

# The Problems and Countermeasures of Green Finance Assisting the Development of New Energy Industry

Yan Chu<sup>1, a</sup>, Jiali Wang<sup>1</sup>, Zejiong Zhou<sup>2, \*</sup>

<sup>1</sup> School of Finance, Anhui University of Finance and Economics, Bengbu, Anhui, China

<sup>2</sup> School of Economics, Anhui University of Finance and Economics, Bengbu, Anhui, China

<sup>a</sup>980874829@qq.com, <sup>\*</sup>aczzj123456@163.com

---

## Abstract

In recent years, the demand for financial support in the development of China's new energy industry has become increasingly strong, and green finance is urgently needed to assist the development of the new energy industry. This article first analyzes the current development status and main problems of China's new energy industry. Secondly, the current situation and main problems of China's green finance development were analyzed. Thirdly, the problems in China's green finance support for the development of the new energy industry were analyzed. Finally, propose countermeasures and suggestions on how green finance can assist the development of the new energy industry.

## Keywords

Green Finance; New Energy Industry; Investment and Financing Models; Technological Innovation.

---

## 1. Introduction

With the relaxation of epidemic policies, China's macroeconomic situation is gradually warming up, and the energy economy is showing a positive trend. The new energy industry is about to usher in new development. In this context, the demand for financial support for the development of the new energy industry is becoming increasingly strong, and green finance is urgently needed to assist the development of the new energy industry. In the initial stage of the green finance market, there are still many problems in the development of the industry. It is necessary to further improve and consolidate from innovative product types, establish the unified standards, and other aspects, solve financing difficulties, and promote the continuous development and growth of new energy related enterprises.

## 2. Overview of the New Energy Industry

### 2.1 Development Status of New Energy Industry

In March 2022, the National Development and Reform Commission and the National Energy Administration issued the "14th Five Year Plan for Modern Energy System", providing an overall blueprint and action plan for accelerating the construction of a modern energy system and promoting high-quality energy development during the "14th Five Year Plan" period. China's rapid development in the field of new energy has attracted the attention of the world by seizing a large market share.

In order to achieve the 14th Five Year Plan and the 2035 long-term goal outline, China will maintain a large-scale development of wind power, photovoltaic and other new energy sources with an average annual output of over 100 million kilowatts, in order to continuously and rapidly promote the clean and low-carbon development of the energy supply side. As a typical cyclical growth stock, the growth

of the new energy industry has been fully demonstrated in the past three years. The installed capacity of the photovoltaic industry has reached a new level, and the penetration rate of new energy vehicles has also reached a new height.

The new energy industry conforms to the development trend of the times, conforms to the direction of green economy development, has broad market prospects, huge development space, and has now become China's advantageous industry internationally. But the development of new energy is not limited to competition, it is more about cooperative development. On the basis of ensuring stable independent supply, China has been active in global division of labor, and estimated to engage in upstream and downstream industry chain cooperation, which has promoted the development of China's and even the world's new energy industry.

In the first three quarters of 2022, China's new energy installed capacity increased by 74.46 million kilowatts. Among them, wind power increased by 19.24 million kilowatts, photovoltaic power increased by 52.6 million kilowatts, and biomass power increased by 2.62 million kilowatts, accounting for 13.9%, 16.8%, 45.8%, and 2.3% of the country's newly installed capacity, respectively. As of the end of September 2022, the installed capacity of new energy power generation in China has reached 740 million kilowatts. Among them, the installed capacity of wind power is 348 million kilowatts, photovoltaic power generation is 358 million kilowatts, and biomass power generation is 40.6 million kilowatts. Overall, the installed scale of new energy continues to rise, but the proportion of power generation in the wind and solar sectors with larger investments is still relatively low.

According to Document 958 of the National Development and Reform Commission, clean energy projects include wind power, photovoltaic power generation, hydroelectric power generation, natural gas power generation, biomass power generation, nuclear power, etc. The first natural gas power generation project, Shenzhen Energy REIT, was launched in 2022. Among the remaining clean energy assets, photovoltaic power generation, wind power, and hydropower assets have developed rapidly in recent years, accounting for a rapid increase in the proportion of China's electricity energy structure, which is of great economic and social significance.

According to data from the China Electricity Council, as of the end of November 2022, the national installed capacity for power generation was 2.511 billion kilowatts, with renewable energy generation represented by hydropower, wind power, and solar power generating 1.133 billion kilowatts, accounting for 45.13% of the total installed capacity. Renewable energy has become an important force in the power system. According to the National Energy Administration's "14th Five Year Plan for Modern Energy System" and "14th Five Year Plan for Renewable Energy Development", China will basically establish a modern energy system by 2035. Based on the target of 25% non fossil energy consumption and 1.2 billion kilowatts of wind and solar power installed capacity by 2030, renewable energy will become the main power source.

## **2.2 Main Issues Faced By the Development of the New Energy Industry**

### **2.2.1. Lack of Orderliness and Integrity**

The prospects for new energy are good, and various regions are competing for development, but they are all local independent development without overall unified planning. This has led to problems such as repetitive and disorderly construction, presenting a complex situation in the entire new energy industry chain.

### **2.2.2. Lack of Technological Support for Research and Development**

The new energy industry has just started and is in its early stages of development, inevitably lacking a large number of talents. However, due to the weak research and development capabilities of enterprises and the lack of financial and technical support, it ultimately leads to a lack of both talent and technological support, resulting in slow development of the industry and hindering its participation in market competition.

### 2.2.3. New Energy Competition Towards Internationalization

In recent years, due to the scarcity of resources, more and more countries have begun to shift their goals towards the new energy industry and attach importance to its development and utilization. This has accelerated the development process of the new energy industry on a global scale, and competition between countries has become more intense. But this is a good thing for the development of the new energy industry, as countries around the world are competing to develop their own new energy industry, providing broader development space for the industry.

### 2.2.4. Low Support from Venture Capital Institutions for the New Energy Industry

Due to factors such as rapid technological updates, information asymmetry, insufficient capital sources, and exit barriers, many venture capital institutions often reconsider when choosing new energy industry projects for investment, resulting in low investment support for new energy projects. Even though many venture capitalists focus on the new energy industry, investment institutions themselves still hold a wait-and-see attitude and are unable to effectively support more new energy industries. With the development of the market, some new energy vehicle companies have encountered new problems in terms of "expanding" and "strengthening", such as expanding overseas business volume or even setting up factories overseas, and conducting horizontal or vertical mergers and acquisitions in the industrial chain.

### 2.2.5. The Development of the Solar Photovoltaic Industry has Entered a Low Period

Since last year, there have been bottlenecks in the development of China's solar photovoltaic industry, with prices of related raw materials such as silicon materials, battery cells, and battery modules plummeting. Moreover, many projects are unable to continue production due to financial issues. After a considerable number of enterprises are completed, there is a lack of market demand and they are unable to continue production.

### 2.2.6. The Contradiction of Consumption is Becoming Increasingly Prominent

With the weakening of national subsidies and support for new energy policies, and the intensification of market-oriented bidding competition for new energy power generation projects, the industry's profit margin is constantly being squeezed, and the development of the new energy industry is facing obvious difficulties. At the same time, the problem of gradually decreasing usage time and efficiency is exposed during the use of new energy, and new energy power generation is gradually entering the era of parity or even low prices. How to gradually solve the obvious consumption contradiction in the process of developing new energy has become a problem worth considering.

## 3. Overview of Green Finance Development

### 3.1 Current Situation of Green Finance Development

With the continuous development and promotion of "dual carbon", the level of green finance is also gradually improving. In the report of the 20th National Congress of the Communist Party of China, green development remains a major theme. When proposing the essentials for China's future modernization construction and green transformation, it is required to take the path of green development, promote the greening of the economy, and transform into an environmentally friendly economy. Green finance is one of the important sectors in the green development of the economy, promoting the financial system to embark on the path of green economy, assisting in optimizing and reforming the industrial structure of green finance, and pushing green finance to a new stage of higher quality development. In addition, the development of green finance cannot be separated from various policies under the background of "dual carbon". Although green finance has already entered the right track, there are still problems with the implementation of many policies, which cannot achieve the good effect of promoting "dual carbon". The integration of finance and green still needs to be reconciled.

### 3.1.1. Comprehensive Optimization of Top-level Design for Green Finance

The top-level design is the guideline and guiding principle for green financial activities. The "Carbon Financial Products" released by the China Securities Regulatory Commission provide normative guidelines for the orderly development of green finance, which is a basic requirement that green financial products and markets need to meet. The Guidelines for Green Finance in Banking and Insurance Industry issued by the CBRC emphasized the important role of banks in the development of green finance, and encouraged bancassurance institutions to integrate green finance into banking business. In July, the Association of Interbank Market Dealers, as the director unit, led the Green bond Standards Committee to issue the "China's Green bond Principles", marking the formal establishment of the Green bond standard initially unified with international standards.

### 3.1.2. Banks Assist the Real Economy in Transforming Towards Green and Low Carbon

As an important role in the financial market, banks are fully committed to promoting the economic development of green finance and adding various green finance businesses. Banks have launched various green finance products to expand the coverage of green finance, while also providing green finance services to penetrate various aspects. Firstly, carbon emission reduction support tools and special re loans to support clean and efficient utilization of coal have achieved significant results. Secondly, Chongqing, as the only municipality directly under the central government in the green gold reform pilot zone, has joined the team of green finance development. Thirdly, the environmental information disclosure system is gradually improving.

### 3.1.3. The Green Financial Market System is Gradually Becoming Multi-level

The green finance market in China includes multi-level green finance products and market systems such as green loans, green bonds, green insurance, green funds, green trusts, and carbon finance products. Last year, the banking industry continued to support the green and low-carbon transformation of the real economy. As of the end of the second quarter of this year, the balance of domestic and foreign currency green loans was 19.55 trillion yuan, a year-on-year increase of 40.4%, 29.6 percentage points higher than the growth rate of various loans.

## 3.2 Problems in the Development of Green Finance

### 3.2.1. Green Finance Standards Not Standardized

There is no single issuing department for green finance standards in China, so there is no relatively unified standard. There are certain differences in the standards issued by relevant departments such as the People's Bank of China, the China Banking and Insurance Regulatory Commission, the National Development and Reform Commission, and the China Securities Regulatory Commission. The information received by market participants will be different, which is not conducive to their integration of green finance information. At the same time, it also brings management difficulties to regulatory authorities, and may even lead to disputes due to differences in standards.

### 3.2.2. Insufficient Information on Green Finance

The various reports related to enterprises and the environment are not detailed and detailed, and some parts are too general to reflect the specific measures and activities of the enterprise, resulting in insufficient information on green finance. This insufficient information leads to insufficient exposure of information by enterprises, making it difficult for information users to obtain accurate information, fully understand the achievements of the enterprise, and make reasonable evaluations, thus hindering their decision-making.

### 3.2.3. The Punishment for Green Finance is Not Obvious

The common violation of ethics and laws in green finance is the "greenwashing" behavior, which refers to a company claiming the title of environmental protection and enjoying the reputation of green environmental protection, but actual actions do go the opposite way. Due to the fact that this practice has been prevalent in recent years, the relevant disciplinary mechanisms are not perfect, and the punishment for this behavior is not strong, and the timeliness of punishment is also weak.

Therefore, the impact on the future development of the enterprise is not significant, and it has not posed a threat to the "greenness" of the enterprise, so it cannot play a preventive or preventive role.

## **4. The Problems in Green Finance Supporting the Development of the New Energy Industry**

### **4.1 The Investment and Financing Model of the New Energy Industry is Single, and the Capital Agglomeration Effect of Green Finance is Limited**

From a theoretical perspective, using green money products can alleviate certain financial problems for new energy enterprises, help them effectively avoid risks, and achieve economic growth. However, in fact, the current structure of green finance products in China is single, mainly relying on green credit and green bonds. These financing models are too single to provide a good financing environment for enterprises, often leaving them in a high-risk stage and unable to obtain sustained and stable returns. Therefore, the imbalance of financing structure has always been a structural contradiction in the financing mode of China's financial system. In order to better address the issue of capital security being tested by changes in supply and demand in the new energy industry due to macroeconomic fluctuations, the government needs to fully leverage the capital agglomeration effect of green finance, further expand the financing scale of the new energy industry in the capital market, carry out richer green finance activities, and stabilize the financial market.

### **4.2 The Green Finance Support Policies for the New Energy Industry are Misplaced, and the Investment Orientation Effect is Chaotic**

With the high attention and support of relevant policy departments in China, a series of relevant policies have been launched to promote the development of new energy. However, due to the lack of corresponding practical experience and effectiveness demonstration, there has been a significant overcapacity in China's new energy industry. With the development of the economic situation, policies have not been adjusted in a timely manner, which affects the effectiveness of investment orientation, making the original policies no longer applicable to the current new energy development environment. In the early stage of the development of the new energy industry, China's new energy industry has developed rapidly with policy support. The local government is willing to provide a certain degree of assistance to relevant enterprises, and banks are also willing to provide loans and financial support to these enterprises. With the continuous changes in the market, the actual demand of various countries has been met, but production is still increasing, leading to a situation where supply exceeds demand and corporate profits are significantly reduced. At this point, a large number of enterprises should have gone bankrupt due to severe losses, but due to the improper role of the government, they still provide various support. As a result, many enterprises continue to operate normally, ultimately leading to market imbalance.

Although China's new energy industry has achieved good development with the support of various policies, many investors pursue short-term benefits and neglect long-term economic development, resulting in an industrial investment bubble. If we want to promote the better development of the industry, we should formulate flexible financial policies and promote the independent development of enterprises.

### **4.3 The Level of Green Financial Innovation is Low, and the Effect of Scientific and Technological Innovation is Blocked**

At present, there are few green financial products in China, lacking innovation, and the related services in the new energy industry are not sound and complete enough, resulting in high financing costs and financing difficulties for many enterprises. According to data, the number of patents in the new energy industry is lower than the national average. With a patent implementation rate of 57%, only 40.2% can be successfully applied in the new energy industry. All data indicate that the technological innovation effect of green finance has not played a significant role in the new energy industry, and there is a deficiency in the transformation of technological achievements, failing to



effectively transform each technological achievement into actual products. In order for new energy related enterprises to increase their investment in scientific research, the government has provided a large amount of policy support. However, some financial institutions need to innovate green financial products due to the many shortcomings and defects in green financial products, providing financial support and risk transfer mechanisms for new energy technology research and development, in order to better assist enterprises in financing loans and increase technology investment.

## **5. Countermeasures and Suggestions**

The new energy industry is a strategic industry in the 21st century and plays a leading role in the development of the new economic cycle. Only by taking the new energy strategy as a long-term development direction can we not only develop the economy but also benefit the sustainable development of society. However, as a new type of industry, the development of the new energy industry requires a large amount of financial support, which not only requires government participation, but also requires financial means to solve problems.

### **5.1 Improving the Fund Aggregation Effect of Green Finance**

Although China's new energy market is currently leading globally, only by taking the new energy industry as a long-term development strategy and fully leveraging its leading role can we better develop the economy and achieve sustainable social development. Throughout the development process of the new energy industry, the government has played an important role, but the support provided by financial institutions is relatively lacking. Looking at the entire financial system, green finance only accounts for a small part, while green credit is only a small part of green finance. From this, it can be seen that the development of green finance still has a long way to go. Relevant institutions need to further leverage the role of the capital market, absorb more social funds through the capitalization process, and provide more support for the new energy industry through green financial products. In order to better guide idle funds in society and solve the problem of unreasonable regional allocation of resources and capital, one is to lift transaction restrictions between regions and allow funds to flow nationwide, achieving full utilization of various resources and funds; In addition, it is necessary to actively guide new energy enterprises in financing, introduce green capital, and issue relevant bonds.

At the same time, there are many externalities in China's new energy industry. At this time, it is necessary to subsidize the new energy industry with market-oriented means through the Carbon emission trading market to bring environmental benefits with the production of the new energy industry. However, there are still many problems in China's carbon market at present. The trading variety is relatively simple, and the relevant systems and systems are not perfect. It is necessary to learn from foreign advanced cases, constantly summarize experience, and further improve and deepen the reform of the Carbon emission trading market.

### **5.2 Investment Oriented Effects in Compliance with Green Finance**

In order to enable green finance to cooperate and complement each other in the new energy industry, the government needs to introduce a series of policies to support and guide green finance to truly help new energy enterprises, solve problems in the development process of the new energy industry, and accurately support its development. We should encourage both supply and consumption, encourage technology introduction, and increase independent innovation to achieve balanced development. On the one hand, due to the current lack of unified standards for green industries, green financial products may not be able to accurately assist new energy enterprises. Therefore, developing unified standards is of great significance for the flow of market funds. On the other hand, there may be issues of information asymmetry in the market, which requires the government to introduce clearer and more directional documents to guide the industry in making correct investments and guiding funds towards the new energy industry. In the entire development process of the new energy industry, it is necessary

to have a continuous policy measure to guide, and only continuous policy instructions can ensure a stable expectation for the future.

### 5.3 Enhancing the Technological Innovation Effect of Green Finance

Green finance may be affected by the technological innovation effect when supporting the development of the new energy industry, and cannot provide substantial assistance to new energy enterprises. One of the main reasons for this problem is that investors cannot grasp all the information of the enterprise when selecting investment targets, leading to high-risk investment. Therefore, the government should establish an information sharing platform for carbon finance, so that investors can learn more information and make decisions conveniently. By continuously improving the financial market and strengthening the innovation of carbon finance products, various risks that arise in the production, operation, and financing processes of new energy enterprises can be better dispersed, production efficiency can be improved, and better returns can be obtained in a shorter period of time. The development of the new energy industry may be affected by weather factors, so we should also establish specialized green insurance to ensure the daily operation of new energy enterprises. At the same time, we should develop third-party risk assessment agencies and brokerage institutions for green finance, expand the capacity and participation of the green insurance market, and enable more investors to join, ensuring that the new energy industry is developing on the right path.

### References

- [1] Gao Qiao. China's new energy development is at full throttle [N]. People's Daily Overseas Edition, November 7, 2022 (010).
- [2] Ma Yongsheng. Putting energy resources in one's own hands [J]. Qiuzhi, 2022 (04): 63-64.
- [3] Guo Zonglin, Yu Hua, Chen Guangya, Cheng Xin. Research on the Current Situation and Development Trends of Yancheng's New Energy Industry [J]. Sino Foreign Energy, 2010,15 (12): 106-109.
- [4] Wang Tongxu. New progress has been made in the development of green finance in China through the improvement of both quality and efficiency [N] China Business Herald, 2023-01-13 (002). Teng Yue. Hotspot [J]. Environmental Economy, 2022 (13): 6-7.
- [5] Ning Bing. Judgment and Policy Design of the Development Stage of China's New Energy Industry [D]. Northeastern University of Finance and Economics, 2012.
- [6] Wang Zhiguo. Research on the Issues of Green Finance Supporting the Development of New Energy Industry [D]. Tianjin University of Finance and Economics, 2019.