

Research on the Impact of Green Bond Issuance on Corporate Financial Performance and Market Valuation: A Case Study of Longyuan Power

Jiayan Huang

Investment Economics, School of Economics and Management, Xiamen University of Technology, Xiamen, Fujian, 361024, China

ABSTRACT

In the context of the acceleration of global climate governance and the implementation of our country's "dual carbon" goal, green bonds have become the core tool connecting the capital market and the green industry. This paper takes Longyuan Power as the research object, and systematically explores the impact and mechanism of green bond issuance on corporate financial performance and market valuation by using case analysis and event research methods. The study found that the core motivations for Longyuan Power's issuance of green bonds include optimizing financing costs, supporting new energy strategic transformation and responding to policies, and enhancing green reputation. From the perspective of financial performance, green bonds significantly improve short-term cash flow and gross profit margin, but in the long term, attention needs to be paid to the debt repayment pressure brought about by the interest-bearing asset-liability ratio. At the market valuation level, the issuance announcement triggers a positive reaction to short-term stock prices and obtains a certain green premium in the long term, but the risk of subsidies receivable and ESG "greenwashing" may weaken valuation stability. In terms of impact mechanism, green bonds form financing cost advantages through policy support and investor preferences, optimize capital structure through debt term matching, and strengthen corporate reputation through green signal transmission. This study can provide reference for the formulation of green financing strategies for new energy enterprises, investor decision-making, and regulatory policy optimization, and help the deep coupling of green finance and the real economy.

KEYWORDS

Green bonds; Financial performance; Market valuation; Longyuan Power; ESG

1 Introduction

1.1 Research background

The global climate governance process is accelerating and our country's "dual carbon" goal is deepening, and the green financial system has become the core support for the low-carbon transformation of the economy. As a key tool of green finance, green bonds have become an important financing channel for enterprises to invest in green projects such as wind power and photovoltaics with the characteristics of "special funds for special funds". According to statistics, in 2024, 477 new green bonds will be issued in our country, with a scale of 681.432 billion yuan, and 100 overseas issued by Chinese entities with a scale of 24.419 billion US dollars, and the market size will continue to expand. At the same time, at the policy level, measures such as improving the standard system, standardizing evaluation and certification, and optimizing information disclosure have promoted the high-quality development of the green bond market, and "doing a good job in green finance" has become an important issue for sustainable development.

As a leading enterprise in the field of new energy power generation in China, Longyuan Power has taken the lead in exploring green bond financing since 2017, forming a diversified financing system covering green corporate bonds, medium-term notes and asset-backed notes. However, there are still gaps in the current research on green bonds: first, the transmission mechanism of corporate financial performance at the micro level has not yet formed a systematic conclusion; Second, the dynamic response of market valuation to green financing lacks micro case support, and it is urgent to carry out targeted research in combination with typical enterprises.

1.2 Research significance

1.2.1 Theoretical level

Most of the existing literature focuses on the policy incentives and macro environmental benefits of green bonds, and there are gaps in the research on the impact mechanism on the financial behavior of micro enterprises. By deconstructing the correlation path between Longyuan Power's green bond issuance and capital structure optimization, cash flow management, and risk resilience, this paper can supplement the mechanism of green financial instruments on corporate financial fundamentals. At the same time, analyzing market valuation reactions based on the event research method is helpful to improve the theory of enterprise value assessment under the ESG investment framework and fill the research gap in the dynamic relationship between "green financing and corporate valuation".

1.2.2 Practical level

For enterprises, the research conclusions can reveal the actual effect of green bonds in reducing financing costs and

improving financial resilience, and provide a reference for new energy enterprises to optimize their green financing strategies. For investors, analyzing the correlation between green bond issuance and corporate market value fluctuations can help build an investment decision-making model that takes into account the "environmental responsibility-return on return". For regulatory authorities, the research results can provide an empirical basis for improving information disclosure mechanisms, strengthening market pricing efficiency, promoting the deep coupling of green finance and the real economy, and helping industrial upgrading and capital allocation optimization under the "dual carbon" goal.

2 Review of domestic and foreign research literature

2.1 Research background of green bonds at home and abroad

Green bonds have become the core financing method for sustainable development of enterprises to support low-carbon projects through targeted fundraising.^[1] The global green bond market is expanding rapidly, and our country has become the second largest green bond market in the world. With the advancement of the "dual carbon" goal, the role of green bonds in optimizing financing structure, reducing costs, and enhancing reputation has attracted much attention.

2.2 Domestic research perspective

2.2.1 Research on the causes of green bond issuance

(1) Internal motivation

Deng Chong took the Three Gorges Group as an example, He pointed out that the reasons for the green bond issuance include alleviating financing pressure, reducing costs and accelerating business development^[2]; Liu Siyao Then use river steel The Group emphasizes the endogenous demand for green transformation as an example^[3]; Liao Kunyuan believes that green bonds can optimize the debt term structure and alleviate the mismatch of "borrowing short and investing long"^[4].

(2) External drivers

He Huifen pointed out that policy subsidies under the "dual carbon" goal directly incentivize issuance^[5]; Wei Zhaoli supplemented the pressure of industry transformation, such as steel enterprises facing emission reduction constraints to force green bond financing^[6]; Guo Huanyao proposed "Reduce costs—Enhance your reputation—Risk sharing" triple path mechanism, It marks the progression of motivation research from a single factor to a system framework^[7].

2.2.2 The impact of green bonds on financial performance

Most scholars confirm this the positive effect of green bonds on financial performance. Song Xingying found that green bonds not only reduce financing costs and optimize debt structure, but also improve the growth level and solvency of enterprises, and have a low risk of credit default^[8]; Wang Xinrui uses the entropy weight method and gray correlation analysis, It is pointed out that green bonds have a significant impact on the long-term solvency of enterprises, which can optimize the debt structure and improve profitability^[9]; Sheng Jiaqi Through case studies, It further confirms that the issuance of green bonds can effectively enhance corporate value^[10].

2.2.3 Market effect and environmental and social benefits of green bonds

In terms of market effect, Liu Xiaolin took Yadi as an example, Using the event research method, it is found that the announcement of green bond issuance will bring a significant positive market response^[11]; Feng Renhua's research on Longyuan Power pointed out that green bonds can enhance the long-term market valuation of enterprises by optimizing the capital structure and enhancing environmental benefits^[12]; Zhang Jintao and Li Xun emphasized that complete environmental benefit information disclosure can reduce information asymmetry and enhance investor confidence^[13].

In terms of environmental and social benefits, Based on an ESG perspective, Li Jiawei found that BYD reduces carbon emissions and creates jobs through green bonds^[14]; Lu A Hui pointed out that green bond fundraising projects can alleviate local employment pressure, reduce the burden on the power grid, increase local tax revenue, and achieve energy conservation and emission reduction^[15].

2.3 International research perspective

2.3.1 Green bonds and green innovation

Qiankun Wang et al. found through heterogeneity analysis that The impact of green bond issuance on green innovation of peer companies is particularly significant in capital-intensive enterprises and high-concentration industries^[16]; Changsong et al. from the perspective of signals It is pointed out that the issuance of green bonds improves the level of green technology innovation of enterprises by conveying environmental protection commitments and easing financing constraints^[17].

2.3.2 Financial markets and climate risks

Samuel Asante Gyamerah et al. The interaction between green bonds and financial markets is affected by macroeconomic factors^[18]; Kamel Si Mohammed et al. found that despite economic policy uncertainty (EPU) and climate policy fluctuations, Green bonds still have significant potential in addressing climate risks^[19].

2.4 Research commentary

Existing studies have confirmed the positive role of green bonds in financing costs, financial performance, and market effects, but there are still shortcomings: first, most of them are macro-empirical or single-dimensional analysis, and there is a lack of systematic case research on the "motivation-effect-mechanism" of enterprises; Second, there is little research on the new energy power generation industry, which is difficult to reflect the impact of industry characteristics (such as large investment scale and long return cycle) on the effect of green bonds. This paper takes Longyuan Power as a case study to make up for the above research gaps.

3 Argumentative analysis

3.1 Analysis of the reasons for the issuance of green bonds of Longyuan Power

3.1.1 Issuance

Longyuan Power has issued green bonds since 2017, and as of May 2025, a total of 17 bonds have been issued, covering green corporate bonds, medium-term notes, asset-backed notes and other types, with an actual total issuance of more than 20 billion yuan, a term ranging from 0 to 7 years, and a gradual decrease in coupon rates from 4.9% to 1.89%, reflecting the trend of financing cost optimization.

Table 1 Issuance of major green bonds of Longyuan Power

Release time	abbreviation	Term (years)	Actual total issuance (100 million yuan)	Coupon rate (%)	type
2017/5/15	G17 Longyuan 1	5	20	4.9	Green corporate bonds
2017/7/31	G17 Longyuan 2	7	30	4.78	Green corporate bonds
2018/4/20	G18 Longyuan 1	7	30	4.83	Green corporate bonds
2018/11/12	18 Longyuan Power ABN001	3	10.1	4.95	Green asset-backed notes
2019/9/24	G18 Longyuan 2	3	30	3.96	Green corporate bonds
2020/1/15	19 Longyuan Power GN001	270 days	5	2.6	Green ultra-short-term financing bonds
2020/1/15	G Longyuan 1A	2.35	7.13	4.95	Green asset-backed notes
2020/8/27	G Longyuan Y1	3+N	20	4.1	Green corporate bonds
2020/10/26	G Longyuan Y3	1+N	10	3.59	Green corporate bonds
2020/10/26	G Longyuan Y4	2+N	10	3.9	Green corporate bonds
2020/12/14	G Longyuan Y5	1+N	10	3.7	Green corporate bonds
2021/3/30	G Longyuan 2A	2.1	10.3	4	Green asset-backed notes
2021/8/2	21Longyuan Power GN001 (carbon neutral bond)	3	7.91	3.05	Green medium-term notes
2021/12/1	21 Longyuan Power GN002	3	29.9	2.7	Green medium-term notes
2022/5/11	22 Longyuan Power GN001	3	15	2.65	Green medium-term notes
2024/11/27	24 Longyuan Power GN001	3	25	2	Green medium-term notes
2025/5/14	25 Longyuan Power GN001	5	15	1.89	Green medium-term notes

3.1.2 Core motivations

(1) Financing cost optimization

The wind power industry is capital-intensive and requires long-term low-cost funds. The coupon rate of Longyuan Power's green bonds is significantly lower than that of ordinary bonds of the same grade, such as the interest rate of carbon neutral bonds in 2021 of 3.05%, which is lower than the interest rate of ordinary medium-term notes in the same period; In 2025, in the face of the pressure of a year-on-year increase of 19.17% in interest-bearing liabilities, green bonds will effectively alleviate the burden of interest expenses.

(2) Strategic transformation support

The company plans to significantly increase the installed capacity of renewable energy in 2025, with a net increase of 2053.54 megawatts of new energy holding capacity in the first half of 2025, including 986.95 megawatts of new wind

power holding capacity and 1096.59 megawatts of photovoltaic holding capacity.

(3) Policy and reputation driven

At the policy level, our country has promoted market development by unifying green bond standards and improving information disclosure, with a cumulative scale of 4.16 trillion yuan of domestic green bonds by the end of 2024. At the reputation level, the issuance of green bonds conveys a signal of sustainable development, with the company's green power transactions reaching 4.14 billion kWh in the first half of 2025, an increase of 41.67% year-on-year, 4.232 million green certificates were traded, an increase of 81.46% year-on-year, and the green brand image was significantly enhanced.

3.2 The impact of green bond issuance on Longyuan Power's financial performance

3.2.1 Changes in profitability

The company's profitability improved significantly after the issuance of green bonds: the gross profit margin in 2025 was 40.87%, a year-on-year increase of 11.56 percentage points, and the net profit margin was 25.58%. The year-on-year increase of 5.38 percentage points was mainly due to two aspects: one was the reduction of financial expenses by green bonds, and the other was the commissioning of wind power and photovoltaic projects, and the revenue of the photovoltaic segment increased by 65.6% year-on-year. However, it should be noted that the disposal of Huoelectronics Company in 2024 will result in a net profit of 4.004 billion yuan in the first half of 2025, a year-on-year decrease of 14%; net profit attributable to the parent company was 3.374 billion yuan, a year-on-year decrease of 13%, and if the impact of asset disposal is excluded, the profitability of the renewable energy business will increase more significantly.

3.2.2 Changes in solvency

On the one hand, green bonds optimized the debt structure, with bonds payable increasing by 82.4% year-on-year in the first half of 2025, accounting for 4.63 percentage points of total assets, and long-term borrowings decreasing by 4.29% year-on-year the proportion decreased by 2.6 percentage points, reducing dependence on traditional bank loans; on the other hand, the short-term debt repayment pressure was prominent, with interest-bearing liabilities reaching 142.349 billion yuan, interest-bearing asset-liability ratio of 52.74%, monetary funds of 2.218 billion yuan, a year-on-year decrease of 33.74%, and monetary funds/current liabilities of only 4.3%. The current ratio and quick ratio are both 0.78, and cash flow management needs to be strengthened.

3.2.3 Comparative analysis of the same industry

Compared with Goldwind Technology and Three Gorges Energy, Longyuan Power's green bond issuance scale and frequency are leading in the industry, due to its positioning as the "world's largest wind power operator" - the scale of the project is larger, and the demand for long-term low-cost funds is more urgent. In terms of financial performance, the gross profit margin of 40.87% is higher than that of peers, reflecting the advantages of operational efficiency and green bond cost; However, the interest-bearing asset-liability ratio of 52.74% is higher than the average of peers, and debt risk control needs to be paid attention to.

3.3 The impact of green bond issuance on the valuation of Longyuan Power market

3.3.1 Stock price market reaction

The announcement of the green bond issuance triggered a positive stock price reaction, and investors recognized the company's green strategy: in early 2025, UBS upgraded Longyuan Power's rating from "neutral" to "buy", with a target price of HK\$9.90, listed as the preferred stock in the field of utilities and renewable energy, and the core logic includes the quality of new energy projects supported by green bonds and the boost of profitability from low-cost financing.

3.3.2 Long-term valuation changes

The long-term valuation is in a reasonable range and has a green premium: the price-earnings ratio is 18.43 times and the price-to-book ratio is 1.86 times in March 2025, and the price-earnings ratio is 23.96 times, the price-to-book ratio is 1.86 times, and the price-to-sales ratio is 4.15 times, and the valuation level is the center of the industry, reflecting the market's recognition of its green transformation. However, it is necessary to pay attention to the subsidy receivable of 38 billion yuan, accounting for 33% of the current market value, and its recovery progress will directly affect the stability of valuation.

3.4 Longyuan Power's environmental and social performance and influence mechanism

3.4.1 Environmental and social benefits

In terms of environmental benefits, green bond fundraising projects have achieved significant emission reduction effects, with 4.232 million green certificate transactions in the first half of 2025, an increase of 81.46% year-on-year, and millions of tons of carbon reduction for wind power and photovoltaic projects per year. The growth of green electricity

trading scale promotes the low-carbon transformation of electricity consumption enterprises and strengthens the participation of environmental rights and interests in the market.

In terms of social benefits, the construction and operation of wind power and photovoltaic projects have created a large number of jobs and driven the development of new energy industry chains, such as equipment manufacturing, operation and maintenance services; At the same time, it reduces the operating cost of local power grids, increases local tax revenues, and realizes the synergistic benefits of "economy and society".

3.4.2 Analysis of influence mechanism

In terms of financing cost advantages, policy support, such as interest discounts and guarantees; ESG investor preferences, such as increased demand for green bonds; Risk rating advantages, such as the strong sustainability of green bond projects, jointly form a "green premium" and reduce financing costs.

In terms of capital structure optimization, the maturity of green bonds matches the return cycle of wind power projects, such as the 5-year green bond corresponds to the 20-year operation period of wind power projects, alleviating the risk of "short-term debt and long-term investment"; At the same time, we will broaden financing channels and improve our ability to resist risks.

In terms of corporate reputation effect, green bond issuance sends green signals and enhances stakeholder recognition - the investor base is expanded, such as the increase in ESG fund holdings; policy support for access, such as priority approval of green projects; market opportunities are expanding, such as the growth of green electricity trading; The attractiveness of talents has increased, such as the addition of environmentally friendly talents, forming a positive cycle of "reputation-value".

3.5 Heterogeneity analysis

3.5.1 ESG "greenwashing" risk

Although Longyuan Power has no "greenwashing" behavior, the industry needs to be vigilant against this risk. "Greenwashing" refers to enterprises exaggerating environmental benefits to obtain improper benefits, and the current regulatory authorities regulate the market through "cross-inspection by third-party evaluation agencies" and "market-oriented evaluation", such as the Green Bond Standards Committee issued cross-inspection rules. Longyuan Power needs to continue to strengthen information disclosure to ensure that the use of green bond funds and environmental benefit data are true and transparent.

3.5.2 Peer performance differences

There is corporate heterogeneity in the performance of green bonds. In terms of scale, the scale of Longyuan Power projects is large, and the scale effect of green bonds is more significant; In terms of business structure, its pure renewable energy business is similar to "new energy + traditional energy", such as Three Gorges Energy, which is more focused on the use of green bond funds and has more prominent environmental benefits; In terms of financing strategy, its "multi-variety, high-frequency" green bond issuance experience makes it easier to obtain low-cost funds than its peers. This shows that enterprises need to formulate green bond strategies based on their own characteristics and cannot copy experience. Each enterprise needs to formulate appropriate green financing strategies according to its own characteristics and needs to maximize the benefits of green bond issuance.

4 Conclusion

This paper takes Longyuan Power as a case study to explore the impact of green bond issuance on corporate financial performance and market valuation, and draws the following conclusions:

The causes of development are diverse. Longyuan Power's issuance of green bonds is the result of the joint action of "financing cost optimization, strategic transformation support, and policy reputation driven", reflecting the green financing needs of new energy enterprises under the "dual carbon" goal.

Financial performance has improved significantly in the short term, and risks need to be controlled in the long term. Green bonds significantly improve short-term cash flow and gross profit margin, and optimize the debt structure, but in the long run, it is necessary to pay attention to the high interest-bearing asset-liability ratio of 52.74% and short-term debt repayment pressure, and it is necessary to balance benefits and risks through financing scale control and cash flow management.

Market valuation has received a positive response and green premium, green bond issuance has triggered a short-term stock price rise, and long-term valuation is within a reasonable range of the industry and has received a green premium, but the recovery of subsidies receivable and the risk of "greenwashing" may weaken the stability of valuation.

The impact mechanism is characterized by "three paths", and green bonds enhance enterprise value through the three paths of "financing cost advantage, capital structure optimization, and corporate reputation effect", providing empirical

support for the mechanism of green financial instruments at the micro level.

4.1 Policy optimization suggestions

Based on the analysis of Longyuan Power's green bond issuance cases, the following policy optimization suggestions are put forward to further promote the development of the green bond market:

The first is to improve the green bond standard system. Based on the "Green and Low-carbon Transition Industry Guidance Catalogue (2024 Edition)", the catalogue of green bond support projects will be revised ^[20], refine industry standards.

The second is to strengthen the supervision of information disclosure. Strengthen the supervision of information disclosure during the duration of green bonds, and improve information transparency and comparability. Research and explore the relevant mechanisms for green bond issuers' green annual reports, and announce to the public the green development, green production and operation, green investment, etc., to provide investors and stakeholders with more accurate and effective information.

The third is to optimize incentive policies. Provide tax incentives and discount support to reduce the financing cost of issuers and increase their enthusiasm for issuance. At the same time, all kinds of investors are encouraged to invest in green bonds and cultivate the investor group of green bond markets ^[21].

Fourth, strengthen international cooperation. Actively promote the international integration of green bond standards, promote the application of international consensus standards such as the Common Taxonomy of Sustainable Finance, and promote cross-border green capital flows. Strengthen cooperation with international financial organizations to attract international investors to participate in China's green bond market ^[22].

4.2 Enterprise practice suggestions

For new energy enterprises such as Longyuan Power, in order to make better use of green bond tools, the following practical suggestions are proposed:

The first is to formulate a green financing strategy. Incorporate green bonds into the overall financing strategy of enterprises, and clarify the positioning and role of green bonds in the financing structure of enterprises. According to project needs and market conditions, reasonably arrange the issuance plan and scale of green bonds to maximize the financing benefits of green bonds.

The second is to strengthen the management of fund use. Strictly use funds in accordance with the use of funds raised by green bonds to ensure that the funds are specifically used for green projects ^[23]. Establish and improve internal management systems and supervision mechanisms, regularly evaluate the use of funds and the realization of environmental benefits, and improve the efficiency of fund use.

The third is to improve information disclosure. In accordance with the "Green Bond Duration Information Disclosure Guidelines" and other regulations, disclose relevant information about green bonds in a timely, accurate and complete manner, including the use of raised funds, project progress and environmental benefits. Proactively disclose information that exceeds compliance requirements to improve information transparency and market trust.

Fourth, actively participate in market construction. Actively participate in the construction of the green bond market and the formulation of standards, and share practical experience and professional knowledge ^[24]. Cooperate with other market participants to jointly promote the development and innovation of the green bond market and provide a better financing environment for enterprises' green transformation.

Through the above policies and practices, the green bond market will be more standardized, transparent and efficient, provide better financial support for enterprises' green transformation, and help achieve the "dual carbon" goal ^[25].

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