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Article

## Research on the Commercial Law Guarantee Mechanism for Green Credit in New Energy Enterprises

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**Abstract:** In the context of climate change and the promotion of energy transformation, the development of new energy enterprises is crucial for achieving sustainable development goals and advancing low-carbon economic restructuring. Green credit has become a key financial instrument for guiding capital toward environmentally friendly projects, yet its effectiveness depends on a sound commercial law framework that can allocate risks, protect the interests of stakeholders, and promote market confidence. This paper explores the commercial law guarantee mechanism for green credit in new energy enterprises. First, it clarifies the core concepts of green credit, commercial law guarantees, and new energy enterprises, and outlines the relevant theoretical foundations in financial law, environmental law, and contract law. Second, it analyzes the current situation and dilemmas of green credit protection in China, identifying deficiencies in legislation, contract design, guarantee structures, information disclosure, risk-sharing arrangements, and dispute resolution mechanisms. On this basis, the paper proposes targeted suggestions, including strengthening top-level legislative design, refining the legal status and obligations of green credit participants, innovating green credit contract models, and establishing a diversified guarantee system that integrates collateral, credit enhancement, and policy support. Furthermore, it advocates improving risk-sharing mechanisms, enhancing regulatory coordination, and optimizing dispute resolution procedures to foster a stable and transparent market ecology for green credit in new energy enterprises.

**Keywords:** new energy; green credit; commercial law; financial regulation; sustainable development; risk management

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### 1. Introduction

#### 1.1. Research Background

Global climate change has driven the transition to green and low-carbon development models, becoming a central focus for countries in their strategic planning. In 2020, China established the goal of "Carbon Peaking and Carbon Neutrality." The new energy industry plays a pivotal role in optimizing the energy structure and supporting green finance. Green credit has emerged as a crucial tool for industrial upgrading and technological advancement by precisely targeting new energy projects. However, new energy enterprises, characterized by high technology intensity and extended investment cycles, often encounter challenges such as elevated financing costs and insufficient information flow [1, 2].

Data indicates that in 2022, the total green credit in China amounted to RMB 22 trillion, with only 30% allocated to the new energy sector. These funds were predominantly directed toward large-scale state-owned enterprises, leaving small and medium-sized enterprises in the new energy field with a substantial financing gap. The

commercial law framework for green credit in new energy remains underdeveloped, revealing institutional shortcomings and a lack of comprehensive legislative regulations. Furthermore, the design of green credit contract terms is outdated, and environmental benefit indices are not effectively integrated into contracts. Some banks continue to rely on traditional credit standards, while innovation in guarantee mechanisms remains insufficient. The utilization rate of new pledges, such as carbon emission rights and intellectual property rights, is below 10%, and the asset evaluation system is incomplete, exacerbating credit risks for financial institutions. On an international scale, the absence of coordination between legal enforcement and market incentives hampers the sustainable development of green credit. Therefore, it is imperative to reconstruct the green credit guarantee framework for new energy enterprises from a commercial law perspective.

### *1.2. Research Significance*

This study examines the legal guarantee mechanism for green credit in new energy enterprises, highlighting its significant theoretical and practical value [3]. From a theoretical standpoint, the research broadens the framework of green finance and legal protection mechanisms, addressing gaps in the existing literature. The comprehensive analysis of relevant theories establishes a solid foundation and serves as a reference for future studies. From a practical perspective, the study provides valuable recommendations for policymakers and financial institutions, aiding in the development of a robust legal protection system for green credit implementation. By enhancing legislation, innovating contract design, creating a diversified guarantee system, and optimizing risk-sharing mechanisms, the financing risks faced by new energy enterprises can be effectively reduced, financing efficiency can be improved, and the sustainable growth of the green economy can be supported. The findings also offer guidance for new energy enterprises in navigating legal protections, enabling them to better address financing challenges and achieve sustainable development goals.

## **2. The Concept and Theoretical Basis of Commercial Law Guarantee for Green Credit in New Energy Enterprises**

### *2.1. Core Concepts*

#### *2.1.1. New Energy Enterprise*

New energy enterprises are economic organizations that conduct research, manufacture products, sell goods, and provide ancillary services within the renewable energy industry [4]. Renewable energy sources encompass non-traditional energy sources, including solar energy, wind energy, hydropower, and biomass energy. New energy enterprises focus on researching, developing, and applying new energy technologies to reduce dependence on conventional fossil fuels and mitigate environmental pollution. They play a central role in technological innovation, equipment production, and project operations, and are key forces driving energy restructuring and sustainable development. The growth of new energy companies holds significant strategic value for ensuring energy security and promoting ecological protection.

#### *2.1.2. Green Credit*

Green credit refers to the credit activities undertaken by financial institutions to promote the development of green industries, including environmental protection, energy conservation, and the adoption of clean energy. During the credit decision-making process, financial institutions evaluate environmental and social risks and offer favorable terms for projects that meet green criteria, such as lower interest rates or extended loan terms [4, 5]. Conversely, loans are restricted or denied for projects characterized by high pollution and excessive energy consumption. Green credit directs capital toward green industries, facilitating the economic transition to sustainability and ensuring a balanced relationship between finance and the environment.

### 2.1.3. Commercial Law Guarantee Mechanism

The commercial law guarantee mechanism provides new energy enterprises with a comprehensive institutional framework to support green credit through commercial law. This mechanism encompasses legislation, contracts, guarantees, and risk-sharing strategies [6, 7]. Legislation focuses on standardizing the establishment and clearly defining the rights and responsibilities of all parties involved. Contractual agreements are designed to ensure compliance with environmental standards. Furthermore, innovative guarantee models are essential to protect creditors' rights effectively. Risk-sharing and dispute resolution require scientific planning and transfer methods to address disputes efficiently. Overall, the commercial law guarantee mechanism establishes a stable and standardized legal framework for the green credit operations of new energy enterprises, facilitating the sustainable growth of green credit initiatives.

## 2.2. Related Theoretical Basis

### 2.2.1. Asymmetric Information Theory

Asymmetric information theory highlights that in market transactions, parties often possess varying levels of information. In the green credit domain of new energy enterprises, the disparity in information between financial institutions and these enterprises is particularly pronounced. New energy enterprises have extensive knowledge regarding the technical risks and future market potential of their projects, whereas financial institutions face higher costs in acquiring equivalent information. This asymmetry can result in inaccurate credit judgments and elevated credit risks. To address these challenges, it is essential to reduce the effects of information asymmetry by improving mechanisms for information disclosure and strengthening third-party assessments, thereby enhancing the operational efficiency and stability of the market [5, 8].

### 2.2.2. Stakeholder Theory

Stakeholder theory suggests that a business's activities are interconnected with the interests of its shareholders and extend to a wider range of stakeholders, including creditors, employees, suppliers, and the general community [9]. In the context of green credit practices within new energy enterprises, financial institutions, enterprises, the government, and the public all play significant roles as stakeholders. Financial institutions aim to achieve revenue generation and risk control through green credit, while new energy companies depend on financial support to foster their growth. Simultaneously, the government seeks to advance the green industry and promote ecological protection, whereas the public prioritizes improvements in environmental quality. Balancing the interests and demands of all parties and establishing a scientifically sound system for interest distribution are essential to ensuring the long-term and stable development of green credit.

### 2.2.3. Risk Sharing and Control Theory

The theory of risk sharing and control emphasizes that, during financial transactions, risks must be effectively allocated and managed among participants through a well-structured system. The green credit business of new energy enterprises often involves various risk factors, including technological, market, and policy-related risks. Establishing a diversified risk-sharing system, incorporating government guarantees, insurance guarantees, and joint bank loans, is essential. By strengthening the risk management framework and improving the identification, measurement, and monitoring of risk points, green credit risks can be accurately controlled, ensuring the stable development of financial markets.

## 3. The Development Status and Challenges of Commercial Law Protection for Green Credit in China's New Energy Enterprises

### 3.1. Development Status

China has established a green financial policy framework to clarify the direction of priority support for the new energy industry. Green credit has been introduced as part of the national strategy, requiring financial institutions to establish environmental risk assessment systems and include loans for new energy projects in the Macro-prudential Assessment (MPA). At the local level, regions such as Zhejiang and Guangdong have experimented with "green financial reform pilot zones" and implemented differentiated credit discount policies. However, current policies are primarily based on departmental rules and regulations, which have a lower level of legal effect. Additionally, the absence of uniform, mandatory standards for disclosing environmental information hinders the effective implementation of these policies.

By the end of 2023, the total amount of green credit in China had exceeded RMB 38 trillion, with loans for the clean energy industry accounting for 32%, an increase of nine percentage points compared to 2020. The Bank of Jiangsu introduced a "carbon neutral linked loan," where the interest rate is directly tied to the emission reduction effect of the project. The cumulative amount of such loans has surpassed RMB 20 billion. However, there is a notable imbalance in the allocation of credit resources. Central enterprises and large private enterprises receive 75% of the funds allocated to green credit, while small and medium-sized new energy enterprises often face challenges due to a lack of effective mortgage guarantees. Consequently, their financing costs remain 20% to 30% higher than the benchmark interest rate.

### 3.2. The Dilemma of Commercial Law Guarantee Mechanism

#### 3.2.1. Legislative Level: Lack of Unified Higher-ranking Law

China's legislation on green credit for new energy enterprises is fragmented and lacks a unified, systematic safeguard mechanism. The absence of effective coordination among various provisions has resulted in inconsistencies in the practical application of laws. Current legislation primarily relies on lower-level departmental rules and local regulations, without the support of an authoritative, higher-ranking law. Consequently, financial institutions face elevated legal risks when expanding their business, which hinders new energy enterprises from securing long-term and stable credit resources. This limitation restricts the growth potential of the green credit business within the new energy sector.

#### 3.2.2. Contract Level: Analysis of Problems in the Design of Contract Terms

In the green credit agreement for new energy enterprises, it is challenging to translate environmental protection standards into specific contract details. These standards are often broad and general, lacking precise and enforceable quantitative parameters. When financial institutions enter into credit contracts with new energy companies, accurately incorporating environmental protection norms into the contract becomes difficult. The agreement does not provide sufficient binding force regarding the environmental and social responsibilities of the enterprise [2, 10]. Furthermore, the contract details are outdated and fail to adequately address the unique characteristics of new energy companies or the risk factors associated with green credit businesses. Additionally, the rules governing repayment methods and liabilities for default lack flexibility, which increases the difficulty of corporate financing and elevates the credit risk for financial institutions.

#### 3.2.3. Guarantee Level: Problems in the Application of Traditional Guarantee Methods

New energy enterprises are characterized by a light asset structure and rapid technological iteration. Traditional guarantee methods, such as real estate mortgages or contract guarantees, often fail to meet their financing needs [4, 11]. The core resources of these enterprises are primarily intangible assets, including intellectual property rights and project income rights. Within the traditional guarantee framework, such assets are

difficult to evaluate and mortgage, making it challenging for enterprises to provide collateral that satisfies financial institutions' requirements. Furthermore, financial institutions have been slow to innovate guarantee models, and the adoption of new methods, such as intellectual property pledges and project income rights, remains limited. The current evaluation, registration, and institutional systems are not yet fully developed, creating significant challenges and risks for financial institutions attempting to implement innovative guarantee practices.

#### 3.2.4. Risk Sharing and Dispute Resolution: The Need for an Efficient Path to Dispute Resolution

The risk-sharing mechanism for green credit in new energy enterprises in China is relatively straightforward, primarily relying on government financial subsidies and the support of guarantee institutions. However, this approach is insufficient for effectively dispersing the credit risk faced by financial institutions. The scale and sustainability of government financial subsidies are inherently limited, and the capacity of guarantee institutions also faces certain constraints.

Green credit for new energy enterprises involves specialized knowledge across multiple fields, including environmental protection and finance, making disputes highly complex and technical. The current dispute resolution mechanism depends heavily on professional arbitration institutions and highly specialized judges, which results in inefficiencies and increased costs for parties seeking to protect their rights. This situation poses challenges to maintaining financial market stability and safeguarding the legitimate interests of new energy enterprises [12].

### 4. Ways to Improve the Commercial Law Guarantee Mechanism for Green Credit in New Energy Enterprises

#### 4.1. Build a Systematic Legal Framework

Constructing a systematic legal framework and optimizing the top-level legislative design are fundamental measures to promote the steady development of green credit in new energy enterprises. Certain issues exist in China's legislation regarding green credit for new energy enterprises, such as insufficient coordination, which results in contradictions in the application of the law. It is recommended that comprehensive planning be conducted at the national level. First, there is a need to formulate higher-ranking laws that clearly define the concept, scope of application, basic criteria, and the responsibilities of regulatory agencies, providing clear legal guidance for new energy enterprises to engage in green credit activities. Second, emphasis should be placed on ensuring alignment and coordination with other relevant laws to build an interconnected legal system. The characteristics and development trends of the new energy industry should be fully considered during the legislative process to ensure the law's predictability and adaptability. Third, by enhancing the legislative framework and strengthening legal authority, legal risks faced by financial institutions can be mitigated. This will, in turn, promote the healthy and orderly development of the green credit market for new energy enterprises.

#### 4.2. Innovate the Green Credit Contract Model

Developing an innovative green credit contract model is essential to ensure that the environmental benefits of new energy enterprises are rigorously quantified and constrained. The current green credit contract often fails to effectively translate environmental standards into enforceable agreements, making it difficult to impose meaningful constraints on corporate ecological practices. To address this, it is necessary to assemble professional resources and establish a unified green credit contract model. Specifically, green standards should be refined into clear and enforceable contract terms, with explicit definitions of enterprises' obligations and responsibilities in environmental protection, energy conservation, and emission reduction. Environmental performance

indicators that enterprises must achieve should be clearly outlined, along with consequences for failing to meet these standards, such as increased interest rates or early loan recovery. The contract terms should also account for the unique characteristics of new energy enterprises and the risk factors associated with green credit business [2, 13].

Furthermore, flexible repayment plans and incentive measures should be designed, alongside the establishment of a supervision and evaluation system to ensure effective implementation of contract terms. Innovating the green credit contract model will enhance financial institutions' oversight of the environmental performance of new energy enterprises, integrate corporate environmental responsibility into business decision-making, and ultimately achieve a balance between economic and environmental benefits [1, 14].

#### *4.3. Construct a Diversified Green Guarantee System*

One approach to addressing the shortage of collateral in new energy enterprises is to establish a diversified green guarantee system. First, the supporting framework for innovative guarantee methods, such as intellectual property pledges and project income pledges, should be strengthened [15]. Second, it is essential to create a professional institution for evaluating intangible assets and a registration platform, standardizing the evaluation and registration processes to mitigate risks for financial institutions. Third, the development of green guarantee institutions is recommended to provide guarantee services for new energy enterprises. The government can facilitate this by enhancing the guarantee and risk management capabilities of these institutions through financial subsidies and tax incentives. Furthermore, introducing new guarantee models, such as green insurance and supply chain guarantees, can help build a diversified green guarantee system. This would expand financing channels for new energy enterprises and support the sustainable growth of the new energy industry.

#### *4.4. Improve the Risk Sharing and Dispute Resolution Mechanism*

The key to optimizing the market ecology of green credit in new energy enterprises is to enhance the risk-sharing and dispute-resolution mechanisms. First, it is essential to establish a multi-level risk-sharing system. The government could consider creating a special fund for green credit risk compensation to offset losses incurred by financial institutions in their business activities in a proportionate manner, thereby encouraging greater participation [15]. Additionally, insurance companies should be guided to innovate green credit insurance services and provide risk-hedging instruments for new energy enterprises and financial institutions. In terms of dispute resolution, establishing a professional dispute resolution center and training arbitration and adjudication personnel to a high standard is recommended to improve efficiency. Furthermore, it is important to strengthen internal industry constraints, develop systematic frameworks, and resolve conflicts through negotiation and mediation. The systematic construction of a risk-sharing and dispute-resolution mechanism will contribute to fostering a healthy business environment and promoting the long-term prosperity of the green credit market.

### **5. Conclusion**

One of the key institutional guarantees for promoting the coordinated development of green finance and the "dual carbon" goal lies in establishing a commercial law guarantee mechanism for green credit. This paper presents several suggestions to enhance this mechanism. First, to improve the commercial legal protection system, comprehensive measures should be taken to accelerate the introduction of high-level specialized regulations, clarify existing policies, and define the responsibilities of all parties alongside environmental protection norms. Second, a regulatory system should be established to measure and calculate environmental benefits and ensure their implementation. Third, innovative collateral, such as patents, should be popularized. Furthermore, it is crucial to establish a mortgage structure that fosters collaboration among the government, financial

institutions, and guarantors. In the context of risk transfer and dispute resolution, a comprehensive risk allocation system incorporating financial subsidies and insurance compensation should be developed, thereby enabling a professional green financial mediation channel.

The commercial law guarantee mechanism plays a pivotal role in significantly reducing transaction costs, guiding market behavior, encouraging green investment, and creating a robust institutional framework for the financing activities of new energy enterprises. This, in turn, facilitates the achievement of economic and environmental benefits while advancing low-carbon transformation and sustainable development goals.

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