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# Research on China's Green Insurance Products under the "Dual Carbon Goals"

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## Abstract

**Peak carbon by 2030 and carbon neutrality by 2060 are the "Dual Carbon Goals" officially proposed by China at the 75th session of the United Nations General Assembly in 2020. In order to realize these goals, how the financial industry should play a role in the green field has become the focus of discussion in the academic world. In the report of the 20th Party Congress, General Secretary Xi Jinping proposed to "improve the fiscal, taxation, financial, investment and pricing policies and the standard system to support green development". Green insurance plays an important role in green development and the construction of ecological civilization, and is an important financial tool to promote the development of green economy. In this paper, we start from the existing scale, types, scientific and technological innovation of China's green insurance products, analyze the shortcomings of the existing green insurance products, and put forward corresponding countermeasures and suggestions, in order to better help the realization of the "Dual Carbon Goals" and achieve sustainable development of China's economy.**

## Keywords

**Dual Carbon Goals; Green Insurance; Product Innovation.**

## 1. Introduction

Green insurance, as an important part of green finance, is a collective term for the economic behavior of the insurance industry in providing risk protection and financial support in environmental resource protection, social governance, green industry operation and green life consumption. In the Guiding Opinions on Building a Green Financial System issued by the State Council in 2016, the concept of "developing green insurance" was proposed for the first time. Subsequently, a number of relevant policies, laws and regulations have been issued to actively guide and support the development of green insurance. China's green insurance market has shown a rapid growth trend under the support of the government, and the insured amount of green insurance in 2022 is up to 31.67 trillion yuan, an increase of 26.69% compared with the insured amount in 2021, which is a rapid growth. However, there are still some obstacles that need to be solved in the actual development process, including imperfect policy support, serious information silos, low underwriting capacity and so on. It is hoped that the research in this paper will contribute to the healthy and sustainable development of China's green insurance industry and the successful realization of the "Dual Carbor Goals".

## 2. Literature References

China's green insurance started late, and there is still much room for development. Lu established and Cao Chao (2018) believe that since the "12th Five-Year Plan", the government has attached great importance to the development of green finance, and the development of green credit and green bonds has been in the forefront of the world, but green funds and green insurance are still relatively backward[1] . Liu Jiguang and Huang Xinggang (2023) also suggest

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that the development of green insurance in China is lagging behind, but the development of green insurance in China has a good foundation, with mature policy support and a good market base for the development of green insurance[2] . Zhu Junsheng (2023) points out that the development of green insurance has shortcomings in four aspects: legal and policy protection, single insurance product, high operating costs and difficulties, and challenges of ESG investment of insurance funds[3] . Internationally, developed countries began to pay attention to the development of green insurance at an early stage and accumulated relatively rich experience. Therefore, in the process of promoting the development of green insurance, many experts and scholars have also given their opinions by drawing on foreign experience. Zhang Ruigang and Xie Ruonan (2023) provide a practical path to improve the green insurance system, listing the key points of building a green insurance system, providing ideas such as expanding the scope of insurance coverage, strengthening technological innovation, constructing a multi-principal linkage mechanism, reasonably transferring or dispersing risks, and government guidance and market incentives[4] . Zhang Jianqi and Yan Xiaoyan (2023) analyze the internal and external problems of green insurance industry and put forward the suggestions of green data assetization and green insurance product innovation[5] .

Since there is less data on green insurance in China, previous researchers tend to be too theoretical and lack of practical level guidance. This paper tries to overcome the above defects as much as possible, starting from the real data and cases of green insurance, looking for the key points of problems in the development and giving the corresponding suggestions, in order to help the development of green insurance in China.

## 3. Development Status of Green Insurance Products in China under the "Dual Carbor Goals"

China's green insurance started late, and in the early days, it was mainly based on environmental pollution liability insurance. in August 2016, the "Guiding Opinions on Building a Green Financial System" jointly issued by the People's Bank of China and other seven ministries and commissions stipulated that green insurance would be included in the scope of the green financial system, and only then did it formally put forward the concept of green insurance.

On September 22, 2020, China put forward the "Dual Carbor Goals" of striving to achieve carbon peaking by 2030 and carbon neutrality by 2060, aiming to comprehensively transforml into a green and low-carbon country. Since then, in order to realize the Dual Carbor Goals, the government has continuously issued policies related to the development of green insurance (see Table 1) to promote the healthy and rapid development of China's green insurance industry.

In order to realize that green insurance can be counted and monitored, and to enhance the effectiveness and pertinence of green insurance policy making, the former Banking and Insurance Supervisory Commission (BISC) issued the Circular on Issuance of Statistical System for Green Insurance Business on November 11, 2022, which for the first time clearly defined the definition and statistical caliber of green insurance. Green insurance business mainly includes three major parts, namely green ecologies, green industries and green lives, comprising 14 first-level items and 30 sub-items.

On September 26, 2023, the Insurance Association of China (IAIC) released the Green Insurance Classification Guidelines (2023 Edition), which is the world's first industry self-regulatory norms comprehensively covering green insurance products, green investment of insurance funds, and green operation of insurance companies, to guide the healthy development of the green insurance industry.

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**Table 1.** Relevant policies on green insurance development

| Date | Published by | Name of the document | Highlights |
|---|---|---|---|
| December 2007 | PRC environmental protection agency | Guidance on Liability Insurance for Environmental Pollution | Recognize the significance of accelerating the construction of the environmental liability insurance system. |
| August 2016 | The People's Bank of China and seven other ministries | Guiding Opinions on Building a Green Financial System | The concept of green insurance was formalized and proposals were made for its development. |
| May 2018 | Ministry of Nature and Environment | Administrative Measures for Compulsory Liability Insurance for Environmental Pollution (Draft) | Promote the internal transformation of economic activities into environmental risks and benefits, so that the loopholes in monitoring environmental risks, identifying environmental damage and compensating for damage can be closed, and so that the market instruments for ecological protection can be enriched. |
| May 2019 | Ministry of National Development Reform and Science and Technology | Guiding Opinions on Building a Market-oriented Green Technology Innovation System | Build with green technology to promote ecological civilization and quality development. |
| April 2020 | Standing Committee of the Thirteenth National People's Congress | Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Wastes | Clarify the scope of enterprises that are mandated to take out green insurance |
| February 2021 | State Council (PRC) | Guiding Opinions on Accelerating the Establishment of a Sound Green, Low-Carbon and Circular Development Economic System | To improve the low-carbon and recycling circulation system, including industry, agriculture, services and green environmental protection; and to accelerate green upgrading and promote China's green development to a new level. |
| May 2022 | former China Banking Regulatory Commission (CBRC) | Standardized "14th Five-Year Plan" for the Insurance Industry | To assist the insurance industry in serving the"Dual Carbor Goals", we have made efforts to innovate and develop green products in the field of environmental and climate protection. |
| November 2022 | former China Banking Regulatory Commission (CBRC) | Circular on the Green Insurance Business Statistics System | Clarify the meaning of green insurance and establish a statistical system so that all operations can be carried out in an orderly manner. |
| September 2023 | China Insurance Association (CIA) | Green Insurance Classification Guidelines (2023 Edition) | Based on the specific operational level, standardize green insurance products, green investment of insurance funds, green operation of insurance companies and other businesses. |
| April 2024 | People's Bank of China and other 7 ministries | Guidance on Further Strengthening Financial Support for Green and Low-Carbon Development | Establishment of robust green insurance standards |

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## 3.1. The Scale of Green Insurance Products is Growing Year by Year

According to the data of China Isurance Association, the insured amount of China's green insurance in 2018-2022 is increasing year by year. When China put forward the goals of "Double Carbon" in September 2020, the insured amount of green insurance in China will increase rapidly to 31.67 trillion yuan in 2022, which is 26.69% higher than that in 2021, see Figure 1. The high insurance amount can make the risk protection function effectively realized, which provides support for the development of low-carbon economy and green industry.

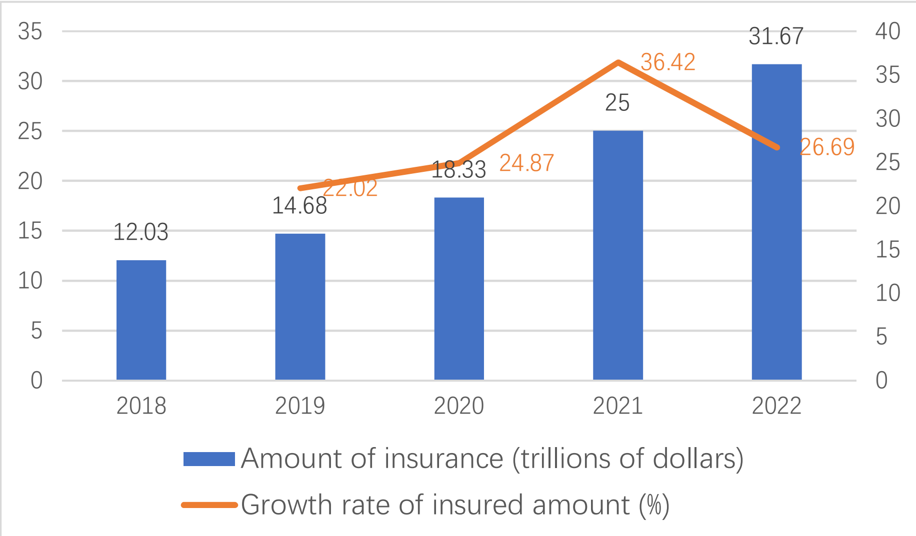


**Figure 1.** 2018-2022 Green Insurance Coverage and Growth Rate

## 3.2. Continuous Innovation of Green Insurance Products

Since China put forward the goals of "Dual Carbon" strategy in 2020, the insurance industry has actively responded to the call of the State to carry out the research and development of green insurance products. Fujian Province started to pilot water quality index liability insurance in Sanming in 2020, with the deterioration of water quality leading to a decline in the water quality index and water quality category as a mechanism to trigger the insurance liability, and as of 2023, it has insured 11 counties under its jurisdiction, covering an area of 15,800 square kilometers of water, and provided risk protection of RMB 255 million.

In addition to the continued development of traditional environmental pollution liability insurance, other innovative green insurance products are also emerging.In April 2021, in Xinluo District, Longyan City, Fujian Province, China Life issued the first forestry carbon sink index insurance in the country, which provided 20 million yuan of coverage for the loss of carbon sinks, and vigorously contributed to the high-quality development of the local ecology.2022 ZJ Insurance implemented the "Near-Zero Carbon Car Insurance" program in Huzhou City, Zhejiang Province, to encourage users to reduce the frequency of driving. Zheshang Insurance implemented the "Near-Zero Carbon Car Insurance" program in Huzhou City, Zhejiang Province, encouraging users to reduce the frequency of driving. 9,930 vehicles were insured under the "Near-Zero Car Insurance" program in 2022, reducing the total mileage by 9.3 million kilometers, which effectively guided vehicle owners to travel green and reduce carbon emissions. In 2022, PICC issued China's first carbon excess emission expense loss insurance for the power generation industry, loss of emission reduction insurance for the monitoring period of GHG voluntary emission reduction projects, and loss of carbon assets insurance for CCS or CCUS projects, which provided carbon asset risk protection for four power generation enterprises and helped them achieve their carbon emission reduction targets. 2023, Ya'an Central Branch of C&C Sichuan Branch and Ya'an Central Branch of C&C Sichuan Branch

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cooperated with the Sichuan Yazhan Branch of C&C Sichuan Branch to provide insurance coverage to four power generation enterprises. In 2023, Ya'an Central Branch of C&C Sichuan held a series of signing ceremonies for "Panda Carbon Sinks" with Baoxing County in Ya'an, Sichuan Province, and successfully implemented the forest carbon sink value insurance business, which provided 6,132,300 RMB of carbon sink value risk protection for 67,000 mu of carbon sinks forests of the State-owned Forestry Protection Bureau of Jiefanshan Mountain in Sichuan Province. The insurance combines panda and forest carbon sinks, filling the blank of forest carbon sinks insurance in Ya'an, which not only provides all-round protection for forest carbon sinks resources, but also provides habitat protection for pandas and maintains biodiversity and ecological security.

China's green insurance products are tailored to local conditions in different regions, considering industrial needs and being supported by policies and promoted by technology application. These synergies have contributed to the benign development of the green insurance market, and have helped China realize its "Dual Carbor Goals".

### 3.3. Green Insurance Digital Transformation

While China's insurance industry is actively promoting green insurance and enriching product types, insurers are also exploring digital transformation.

Insurance companies are actively building the "insurance + service + technology" model, applying advanced technologies such as big data, artificial intelligence, cloud computing and the Internet of Things to the online transformation of operational processes and the intelligent transformation of business, and ultimately realizing the reduction of carbon emissions. Take Ping An General Insurance's forest carbon sinks remote sensing index insurance as an example. By combining domestic and international forest carbon sinks monitoring research and the remote sensing algorithm model developed by Ping An Group to quantitatively measure the growth status and carbon sequestration capacity of forests, Ping An General Insurance takes the amount of changes in carbon sinks as the basis for indemnification and compensation, and on the basis of the traditional forest insurance, provides more comprehensive protection for the forest economy by using the carbon sink index insurance to assist in post-disaster forestry carbon sinks resources rescue and Carbon source removal, cultivation of forest resources, and strengthening of ecological protection and restoration. In addition, with the help of satellite remote sensing technology, Ping An General Insurance can also efficiently monitor changes in forest carbon sinks, provide customers with scientific management advice, and help customers improve the growth rate of carbon sink value. As of June 2022, Ping An Insurance's forest carbon sinks remote sensing index insurance has completed pilot policies in 17 provinces and municipalities, including Hebei and Hunan, with a cumulative premium income of RMB 695,400 yuan, covering an area of 637,000 mu, and providing carbon sinks risk protection of RMB 58,419,000 yuan.

## 4. Problems with China's Green Insurance Products under the"Dual Carbor Goals"

Although the development of green insurance in China has contributed part of its strength to the realization of the Dual Carbor Goals, overall, green insurance is still in its infancy and there are still many deficiencies in its development.

### 4.1. Supporting Policies and Systems Need to Be Improved

At present, China has not yet issued laws and regulations specifically for green insurance, resulting in the lack of a clear legal basis and regulation of green insurance business. On the one hand, there is a blind spot in the supervision of green insurance business, which makes it difficult to effectively prevent and control risks. On the other hand, due to the lack of uniform

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regulatory standards[6], there are large differences in regulatory requirements between different regions and different insurance companies, which also puts pressure on insurance companies and limits the development of the green insurance market.

At the same time, supportive incentives for the development of green insurance are insufficient. For example, the tax incentives for green insurance are not yet very sound. This makes insurance companies unable to fully enjoy tax incentives when carrying out green insurance business, which affects the promotion and development of green insurance. At the same time, due to the lack of tax incentives, the willingness of consumers to buy green insurance products has also been affected[7] .

### 4.2. Information-sharing Mechanisms to Be Enhanced

In the implementation of green insurance products, there is a lack of sufficient data support for innovation and development, rate setting, underwriting and claims handling, and risk management services, as a national or provincial shared database has not yet been fully formed. Green insurance cannot be developed by the insurance industry's own efforts alone. Only by establishing a cross-industry and sectoral collaboration mechanism can the safeguarding role of green insurance be better utilized.

Take new energy vehicles as an example, in the field of new energy vehicles, the development of green insurance is constrained by the problem of data silos. Insurers with insurance qualification and operation capability do not have sufficient data, car companies with sufficient data and big data monitoring platforms do not have insurance qualification and operation capability, and the three parties are deeply trapped in the data wall, which requires all parties to strengthen cooperation, break the data wall and realize data sharing.

### 4.3. Insurance Companies' Underwriting Capacity Needs to Be Improved

On the one hand, green insurance started late, with a lack of basic data. Owing to the small total volume, short years of operation and insufficient data sources, it is difficult to accurately position and grade the probability of risk and the degree of loss in a given industry, which ultimately affects the financial sustainability of insurance companies and makes it difficult for them to underwrite insurance on a large scale.

On the other hand, professional talents are also in short supply. The whole process of green insurance requires the comprehensive use of knowledge in many fields, and the current talent and technology reserves are far from meeting the needs of the development of green insurance. Many insurance organizations are not allowed to "shy away" from green insurance because of the lack of talent and technology. In Guangdong, for example, there are only three organizations qualified to carry out catastrophe insurance business, and only seven organizations can carry out environmental pollution liability insurance. From the distribution of personnel, the head office has concentrated the majority of green insurance professionals, the grassroots organizations have relatively fewer talents[8] . On the other hand, most insurance institutions have developed green insurance for a very short period of time, and lack the accumulation of historical data, and their understanding of the law of risk occurrence is at the stage of crossing the river by groping the stones.

## 5. Development Strategies for Green Insurance Products in China under the "Dual Carbon Targets

### 5.1. Improvement of Supporting Policies and Systems

On the one hand, governments need to strengthen the regulation of the green insurance market, formulate relevant standards and norms, and promote the standardized, transparent and professional development of the green insurance market. Many countries have adopted

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legislative measures to clarify the status and role of green insurance, provide legal protection for the development of green insurance, and promote the development of green insurance. For example, in the field of environmental protection, the introduction of the Ministry of Ecology and Environment's Measures for the Administration of Compulsory Liability Insurance for Environmental Pollution will be a major breakthrough in the environmental liability insurance system, providing a strong legal safeguard for the role of insurance in the governance of environmental risks[9] . However, the Measures have not yet been officially released to the public, and it is recommended that they be put into practice as soon as possible.

On the other hand, the positive incentives for green insurance should be strengthened , for example, through tax incentives to mobilize the enthusiasm of insurance institutions to serve green development. Only with the joint linkage of guidance from government departments and market operation can the motivation and capacity of green insurance services be continuously improved.

### 5.2. Technology-enabled Information Sharing

To build a shared information platform, centered on common construction, common governance and sharing, to promote the integration of information from all parties in the market supply and demand, to facilitate insurance companies to provide accurate services and protection for green projects, and at the same time, to provide the regulatory authorities with dynamic and traceable regulatory data on the whole life cycle of green insurance.

Taking new energy vehicles as an example, compared to traditional fuel vehicles, new energy vehicles are a mobile smart space, and data can be considered its core asset. Utilizing big data and AI technology, insurance companies can more accurately manage the claims process, reduce claims costs, and help achieve carbon neutrality goals. For the characteristics of new energy vehicles, through big data analysis, insurance companies can more accurately identify and prevent fraud and reduce unnecessary claims. This will reduce the operating costs of insurance companies and enhance transparency across the industry.

### 5.3. Continuing to Promote the Cultivation of Human Resources

Improve talent training mechanism. Insurance organizations should start from business assessment, incentive mechanism, talent training and other aspects, and constantly improve their own endogenous momentum in the development of green insurance. Improving the professionalism of the underwriting organization is not only related to the core competitiveness of the enterprise, but also to the social responsibility. Professional underwriters can more accurately assess and manage risks related to the "dual carbon" goal, design more scientific and reasonable insurance products, and provide more comprehensive risk protection for customers. At the same time, through professional services and technical support, underwriters can also help clients realize energy saving and emission reduction and promote the development of green industries.

## 6. Conclusion

In the context of "Dual Carbon Goals", China has a good foundation and market prospects for the development of green insurance. Although some progress has been made, there are still obvious shortcomings in realizing the transition from catching up to leading, which requires the joint efforts of the government, regulators, insurance companies and all sectors of the society to promote the healthy development of China's green insurance industry.

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