

# *Sustainable Development and Environmental Protection Financial Innovation Driven by Green Finance*

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**Keywords:** Green finance; sustainable development; environmental protection; financial innovation

**Abstract:** Aiming at the problem that the current research methods lack effective financial mechanism and restrict the sustainable development, this paper puts forward the financial innovation method of sustainable development and environmental protection under the promotion of green finance. Guided by the concept of sustainable development, we promote the sustainable development of small and medium-sized enterprises from the perspectives of economic and ecological sustainability by building a green supply chain financial ecosystem. Through the establishment of carbon emissions trading pilot, the innovation content of environmental protection financial products in each region is determined, which has a positive impact on the formation of sustainable development capacity in the low-carbon western region.

## **1. Introduction**

With the increasingly serious global environmental problems, sustainable development and environmental protection have become the focus of world attention. In this context, green finance came into being. It integrates environmental protection and sustainable development into financial business through innovative financial products and services, and provides new ideas and ways to solve environmental problems. In the current global economic situation, sustainable development is facing enormous challenges. Although governments and enterprises are actively seeking ways of sustainable development, there are still many problems in the process of practice. Among them, the lack of effective financial mechanism is an important factor <sup>[1]</sup>. The traditional financial system tends to focus only on short-term economic interests, while ignoring environmental protection and social responsibility, which leads to a large number of environmental pollution and waste of resources, seriously restricting sustainable development. In order to solve this problem, green finance was emerged as the times require. It integrates environmental protection and sustainable development into financial business through innovative financial products and services, and realizes the organic combination of economic development and environmental protection.

## **2. Sustainable development driven by green finance**

From the perspective of green finance, the sustainable development power of small and medium-sized enterprises is related to the ecological structure of green supply chain finance. The

ecological structure of green supply chain finance refers to a dynamic equilibrium structure formed by various participants, relevant policies, resources and environment in the field of green supply chain finance in the process of mutual influence and interaction. Its core is to realize the organic coordination of economic development and ecological environment protection, in order to promote sustainable development. Based on this, the following green supply chain financial ecological structure is constructed to promote sustainable development, as shown in Figure 1.

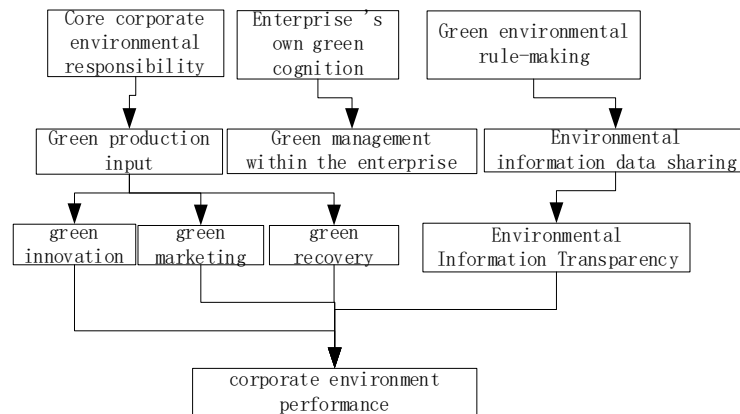


Figure 1: Ecological structure of green supply chain finance

The participants of green supply chain finance include financial institutions, enterprises, governments, scientific research institutions and so on. These subjects play different roles in the ecological structure, such as financial institutions providing environmental protection financing services, enterprises carrying out environmental protection actions, and government formulating environmental protection policies. Policy support is an important guarantee to promote the development of green supply chain finance. By formulating relevant policies, such as tax incentives, financial subsidies, etc., the government encourages enterprises to carry out environmental protection actions and promotes the development of green finance. Resource environment is the foundation of the development of green supply chain finance. In the ecological structure, resources and environment include natural resources, environmental quality, ecological balance and so on. Green supply chain finance emphasizes the effective use of resources and the protection of the environment in order to achieve a win-win situation between economy and environment. Information communication is an important part of the ecological structure of green supply chain finance. In order to realize the transparency and consistency of information, it is necessary to establish an effective information communication mechanism between the participants and share the information of resources and environment.

Under the complex and dynamic ecological structure of green supply chain finance, sustainable development includes two main aspects: economic sustainable development and ecological sustainable development.

First of all, sustainable economic development emphasizes the quality and sustainability of economic growth. This means that we need to achieve the organic unity of economic growth and environmental protection and social responsibility<sup>[2]</sup>. Green finance has played a key role in this regard, through a variety of means to support the sustainable development of the economy. These include providing financing support, which can help promote the development of green industries such as clean energy, energy conservation and emission reduction, and ecological agriculture. These industries not only help to reduce dependence on limited natural resources, but also help to reduce environmental pollution and greenhouse gas emissions, thus realizing the transformation of the economy to low-carbon and environmental protection. In addition, green finance also plays a key

role in risk management. By identifying and reducing risks associated with environmental issues, green finance can ensure the sustainability of investment and economic activities. At the same time, the establishment of market pricing mechanism also helps to incorporate environmental factors into economic decision-making, thus encouraging enterprises to take more environmental protection measures. On the other hand, ecological sustainable development emphasizes the importance of environmental protection and ecological restoration. This means that we need to achieve the harmonious coexistence of economic development and ecological environment. Green finance has actively promoted the protection and restoration of the ecological environment by investing in environmental protection projects and supporting ecological restoration projects. These investments can not only reduce environmental damage, but also help restore damaged ecosystems and improve ecological diversity and ecological balance. In addition, green finance has also strengthened the protection and restoration of the ecological environment by promoting environmental risk management and improving the level of environmental information disclosure. This will help companies and governments to better understand and manage environmental-related risks and take appropriate measures to mitigate them. In short, green finance provides strong support for achieving sustainable development goals by promoting sustainable economic development and ecological sustainable development in a complex and dynamic green supply chain financial ecological structure. It not only helps to improve the mode of economic growth, but also helps to protect and repair the ecological environment, laying a solid foundation for us to create a more sustainable future.

### 3. Financial innovation of environmental protection driven by green finance

The sustainable development promoted by green finance has provided great help for China to build a mature green financial development system. With the wide application of big data technology, environmental protection financial products have ushered in a new round of innovation. Take innovative carbon financial products as an example, as shown in Table 1.

Table 1: Innovative carbon financial products <sup>[3]</sup>

| Region    | Market Transaction Scale | Innovation Content                    |
|-----------|--------------------------|---------------------------------------|
| Beijing   | 120 million              | Carbon Quota over-the-counter Trading |
| Shanghai  | 120 million              | Borrow Carbon Trading                 |
| Guangdong | 140 million              | Interchangeable Carbon Trading        |
| Shenzhen  | 280 million              | Carbon Finance Authorization          |

Through the establishment of carbon emissions trading pilot, it can form a carbon financial market with a certain scale, and find a new breakthrough for environmental protection financial innovation. Driven by green finance, environmental protection financial innovation includes two aspects: environmental financial products and environmental financial markets.

Environmental financial products are financial products and services designed for environmental protection and sustainable development. Green finance provides strong financial support for environmental protection and social development through innovative financial products and services, such as green bonds, green funds, green insurance, etc<sup>[4]</sup>.

Among them, the green bond is a bond that raises funds for environmental protection projects, and its interest payment and principal repayment depend on the environmental benefits generated by the project. The issuance of green bonds can reduce the financing cost of environmental

protection projects, attract more investors to participate in environmental protection investment, and promote the development of green industry. Green fund is also an important financial innovation. Green fund is a fund with environmental protection projects as the main investment object, and its investment income depends on the environmental benefits of the project. By investing in green funds, investors can obtain the return on investment in environmental projects, but also can contribute to environmental protection; green insurance is also one of the important contents of green financial innovation. Green insurance is an insurance product for environmental pollution and ecological damage, which can provide risk protection for environmental protection projects. By purchasing green insurance, enterprises and institutions can reduce the risk of environmental protection projects and improve the sustainability and stability of projects.

In short, green finance provides strong financial support for environmental protection and social development through innovative financial products and services. These innovative financial products and services can not only provide financing support for environmental protection projects, but also promote the development of the environmental protection industry and promote the transformation of the economy to a low-carbon and environmentally friendly direction.

Environmental financial market refers to the market system established for environmental protection and sustainable development. This system is the core of the green financial market structure, including financial institutions, enterprises, governments, investors and so on. These entities play different roles in the market, such as financial institutions providing environmental protection financing services, enterprises carrying out environmental protection actions, and government formulating environmental protection policies. Market transactions are an important part of the green financial market structure. Market transactions include investment and financing of environmental protection projects, environmental derivatives transactions, etc. These trading activities are conducted in an open and transparent manner, providing investors with more options and opportunities to achieve sustainable development goals. At the same time, the market can also reflect the market's demand for environmental benefits and supply relationship through the price mechanism to promote the development of environmental protection industry.

#### 4. Future prospects

With the increasing pressure on environmental protection and sustainable development, we can foresee that more and more financial institutions will actively participate in green finance. This includes traditional banks, insurance companies and emerging green financial technology companies. These institutions will not only provide financial support, but also actively promote the development of sustainable investment and green bond markets. In the future, we can expect more diversified green financial products and services. This may include green funds for different investor needs, renewable energy project financing, and green savings and investment options for individual consumers. In order to promote green finance, education and awareness will be crucial. Financial institutions and governments can strengthen public and investor awareness of green finance and provide training and education to help people better understand the potential and impact of green investment. The success of the carbon emissions trading pilot will encourage more regions and countries to introduce carbon finance mechanisms. This will help reduce carbon emissions, promote sustainable development, and provide more opportunities for the carbon market. In addition to carbon finance, more types of environmental financial product innovation can also be expected. This includes water resources management finance, biodiversity conservation finance, etc., to cope with various environmental challenges. The green bond market will continue to expand to fund environmental projects. The issuance of these bonds may adopt more innovative models, such as project bonds, blockchain-supported bonds, etc.

The international community may be committed to developing global green financial standards to ensure that the international community among financial systems may be committed to developing global green financial standards to ensure coordination and consistency among financial systems. This will help promote cross-border green investment and financial flows. Governments may actively cooperate to advance the environmental protection and sustainable development agenda. This may include joint formulation of environmental protection policies, tax incentives, and cross-border cooperation projects. International regulators may work closely together to establish a regulatory framework to ensure transparency and compliance in green finance. This will help reduce risks and misconduct in the field of green finance. In the future, financial education will become crucial so that the public can better understand the concept and role of green finance. Schools, universities, and financial institutions can work together on educational programs that foster young generations' interest and understanding of sustainable finance. The education system can emphasize the cultivation of social responsibility and environmental awareness. This helps to build a more environmentally friendly and socially conscious society, prompting individuals and businesses to participate more actively in environmental protection and sustainable development activities. In order to improve the public's financial knowledge, a popularization plan for different age groups and education levels can be introduced. This can include courses, green finance workshops, online resources, etc. Through media and publicity activities, public awareness of green finance and environmental protection can be improved. This can include holding environmental protection activities, making educational videos, and social media campaigns.

## 5. Conclusion

The development of green finance not only helps to solve environmental problems, but also promotes the transformation of economic growth mode. The traditional way of economic growth is often at the expense of the environment, while green finance promotes the transformation of the economy to a low-carbon and environmentally friendly direction by supporting green industries and environmental protection projects. This can not only reduce environmental pollution, but also create new economic growth points and achieve a win-win situation between economic development and environmental protection. Strengthening the research and practice of green finance has important practical significance and far-reaching historical significance for promoting sustainable development and environmental protection.

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