

# Development Strategy of Carbon Finance in China Under the Low Carbon Economy Context

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**Abstract:** As the concept of green development deepens, China actively promotes a low carbon economic development model, paying close attention to climate issue governance and carbon finance. Vigorously developing the carbon finance market and utilizing market mechanisms to optimize various resources, it provides industrial enterprises with carbon emission models that suit their own development. As the world's largest developing country, China should assume relevant responsibilities when facing global climate issues. Viewing the current development, countries worldwide have enhanced their focus on carbon trading markets and fully recognize the significant role of carbon finance in changing the future international financial landscape. From China's perspective, promoting the development of the carbon finance market and studying the current situation, issues, and strategies of carbon finance market development are crucial. This accelerates the construction of the carbon finance market in China, seeks the right to speak in the global carbon finance market, and thus, solidifies its standing in the international market.

**Keywords:** Low Carbon Economy, Carbon Finance, Development Strategy.

## 1. The Key Role of Carbon Finance in Promoting the Development of the Low Carbon Economy

### 1.1. Providing Financial Support

In the journey of transitioning to a low carbon economy, carbon finance plays an important role by offering financial support through innovative financial tools for low carbon projects. Against the backdrop of increasingly severe environmental issues, the traditional high carbon development model contradicts the concept of green and sustainable development. In this specific developmental journey, the advantages of carbon finance are highlighted. Utilizing green credits, green bonds, carbon funds, and other means, it guides social capital towards the low carbon sector, providing ample financial guarantees for the research and application of clean energy, emissions reduction, and efficiency enhancement technologies [1-3]. Sufficient funding promotes continuous innovation in low carbon technologies and fosters the rapid development of the low carbon industry, laying the foundation for a green and low carbon economic system.

### 1.2. Optimizing Resource Allocation

Facing environmental pressures and the demand for sustainable development, carbon finance, as a new financial model, directs capital flows into the low carbon sector through market mechanisms to achieve optimal resource allocation. In carbon pricing and carbon trading market mechanisms, carbon finance plays a unique role by positively incentivizing enterprises to adopt environmentally friendly production methods, thereby reducing carbon emissions, lowering carbon costs, and enhancing competitiveness. Furthermore, it attracts more social responsibility investments into the low carbon technology sector, providing sufficient funds for its development [4]. Optimizing the allocation of various resources, it promotes innovation and upgrades in low carbon technologies, driving the rapid development of the low carbon industry, and injecting vitality into the economic

structural transformation.

### 1.3. Reducing Financing Costs

As environmental protection awareness increases, the development of low carbon projects has received high attention for achieving economic structural transformation and meeting the demands posed by the concept of sustainable development. However, due to objective factors, low carbon projects face difficulties in financing, which directly restricts their development speed. To address these issues, carbon finance provides more convenient and lower-cost financing channels through innovative financial products and services [5]. In carbon finance, financial products like green bonds are an important part, usually featuring lower interest rates and longer terms, enabling low carbon projects to secure the needed funds at lower financing costs. Additionally, financial products also help reduce the time costs and accelerate the progress of projects. Lastly, carbon finance improves the financing efficiency and success rate of low carbon projects through risk diversification and credit enhancement, encouraging more social capital to invest in the low carbon sector, as illustrated in Figure 1.

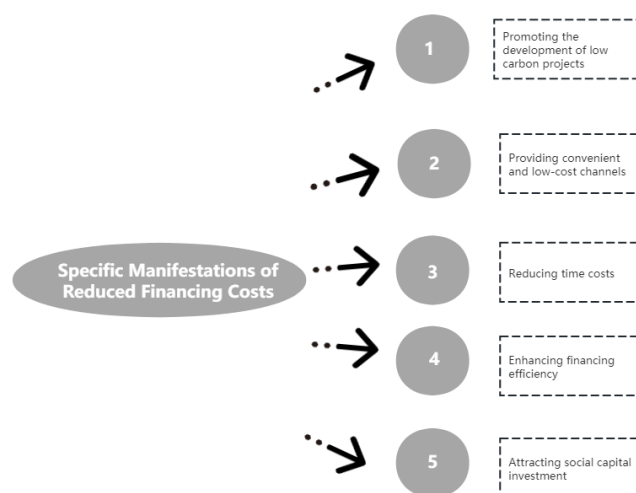


Figure 1. Specific Manifestations of Reduced Financing Costs

## 2. Main Participants in China's Carbon Finance Market

### 2.1. Regulatory Authorities

The development of carbon finance is crucial for promoting the low carbon economic transition and achieving sustainable development, and regulatory authorities are essential for ensuring the robust operation of the carbon finance service system. In China, regulatory bodies include the People's Bank of China, the Securities Regulatory Commission, the Banking Regulatory Commission, and the Insurance Regulatory Commission. These regulatory bodies should bear corresponding responsibilities and provide a favorable environment for financial institutions to develop carbon finance. Currently, the Securities Regulatory Commission provides specialized financing and trading channels for listed companies; the Banking Regulatory Commission reflects the urgent need for commercial banks to develop carbon finance businesses; the Insurance Regulatory Commission needs to support the development of carbon finance in terms of insurance [6]. Close collaboration among regulatory bodies forms a concerted effort to promote the healthy development of the carbon finance market and contribute to China's low carbon economic transformation and sustainable development.

### 2.2. Commercial Banks

In the carbon finance service system, commercial banks act as financial intermediaries and are the bridge connecting the international market and domestic enterprises, as well as the main force in the financial industry participating in carbon finance. Therefore, adopting financial services to protect the environment and achieve energy-saving and emission reduction goals is still in its developmental stage in China. In recent years, the total amount of energy-saving and environmental protection projects has been increasing annually, but the proportion of loans for these projects in the total loan volume remains low [7]. With the widespread application of the Equator Principles in international financial practices, its value in guiding banks to achieve sustainable development operations is increasingly apparent, and the cooperation between Chinese commercial banks and international organizations is growing stronger.

### 2.3. Policy Banks

In the carbon finance service system, policy banks play a supportive role but, due to their non-profit-driven nature, stand in stark contrast to commercial banks. By providing long-term, low-interest loans and other financial services, they support national major strategies and industrial development, promoting economic and social sustainable development. However, the role of policy banks in the development of carbon finance in China has not been fully utilized, and their participation is limited, directly restricting the development of carbon finance and even hindering China's advancement in the low carbon economy. To fully utilize the auxiliary and supportive role of policy banks in carbon finance, further improvement of related policies is necessary to clarify their responsibilities and positioning in the carbon finance field.

### 2.4. Carbon Finance Intermediary Institutions

Carbon finance intermediary institutions include fund companies, insurance companies, and trust investment

companies, each bearing unique responsibilities and jointly promoting the smooth progress of carbon emission reduction projects, as shown in Table 1. Since carbon emission reduction is a virtual concept with strict trading rules and complex procedures, transactions often involve international cooperation, which can be lengthy and challenging for ordinary intermediary institutions to handle. In China, carbon finance intermediary institutions are still in their initial stages, and completing these steps presents significant difficulties. Additionally, there are no sufficiently professional technical consulting centers to assess, analyze, and mitigate risks. Only through the joint efforts of all regulatory bodies can the robust development of carbon finance be promoted.

**Table 1.** The Role of Carbon Finance Intermediary Institutions

Types of Institutions	Roles
Fund Company	By establishing green funds or carbon funds, provide long-term and stable financial support for low-carbon projects.
Insurance Company	Offer insurance services for carbon emission reduction projects, reducing losses due to natural disasters, policy changes, and other risks.
Trust Investment Company	Utilize the trust platform to provide flexible financing channels for low-carbon projects and design innovative trust products.

## 3. Problems in the Development of Carbon Finance in China

### 3.1. Lack of a Comprehensive Carbon Finance System

Carbon finance, as an innovative financial instrument, is gradually becoming a crucial means to promote global emissions reduction and achieve sustainable development goals in the context of green and low-carbon transformation. Although China has recognized the importance of carbon finance and has implemented a series of measures in recent years to promote its development, the country still faces many challenges at the policy and institutional levels. Some existing regulations concerning carbon finance are merely provisional measures that have not been elevated to the status of law, thus failing to provide adequate protection and definition for enterprises engaged in carbon finance. Additionally, the legal framework for carbon finance in China is somewhat fragmented and lacks consolidation, resulting in a lack of robust legal support for the development of carbon finance [8]. Inadequate legal and policy frameworks for carbon finance lead to unprotected development, increased policy risks, and have even become a major risk in carbon trading.

### 3.2. Uneven Regional Development

In the global context of green and low-carbon development, although China has enacted laws such as the Energy Conservation Law, Circular Economy Promotion Law, and Renewable Energy Law to promote low-carbon economic development, these laws are still insufficient in terms of regulating and supporting new types of carbon financial products and markets. Currently, provinces like Zhejiang and Jiangsu are leading in institutional development, while only a few other regions have tentatively issued local legal documents related to carbon emissions trading, with most areas lacking legal and institutional oversight of trading. The unclear division of responsibilities among departments, the

absence of specific regulatory systems for carbon trading markets, and limited policy enforcement have led to criminals exploiting these markets for illegal activities such as money laundering and fraud, with some even abusing their authority, embezzling funds, or manipulating the market.

### 3.3. Difficulty in Controlling Trading Risks

The carbon market was initially established to effectively address climate change by incentivizing economies to achieve energy-saving and emission reduction goals. For major market participants such as enterprises, investors, and financial instrument designers, the development of the carbon market is closely linked to the overall goals of energy conservation and emission reduction. Any micro-market behaviors in the carbon market or macro-developmental evaluations that contradict these overall goals could adversely affect the long-term and orderly development of the market. The same risks apply to market integration. Decentralized markets inevitably face the issue of lack of interconnection between different markets, which is considered a major barrier to further development. How to develop around common standards to increase the liquidity, transparency, and depth of the entire carbon market is a significant challenge facing the decentralized trading system.

### 3.4. Low Degree of Product Innovation

China's carbon finance market started relatively late, and compared to international levels, the variety of carbon finance products in China is still limited, predominantly restricted to green credit services related to reducing carbon dioxide emissions [9]. This limitation hampers the diversified development of the carbon finance market and fails to meet the growing diverse demands of the market. Due to a lack of emphasis on financial development, carbon finance institutions have insufficient understanding of market needs,

leading to a lack of market for carbon finance-linked products once produced, causing them to remain unsold. This market reality in turn discourages institutions involved in carbon finance from innovating new products, creating a vicious cycle that makes product innovation and progress even more challenging.

## 4. Strategies to Promote the Development of Carbon Finance in China

### 4.1. Standardizing Risk Prevention Mechanisms

Due to the incomplete carbon trading system and lack of standardization in the carbon trading market, coupled with the uneven professional qualifications of carbon finance participants, the carbon finance field is fraught with substantial policy, credit, technical, and price risks. Therefore, participants need to establish comprehensive carbon finance risk prevention mechanisms, be well-informed of government policies, and accurately grasp the policies made by the government to efficiently reduce policy risks in later development stages. Regarding credit risks, it is necessary to set up specialized institutions within financial organizations to enhance the professionalism of personnel and the specialization of products, to scientifically and professionally execute carbon finance projects, and to reduce the occurrence of credit risks. Regarding technical risks, it is essential to enhance the professional knowledge and skills of technical staff, learn from failures in developing carbon finance, and adopt successful foreign experiences to develop the carbon finance sector, thereby reducing the negative impacts brought by technical risks.

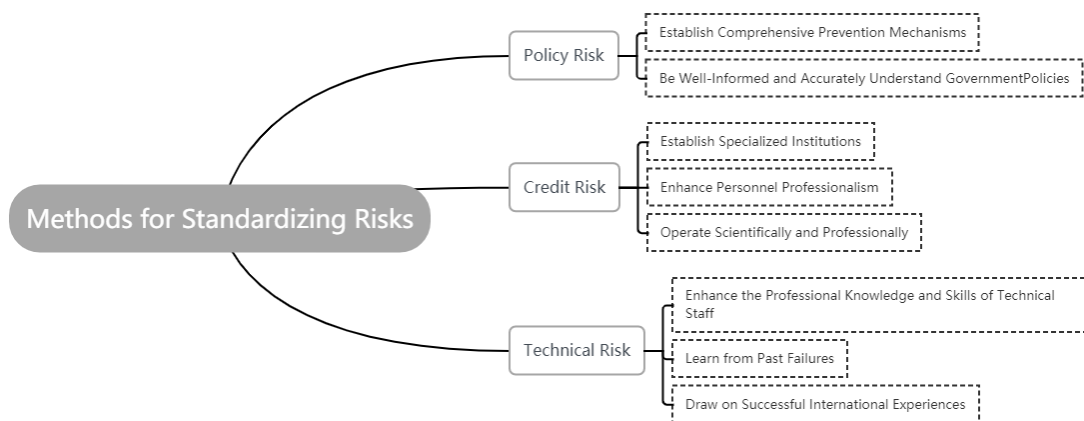


Figure 2. Methods for Standardizing Risks

### 4.2. Promoting Product Optimization and Innovation

Against the backdrop of global climate change and green low-carbon transformation, the development of the carbon finance sector should be accelerated. However, the current lack of diversity in carbon finance products is a key constraint. Compared to the diverse carbon finance product systems abroad, China's carbon finance products are relatively monolithic, primarily focused on green credit services, and unable to fully meet the diversified demands of the market. Carbon finance products abroad not only include green credit services but also intermediate services such as carbon finance

wealth management, consulting, financial advisory services; registration, custody, settlement, and clearing account management services; credit evaluation and guarantee services, letters of credit, and credit enhancement services [10]. To rapidly develop China's carbon finance sector, it is necessary to draw on successful foreign experiences, combine them with China's actual conditions, and vigorously develop carbon finance products with Chinese characteristics.

### 4.3. Participating in Carbon Trading Intermediary Services

To integrate China's carbon finance into a larger financial system, commercial banks should change their previous

practices of relying solely on credit adjustments to channel funds towards CDM projects and actively participate in carbon trading intermediary services. By assisting in the strategic adjustment of bank credits, this enables the dual wins of financial innovation and low-carbon economic development. From a business perspective, there are differences between commercial banks and investment banks, but essentially both serve as intermediaries that adjust capital flows from savings to investments through credit adjustments. With the gradual implementation of mixed operation in the financial industry, commercial banks are also transitioning from a single deposit and loan model to a diversified operating model. Therefore, the development of the low-carbon economy should be taken as an opportunity to enhance the active role of financial institutions in the carbon trading market. Currently, China's carbon trading business faces a lack of intermediary organizations; commercial banks should play a lubricating regulatory role through their investment banking departments and communicate and cooperate with foreign investment banks to highlight the service functions of financial intermediaries.

#### 4.4. Building a National Carbon Finance Platform

Constructing a unified carbon finance platform is crucial for promoting cross-regional resource flow and optimal allocation of carbon assets nationwide. To advance the establishment of a national carbon finance platform, it is essential to utilize the experiences from current pilot carbon trading markets and apply them to the construction of a unified market. In practice, by integrating the operational experiences from various regions, a national carbon market operating mechanism can be established [11]. This forms a coordinated system with regional carbon trading pilots as the primary market and a national unified market as the secondary market. Through a bottom-up development approach, the experiences and mechanisms from pilot regions are continuously promoted to non-pilot areas, gradually achieving market integration. Since 2017, China has begun constructing a national carbon market and plans to preliminarily establish the market by 2021 [12-14].

### 5. Conclusion

Due to the rise of the low-carbon economy, China's economic environment has undergone significant changes, and carbon finance is continuously developing. In the context of the low-carbon economy, human development concepts have changed, and the adjustment of industrial structures and the development of energy-saving and emission reduction technologies have received high attention. Based on the carbon finance system to promote the long-term healthy development of China's low-carbon economy, it has become a focus of future development. However, due to objective factors, there are some deficiencies in the development of carbon finance in the current economic environment. It is

necessary to base actions on actual development situations, standardize risk prevention mechanisms, promote industry optimization and innovation, participate in carbon trading intermediary services, and promote the healthy development of China's carbon finance market to provide strong support for the development of the low-carbon economy.

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