's approach, they can combine environmental and social benefits to design innovative bond themes such as "Green + Rural Revitalization," "Green + Belt and Road," or "Biodiversity Conservation + Community Co-construction," thereby enhancing appeal to investors.

Second, Standardize green bond disclosure requirements. According to the Green Bond Principles and the Catalogue of Green Finance Support Projects (2025 Edition), quantifiable disclosure should be prioritized through strict pre calculation and certification of environmental benefits. Maintain continuous and transparent disclosure throughout the entire lifecycle of the bond. This significantly enhances credibility, reduces greenwashing suspicions, and secures lower financing costs.

Finally, regulatory authorities should standardize criteria and strengthen market oversight. This requires the continued implementation of the "Catalogue of Green Finance Support Projects (2025 Edition)", the standardization of green bonds and green loans, and the establishment of a dynamic adjustment mechanism. Strengthen the disclosure of environmental benefit measurement and fund utilization. At the same time, strengthen post issuance supervision to ensure that the raised funds are truly used for their intended purposes and that the environmental benefits are verifiable.

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