

Overall Progress in China's Green Finance Development

In 2015, China initiated the systematic development of its green finance policy framework. Under the overall framework of ecological civilization strategy, green finance became an integral part of financial supply-side reform. It began comprehensive advancement through top-level design, guided by national strategic direction, and the systematic and diversified policy framework became a crucial driving force for the development of green finance.

POLICY DEVELOPMENT

Firstly, the national strategy clearly outlines the direction of green finance development. In 2015, the "Overall Plan for Ecological Civilization System Reform" introduced the concept of "establishing a green financial system" into the national strategy for the first time, offering comprehensive guidelines for various aspects including green lending, capital markets, green development funds, risk mitigation, and obligatory environmental pollution liability insurance systems. The 19th National Congress of the Communist Party of China explicitly emphasized the development of green finance and elevated the construction of a green financial system to the level of a national strategic priority. With the introduction of the dual carbon goals, the development of green finance has accelerated. Top-level designs such as the "Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy" and the "Notice on Issuing the Action Plan for Carbon Peaking before 2030" provide guiding arrangements for green financial system construction, product innovation, international cooperation, and more, strategically setting the tone for the development of green finance.

Secondly, a series of policies have guided the construction of the green financial system. In August 2016, the People's Bank of China, together with seven other ministries, jointly issued the "Guiding Opinions for Establishing the Green Financial System" (referred to as the "Guiding Opinions" below). These opinions played a leading role in the systematic development of the green financial system, serving as the guiding document for establishing the essential components of the green financial system. The "Guiding Opinions" outlined the direction of green finance development, encompassing areas such as green loans, green bonds, green stocks, green funds, green insurance, and various financing tools for environmental rights and interests.

Thirdly, the green finance standard system is gradually being established. The standard system provides the technical support for green finance. In 2018, the People's Bank of China led the initiative to launch the green finance standardization project. This project comprehensively researched and developed standards around various aspects of green finance, including general foundational standards, green financial product standards, green credit rating and assessment standards, disclosure standards, statistical and sharing standards, as well as risk management and assurance standards. The construction of the green finance standard system proceeded systematically in line with the principles of "domestic consistency, international alignment, and clarity of execution."



The construction of the green finance standard system proceeded systematically in line with the principles of "domestic consistency, international alignment, and clarity of execution." One notable achievement was the significant breakthrough in establishing general foundational standards for green finance. Following the release of the "Green Finance Terminology" by the People's Bank of China, in 2019, seven departments including the National Development and Reform Commission issued the "Green Industry Guideline Catalog (2019 version)." Significant progress has been made in green finance products and statistical standards. Building upon the industry catalog, the China Banking and Insurance Regulatory Commission (CBIRC) and the People's Bank of China further refined the statistical and classification standards for green loans and green bonds. They successively revised and issued notifications such as "Notice on Revising the Special Statistical System for Green Loans," "Green Financing Statistical System," "Green Bond Endorsed Project Catalogue (2021 edition)," "Notice on Clarifying Mechanisms Related to Carbon Neutrality Bonds Evaluation standards for green finance institutions saw enhancements as well.

In 2018, the "Green Banking Evaluation Programme for China's Banking Sector" was introduced, and in 2021, the People's Bank of China released the "Green Finance Evaluation Plan." These initiatives represented comprehensive assessments of green finance within the banking industry and financial institutions. "Environmental Rights Financing Tools," and "Carbon Financial Products" standards. The standards for disclosing environmental information in green finance continued to improve. In July 2021, the People's Bank of China formally issued the "Financial Institutions' Environmental Information Disclosure Guidelines" as an industry-standard document. This set of guidelines provided recommendations for the content of disclosures, encompassing aspects such as governance structure, policy frameworks, innovations in products and services, risk management, quantification of risks, environmental impact, and other relevant areas. Local green finance standards are steadily emerging and evolving within regions designated for green finance reform. These pilot zones, including locations like Huzhou, Quzhou, Guangzhou's Huadu District, Ganjiang New Area, and Gui'an New Area, have actively promoted the growth of green finance, continuously issuing and refining their respective regional green finance standards.

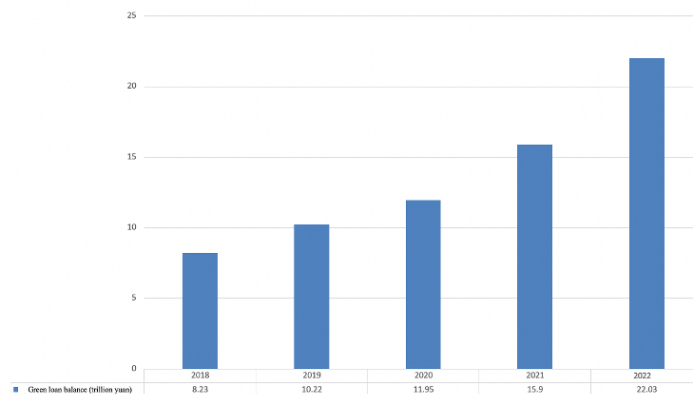


Figure 1. Statistics of China's Green Loan balance (2018-2022)
Source: People's Bank of China

In the sphere of green bonds, China has aligned its green bond standards with international norms, continuously innovating in types, and emerged as the leading issuer worldwide. [3] As of the end of 2022, the total outstanding volume of green bonds in China reached 2.78 trillion yuan, with a new issuance volume of 8746.58 billion yuan, marking a year-on-year growth of 44.04%. This accounted for 88.90% of the total new issuance volume of green bonds both domestically and abroad. The number of issuances reached 521, reflecting a year-on-year increase of 7.46%, constituting 91.73% of the total new issuances of green bonds domestically and abroad. Green bonds issued within China have evolved into a substantial avenue for direct green finance, playing a pivotal role in broadening the spectrum of investment and financing avenues for eco-friendly initiatives and expediting the shift toward a green, low-carbon economy in the country. Regarding the sectors they back, green bonds have consistently prioritized fields like the clean energy sector and the enhancement of environmentally sustainable infrastructure, with clean energy industries receiving 30.34% of the funding allocation and infrastructure green upgrades receiving 16.14% in 2022. **Furthermore, the scope of specialized green bond categories is continuously expanding.** In 2022, the new issuance volume of carbon-neutral bonds in China reached 212.56 billion yuan, constituting 32.14% of the total new issuance volume of regular green bonds within the country. There were 132 issuances, accounting for 33.25% of the total new issuances of regular green bonds domestically. As of the end of 2022, the accumulated scale of carbon-neutral bonds within China was approximately 400 billion yuan. In 2022, the new issuance volume of blue bonds in China amounted to 11.47 billion yuan, making up 82.90% of the total. There were 17 issuances, with 15 of them being domestic blue bonds, contributing to 88.24% of the total new issuances. As of the end of 2022, the accumulated scale of blue bonds within China was approximately 13 billion yuan.

In particular, in response to the economic development demands for transitioning high-carbon industries, innovative bonds like low-carbon transition bonds, transition bonds, and transition-linked bonds were introduced in 2022 to broaden the financing avenues available for corporate low-carbon transformation initiatives. In 2022, China witnessed a total of 10 issuances of transition bonds, amounting to a cumulative issuance volume of 49.30 billion yuan. Concerning the allocation of raised funds, these transition bonds were earmarked for projects associated with industrial low-carbon transformation and the comprehensive clean utilization of coal resources.

MARKET DEVELOPMENT

From a market perspective, green loans and green bonds are the primary drivers of China's green finance development. Green insurance, green trusts, green Public-Private Partnerships (PPP), green funds, and similar initiatives are in the initial phases of their development, while carbon finance is just beginning to emerge.

China has been at the forefront of green loans, experiencing rapid growth and achieving the highest issuance volume globally. Over the past few years, China has consistently seen an upward trend in its green loan [1] balance. According to the loan allocation statistics report published by the central bank, as of the end of 2022, the balance of domestic and foreign currency green loans in China reached 22.03 trillion yuan, outpacing the growth rate of various types of loans by 28.1 percentage points, marking a year-on-year growth of 38.5%. This represents a staggering 167.68% increase in green loan balance compared to 2018. Among these loans, those designated for projects directly contributing to carbon reduction reached 8.62 trillion yuan, while those with indirect carbon reduction benefits amounted to 6.08 trillion yuan, constituting a combined total of 66.7% of all green loans. [2] In terms of their utilization, green loans are predominantly channeled into industries associated with upgrading green infrastructure, advancing clean energy initiatives, and promoting energy conservation and environmental protection. The respective balances for these sectors are 9.82 trillion yuan, 5.68 trillion yuan, and 3.08 trillion yuan. In the realm of product diversification, a variety of financial institutions have engaged in extensive and innovative strategies. Specialized green loan products, including but not limited to "environmental conservation loans," "water conservation loans," "solar energy loans," "Volatile Organic Compounds (VOCs) emission reduction enterprise loans," "green factory star-rated loans," and "carbon reduction inclusive loans," have surfaced as pivotal mechanisms facilitating the advancement of environmentally sustainable development.

Furthermore, in 2022, China saw four issuances of low-carbon transition corporate bonds within the nation, with a combined issuance volume of 2.7 billion yuan. These low-carbon transition bonds predominantly financed projects related to industrial low-carbon transformation and the adoption of clean energy solutions. In 2022, China witnessed the issuance of a collective 19 low-carbon transition-linked bonds within its borders, amassing a total issuance volume of 223.90 billion yuan. In terms of the key performance indicators (KPIs) employed in these bonds, the predominant emphasis was placed on clean energy installed capacity, constituting a substantial portion of the issuance volume at 110 billion yuan. In 2022, China also experienced 33 domestic issuances of sustainability-linked bonds, cumulatively reaching an issuance volume of 389 billion yuan. These bonds predominantly revolved around the metric of clean energy installed capacity, representing a substantial portion of the total issuance volume at 85 billion yuan. Certain enterprises also incorporated key performance indicators encompassing metrics such as completed green building area, comprehensive energy consumption per unit of steel, per unit product energy consumption within the chemical industry sector, the annual comprehensive utilization rate of mining tailings, and the rate of methane extraction and utilization. Moreover, in 2022, a combined total of ten sustainable development bonds were issued, spanning both domestic and international markets, accumulating to a total issuance volume of approximately 437.32 billion yuan. This comprised nine international sustainable development bonds, collectively accounting for an issuance volume of 422.32 billion yuan, alongside one domestic sustainable development bond with an issuance volume of 15 billion yuan. By the conclusion of 2022, the aggregated magnitude of sustainable development bonds within China, encompassing both domestic and international issuances, reached approximately 77.048 billion yuan.

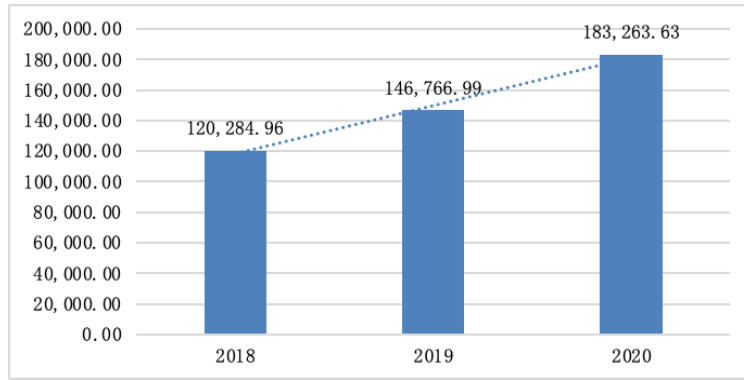


Figure 4. Trend of Green Insurance Coverage Amount from 2018 to 2020 (billion yuan)

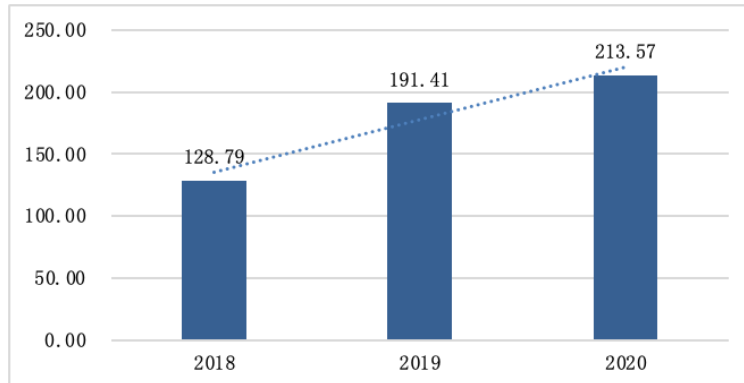


Figure 5. Trend of Green Insurance Claims Payout from 2018 to 2020 (billion yuan)
Data Source: Insurance Association of China

In the realm of green insurance, between 2018 and 2020, the insurance industry collectively provided 45.03 trillion yuan in green insurance coverage to society. During this period, they disbursed claims totaling 53.377 billion yuan, effectively showcasing the risk mitigation capabilities of green insurance. In 2020, the aggregate green insurance coverage amounted to 18.33 trillion yuan, signifying a remarkable increase of 6.30 trillion yuan in comparison to the figures from 2018. This growth reflects an average annual expansion rate of 23.43%. In the same year, green insurance claims reached a total of 213.57 billion yuan, an increase of 84.78 billion yuan over the 2018 figures, with an average annual growth rate of 28.77%. Importantly, this growth rate surpassed the average annual premium growth rate by 6.81 percentage points, underscoring the sector's dynamic and flourishing trajectory. In recent times, the green insurance sector has been witnessing a steady stream of innovative insurance products, fostering synergies between environmental enhancement and various aspects such as disaster prevention, pollution reduction, and carbon mitigation. Notable examples of insurance products geared toward promoting "environmental enhancement" include those covering the green carbon market price index, forest land mortgages, and protection for ancient trees. In the category of "disaster prevention," offerings encompass public liability insurance for natural disasters, comprehensive insurance for high-standard agriculture, and insurance for small-scale water conservation facilities. To encourage "pollution reduction," there are insurance products designed for ship pollution liability and water quality protection. Lastly, in the domain of "carbon mitigation," insurance products include mandatory liability coverage for safety production in eight high-risk industries, insurance to address potential construction defects that enable the green transformation of the construction sector, and insurance for green vehicles.

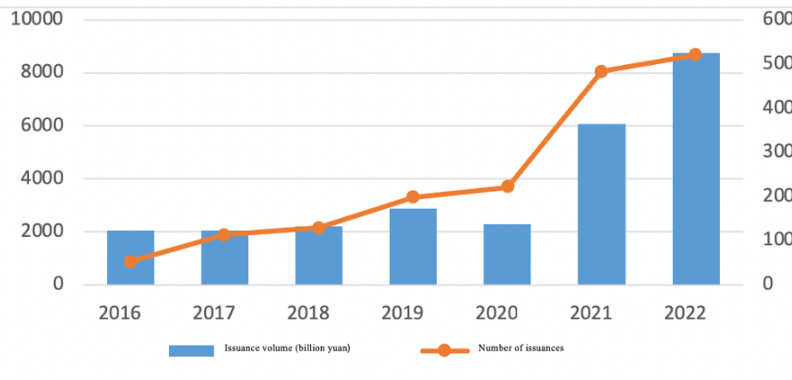


Figure 2. Statistics on the Issuance Volume and Number of Domestic Green Bonds from 2016 to 2022

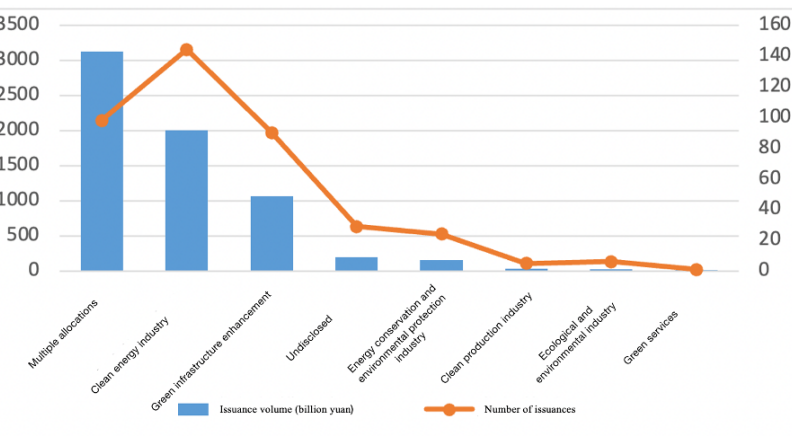


Figure 3: 2022 Allocation of Funds Raised by Domestic Regular Green Bonds
Source: Green Bond Database of the International Institute of Green Finance, CUFU

China has seen significant progress in the early stages of developing Green Public-Private Partnerships (PPP) due to the growing demand for substantial green infrastructure projects aimed at achieving carbon peak and carbon neutrality. By the end of 2021, there were a total of 5,919 projects focused on pollution control and green low-carbon initiatives, collectively attracting an investment of 5.7 trillion yuan. These projects constituted a substantial portion, accounting for 35.2%, of all PPP projects. In 2021 alone, 346 new pollution control and green low-carbon projects were initiated, attracting a total investment of 313.5 billion yuan, thereby bringing the cumulative total to 659 projects.

The idea of green trust is steadily gaining recognition and remains resilient amid a fluctuating upward trend. The trust industry in China faced ongoing challenges in financing and channel-related activities, leading to two fluctuations in the scale of green trust businesses in 2016 and 2018. However, from 2013 to 2020, the overall trend for the scale of green trust assets and the number of green projects showed a fluctuating upward pattern. In 2021, there was a noticeable decline in the development of green trust in China. As of the end of 2021, the total assets of green trust amounted to 3317.05 billion yuan, marking a 607.52% increase compared to 2013, but a 7.68% decrease year-on-year. The number of ongoing green trust projects in the trust industry reached 665, showing a 170.33% increase since 2013 but a 25.11% decrease year-on-year. In 2021, there were 280 new green trust projects added, contributing to an increase of 1411.00 billion yuan in the green trust's total assets. [4]

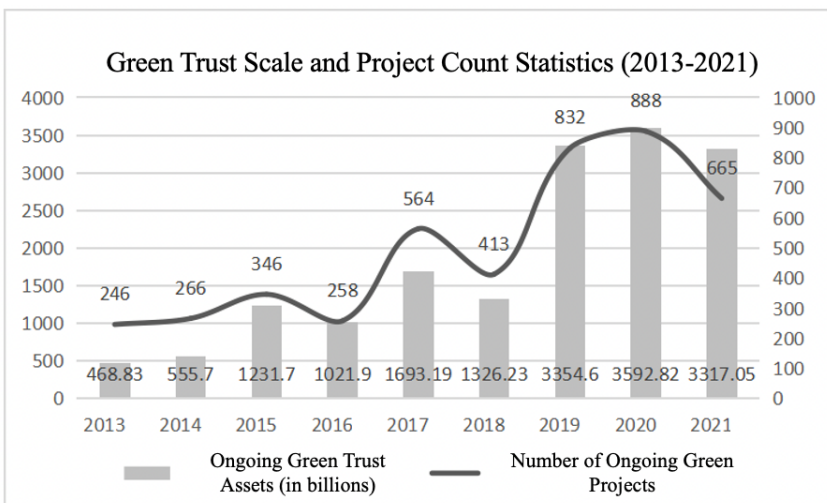


Figure 6. Green Trust Scale and Project Count Statistics (2013-2021)
Source: China Trustee Association

Regarding green funds, by the latter half of 2021, data, while not comprehensive, indicates that over 50 fund management firms have established a presence in the green investment sector. Notably, companies like E Fund Management, Penghua Fund Management, China Universal Asset Management, Huaxia Fund Management, ICBC Credit Suisse Asset Management, China Construction Bank Asset Management, and Invesco Great Wall Fund Management have demonstrated significant commitment to this field. According to statistics from the Asset Management Association of China, as of the end of June 2022, there were a total of 1,178 public and private investment funds focusing on green, sustainable, and ESG investments, with a combined total asset size of 882.1 billion yuan. This represents a 34% growth in assets compared to the end of 2020. Among these funds, there were approximately 242 public investment funds with assets exceeding 442 billion yuan, and 936 private investment funds with assets exceeding 400 billion yuan. The equity venture capital funds accounted for more than 90% of the total assets.

In July 2022, China launched its first batch of 8 Carbon-Neutral ETFs, with these products primarily investing in stock portfolios related to "deep decarbonization" and "high carbon emission reduction." In addition to the rapid development of green securities investment funds, green industry funds have also gained traction in recent years. Green industry guidance funds primarily focus on directing social capital towards industries, projects, and technologies that hold significant relevance for green development. At the national level, there has been the establishment of the Green Development Fund, initiated jointly by the Ministry of Finance, the Ministry of Ecology and Environment, and the city of Shanghai. This fund concentrates on investments in areas such as pollution control, ecological restoration, land greening, efficient utilization of energy resources, green transportation, and clean energy. On July 15, 2020, the National Green Development Fund was officially launched in Shanghai, with an initial fundraising target of 88.5 billion yuan. At the local level, various levels of government have been establishing green development funds to provide financial support for local green industries. In January 2023, the Sichuan Provincial Green Low-Carbon Advantaged Industry Fund, with an initial scale of 100 billion yuan and a total size of 300 billion yuan, officially commenced its operations. It follows a "government guidance + market operation" model and focuses on supporting industries such as clean energy, power batteries, monocrystalline silicon photovoltaics, vanadium-titanium, storage and environmental protection technologies, green materials, environmental remediation, and resource recycling.

In the context of carbon market, the National Carbon Emissions Trading Market, also known as the "national carbon market," was officially opened on July 16, 2021. This launch marked the beginning of the inaugural compliance period, spanning from January 1, 2021, to December 31, 2021. The initial group comprised 2,162 significant emissions units from the power generation sector, encompassing around 4.5 billion tons of carbon dioxide emissions. This established it as the world's largest carbon market in terms of the volume of emissions it covered. By the compliance deadline, these key emissions units achieved an impressive initial compliance rate of 99.5%, successfully concluding the first compliance period. In 2021, China's pilot carbon markets witnessed a notable decrease in the overall trading volume. Nevertheless, due to the continued increase in carbon prices in certain pilot programs, the total transaction value continued to rise. After the official commencement of the National Carbon Emissions Trading Market, several pilot carbon markets have implemented measures to avoid overlapping regulations with the national market. According to statistics from the Shanghai Environment and Energy Exchange as of the conclusion of 2022, the overall trading volume for carbon emission allowances in the national carbon market amounted to approximately 230 million tons, with a total transaction value of around 10.4 billion yuan. More than half of the key emission units engaged in trading activities, demonstrating that the market has been operating smoothly and systematically.

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REFERENCES/FOOTNOTES

[1] Green loans are loans offered by financial institutions to promote economic endeavors focused on enhancing the environment, addressing climate change, and optimizing resource utilization. These loans are available to corporations, organizations permitted by national regulations, and eligible individuals and are earmarked for investments in sectors like energy conservation, environmental preservation, eco-friendly production, renewable energy, ecological conservation, upgrades to sustainable infrastructure, and services supporting environmental sustainability.

[2] Direct carbon reduction benefits are achieved by controlling carbon dioxide emissions from industrial sectors, while indirect carbon reduction benefits are realized through enhancing carbon dioxide absorption and utilization in forests.

[3] The Climate Bonds Initiative (CBI) and the China Central Depository & Clearing Co., Ltd. (CCDC) have jointly compiled the sixth annual report on the Chinese Green Bond Market titled "China Green Bond Market annual Report 2021."

[4] Statistical Data from the China Trustee Association.