

# Research on the Impact of ESG Disclosure on Green Bond Issuance in New Energy from the Perspective of Carbon peak

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## ABSTRACT

With the goal of carbon peaking, low-carbon green development has become the main theme of economic development. In this context, while pursuing economic benefits, it is also necessary to take into account environmental benefits. Industrial development policies and matching funding strategies related to low-carbon green are called for, and sustainable economic strategies will make the industry move forward steadily. On the basis of foreign scholars' research on green bonds and industrial ESG, this project is based on the new energy industry, organizing and researching the information disclosed by its ESG, exploring in depth the influence of this information on the issuance of green bonds by the new energy industry, and exploring whether there is any positivity in this influence. The ESG information disclosed by the new energy industry can, on the one hand, help investors better understand ESG governance and the green bond market in the new energy industry, and guide them to make rational investments; on the other hand, it can help the government better formulate policies to improve the perfection of the green bond-related standards, including the evaluation system and certification system, as well as the quality of the industry's information disclosure.

## KEYWORDS

Carbon Peak; New Energy Industry; ESG Information.

## 1. INTRODUCTION

In the more than four decades since our country adopted the policy of reform and opening up, our economic level has witnessed a period of rapid take-off. While making remarkable achievements, China has also begun to face increasingly serious environmental problems, such as serious water pollution, land desertification and declining air quality. At present, China has ushered in the initial stage of economic restructuring and high-quality development transformation, and the promotion and development of green finance is of great significance in supporting China's green industry and sustainable development. China has begun to establish its own green financial system, and more and more social capital is being invested in green projects.

## 2. OVERVIEW OF ESG DISCLOSURE ON GREEN BOND ISSUANCE IN NEW ENERGY FROM THE PERSPECTIVE OF

## 3. CARBON PEAK

The core of carbon peak development is based on improving energy utilization efficiency, guaranteeing national energy security and economic development as the bottom line, promoting a

smooth transition to low-carbon energy transformation, advancing carbon peaking actions in a steady and orderly manner and in a gradual manner, and ensuring safe carbon reduction. For example, the new energy industry need ESG information influence on Green Bond Issuance.

### **3.1. ESG Information**

It is an investment concept and enterprise evaluation standard that focuses on the environmental and social governance performance of enterprises rather than financial performance, based on ESG evaluation, investors can assess their investment behavior and the enterprise's contribution to the promotion of sustainable economic development and the fulfillment of social responsibility by observing the ESG performance of enterprises.

### **3.2. Green Bond**

Green bonds are bond instruments in which the proceeds are used exclusively to finance or refinance green projects that meet prescribed conditions. Compared with ordinary bonds, green bonds are special in four main aspects: the use of the funds raised by the bonds, the evaluation and selection procedures for green projects, the tracking and management of the funds raised and the requirement to issue relevant annual reports.

### **3.3. Carbon peak**

Carbon peak refers to the annual carbon dioxide emissions of a region or industry to reach the highest value in history, and then go through a platform period to enter a continuous decline in the process, is the historical inflection point of carbon dioxide emissions from increasing to decreasing, marking the realization of the decoupling of carbon emissions and economic development, and the goal of reaching the peak, including the peak year and the peak value.

## **4. CURRENT STATUS AND DEVELOPMENT OF RESEARCH AT HOME AND ABROAD**

In the ESG performance most scholars study how ESG affects enterprise value impact, for example: scholars of Sichuan Textile University School of Economics Wang Chenxin published "ESG rating impact on enterprise value research - based on the new energy automobile industry chain perspective", the new energy automobile industry has a significant impact. There are no references on new energy ESG in the knowledge network system, and foreign research on this aspect is shallow and needs to be increased.

The social responsibility construction carried out by China's central enterprises on a large scale over a long period of time is highly consistent with the connotation of ESG, and the work of energy conservation and emission reduction, scientific and technological innovation, and rural revitalization coincides with the concept of ESG. For example, the National Energy Group's ultra-low emissions, thermal power DCS and other ten major key technology development is at the international leading level; during the "13th Five-Year Plan" period, China Datang invested 1.448 billion yuan in helping impoverished areas. In recent years, China's ESG has been further emphasized by all parties. 2021, China's Securities Regulatory Commission issued the "Guidelines on Investor Relationship Management for Listed Companies (Exposure Draft)", which requires listed companies to communicate with investors about the company's ESG information; and the Ministry of Ecology and Environment issued the "Reform Plan for the System of Disclosure of Environmental Information in accordance with the Law", which makes it clear that the system of mandatory disclosure of environmental information will basically take shape by 2025.

China's green bonds are proposed for a relatively short period of time, belonging to the early stage. The international green bond standard is a global standard that does not take into account China's particularities in energy structure, social development stage and policy implementation, resulting in different standards for defining green projects at home and abroad. The international standard excludes the use of fossil energy (especially coal) and any project that may extend its life cycle from the green category, while the domestic standard still includes some coal and other fossil energy-related projects, taking into account China's energy endowment of "rich in coal, poor in oil, and low in gas"; the international standard focuses more on the alternative ways to cope with and adapt to climate change and directly reduce travel demand; and the international standard is a global standard that does not take into account the special characteristics of China's energy structure, social development stage and policy implementation method. The international standard focuses more on alternative ways to cope with and adapt to climate change and directly reduce travel demand, while the domestic standard pays more attention to pollution prevention and control of exhaust gas, wastewater and waste, and environmentally friendly travel itself; the international standard is not mandatory for the selection of technical standards for green projects, while the domestic standard has a strong orientation and practicability in order to provide specific guidance for project selection.

## **5. RESEARCH SIGNIFICANCE**

### **5.1. Theoretical significance**

The policies and initiatives introduced by the state have given rise to green bonds, which essentially belong to a direct financing means, and can provide the required funds for the relevant industries that need to implement green projects but have funding gaps. As a kind of bond, it also has the advantage of relatively low issuance cost, which can reduce the pressure and burden of the industry.

The call for industry ESG disclosure is growing, but the ability of industries to improve their ESG capabilities to bring about the development of green bond issuance is a measure of their willingness to take the initiative in adjusting their sustainability strategies as their intrinsic motivation.

If good industrial ESG performance can bring the industry market value, reputation, social influence and the reduction of financing costs, then the industry will take the initiative to choose to improve its ESG governance level and sustainable development ability, and even set up the corresponding functional parts.

### **5.2. Relevance**

Through combing the process of China's green bond development and the number of new energy industry ESG reports released and industry ESG performance, this project studies the impact of industry ESG performance on green bond issuance, which can not only form an accurate understanding of the current status quo, but also explore the correlation and the impact paths of the research object after empirical research, as well as provide a basis for the disclosure of information and sustainable development of the industry. It can also provide the basis for the information disclosure and sustainable development of the industry.

## **6. RESEARCH CONTENT AND INNOVATIONS**

### **6.1. The current situation of China's green bonds and the ESG performance of new energy industry**

With the promulgation of the Guiding Opinions on Building a Green Financial System issued in 2016, which gives enterprises the guarantee of issuing green bonds, this project mainly focuses on the

course of China's green bonds as well as the reality of their performance, and is carried out through the collation of China's green bond issuance data as well as global issuance volume. After systematic sorting and data analysis of green bonds, the current situation of green bonds in China is summarized and analyzed accordingly. Collect the data of ESG revelation in new energy industry and study its inner performance.

## **6.2. Research on the impact of ESG performance of new energy industry on green bond issuance**

Green bonds in the bond market of new energy industry are selected as the research object, and the ESG performance of enterprises is quantitatively analyzed by referring to the quantitative indexes in the annual reports of representative enterprises as well as CSR reports, and the ESG scores of each stock in the WIND database - FTSE Russell ESG Index. Data and statistical methods are used to analyze how the correlation between green bond financing costs and corporate ESG performance is, and the following hypothesis 1 is proposed: the overall ESG performance of the new energy industry and the issuance of green bonds have a positive impact on each other. The hypothesis 1 is verified in all aspects and judged to be correct or incorrect.

## **6.3. Behavioral impact of corporate ESG representation on green bonds**

Randomly select representative new energy companies, choose the appropriate data model, and conduct model analysis on them. Study the behavioral path of corporate ESG representation on green bonds, and according to the obtained behavioral path, put forward suggestions for corporate development and opinions on government management, so as to expand the development prospects of new energy companies on green bonds.

## **6.4. Innovations**

This project combines new energy with green bonds on the basis of Carbon Dashboard, which is a green project carried out by enterprises through financing, which is environmentally friendly and coincides with the purpose of the new energy industry, and combines the two that have some connection. From the research perspective, this project selects the ESG performance of the new energy industry; secondly, from the research tool, the labeling and certification of green bonds is introduced as a dummy variable into the test of the mediating effect of corporate ESG performance and green bond behavior to explore the extent to which the corporate ESG performance influences it.

# **7. PROBLEMS IN THE STUDY**

## **7.1. Green bond issuance in the new energy industry**

Green issues have been recognized as a more important issue at present, and in-depth research can enable enterprises in the new energy industry to make better decisions on green bond issuance, help investors better understand ESG governance and green bond market in the new energy industry, and guide them to make rational investment; help the government to better formulate policies to improve the standards related to green bonds, including the evaluation system, certification system, etc., and the quality of information disclosure in the industry. and the quality of industrial information disclosure.

## **7.2. Suggesting Incentives for Green Bond Issuance**

Based on the conclusions drawn, better suggestions are made for the government, such as strengthening the construction of the whole-process supervision system and promoting the

improvement of the third-party certification standards for green bonds, which is conducive to guaranteeing the authenticity of the issuance information, project operation, and the use of the funds, as well as monitoring and tracking of the different aspects of the process. This will help the green securities industry to go on in a sustainable and stable way and attract more investors.

## **8. RESEARCH METHODOLOGY**

The section firstly describes and analyzes the object of the study, i.e. ESG index of listed companies and the cost of green debt financing, and explains how the quantitative screening of these two data is carried out. In addition, after determining the information of the variables to be studied, the control variables are selected based on the related literature and the reasons for their selection are briefly explained. After that, descriptive statistics and correlation analysis of the selected variables were conducted by stata software, and regression analysis of the two hypotheses and the corresponding models made in this chapter were conducted.

The two hypotheses and corresponding models made in this chapter were analyzed by regression. From the regression results, it can be seen that there is a negative correlation between the overall ESG performance of enterprises, the ESG performance of state-owned enterprises and the ESG performance of non-state-owned enterprises and the cost of green debt financing, that is to say, if enterprises make efforts to improve the level of their ESG governance, it will reduce the cost of green debt financing to a certain extent. In addition, for the relationship between different enterprise nature and the cost of green bond financing, empirical evidence shows that the cost of issuing green bonds for state-owned enterprises is lower than that of non-state-owned enterprises.

## **9. RELEVANT RECOMMENDATIONS**

### **9.1. Government Recommendations**

#### **9.1.1. Establish a unified ESG information disclosure system**

In terms of ESG information disclosure in the domestic A-share market, the quality of ESG report disclosure varies greatly. The quality of ESG report disclosure varies greatly due to the large differences in the contents of ESG reports and the inconsistency in the caliber of the data make it difficult for the government to control and supervise the non-financial performance of enterprises, especially for enterprises with high emissions, high pollution and high energy consumption, the environmental data of such enterprises becomes very important. However, the standard of measurement of this data has not yet been standardized, and the caliber of the data is of poor reference significance. For most investors, the lack of an ESG disclosure system makes ESG reports less utilized, making it impossible to quickly obtain the target information they want from the reports, and it is difficult to compare data between companies. A unified ESG disclosure system can not only provide guidelines and norms for enterprises in their operations, further standardize the operation of the domestic green financial market, but also promote the green and sustainable development of China.

#### **9.1.2. Promote the Improvement of Third-Party Certification Standards for Green Bonds**

Currently, the main certification bodies of green bonds in China are mainly audit and credit rating companies, such as Ernst & Young, China Chengxin, China Credit Information Service (CCS), and China Green Bond Certification Center.

The main certification bodies for green bonds in China are mainly auditing and credit rating companies, such as Ernst & Young, China Chengxin, China Energy Conservation and so on, and there are differences in the certification methods and rules. It is still difficult to make a horizontal comparison between green bonds that have also been certified. In addition, the scope of work of certification organizations is small and does not include continuous monitoring and tracking.

Therefore, the establishment of a perfect third-party certification system for green bonds and a unified evaluation system will help ensure the authenticity of issuance information, project operation and use of funds, as well as the monitoring and tracking of different aspects.

## **9.2. Enterprise Recommendations**

### **9.2.1. Build and improve ESG management structure and enhance ESG governance level**

Since the emergence of the concept of social responsibility and the development of the ESG concept, enterprises have continuously deepened the meaning and significance of ESG in their actions. meaning and significance of ESG. To date, ESG management concepts have evolved into one of the means of risk prevention and avoidance in the process of enterprise operation and management. Since ESG levels are more difficult to present in a short period of time than corporate financial information, the ESG governance level of an enterprise has gradually become an indicator of its long-term operational capability. From the current development trend, more and more enterprises have set up ESG departments in their corporate structure to proactively improve their management ability; at the same time, the development of electronic systems has been utilized to help improve the ESG governance ability of enterprises. ESG information disclosure, as the last link and presentation method of ESG management, will naturally improve the quality of its report after perfecting the level of ESG management.

### **9.2.2. Proactively Increase Green Bond Certification and Third-Party Forensic Services for ESG Reports**

In terms of the current development of green bonds in China, the number of green bonds that are not certified at the early stage of issuance still exists on a certain scale. There is no way to ensure that the flow of funds and the operation of green bonds that are not certified are invested in green projects, and this unknown situation will exacerbate the information asymmetry between issuers and investors. By inviting a qualified third-party certification body to certify the project, companies wishing to issue green bonds can enhance the credibility of the funds being used to develop green products, as well as increase the transparency of non-financial information, which can attract investors to invest in the project. In terms of ESG report disclosure, enterprises issuing ESG reports can also hire relevant organizations to do non-financial certification of the upcoming reports to ensure that the information contained in the reports is true and credible. Whether it is green bond certification or ESG report authentication, it is a means for enterprises to take the initiative to disclose information to reduce information asymmetry. This behavior can send a credibility signal to investors and reduce the cost and pressure of corporate fundraising to a certain extent.

## **9.3. Investor Recommendations**

Investors should maintain a rational and cautious attitude towards both the content of corporate ESG disclosure and the investment of green bonds.

For investors, they should maintain a rational and cautious attitude towards both the content of corporate ESG information disclosure and investment in green bonds. There are problems with the scope of corporate ESG disclosure, the truthfulness and comparability of the information, and the limited availability of data on green bonds may also limit decision-making. In addition, as all types of development in the field of green finance are not yet fully mature and standards are not uniform, much of the information cannot be compared and analyzed, and it is difficult to provide useful information for investment. Especially now that the terms green development, carbon neutrality, and carbon peaks appear in high-frequency forms in the online media, excessive attention to the field within a short period of time can interfere with investors' investment judgment and rational decision-making. In addition, possible "green-washing" by companies can also interfere with investors'

judgment and rational decision-making. Therefore, investors need to take a rational attitude towards green investment and make their own rational judgment on related financial products.

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