

Original Paper

Research on Policy for Finance Supporting the Development of Green Industry—A Case Study of Chongqing in China

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Abstract

The Chinese government has put forward the national strategy of protecting the Yangtze River in 2016, deeply promoted the protection and restoration of the ecological environment of the Yangtze River. Chongqing being the last gateway of the ecological barrier in the upper reaches of the Yangtze River plays an important role in promoting the green development of the Yangtze River Economic Belt, because it is located in the hinterland of the Three Gorges Reservoir Area. This paper concludes firstly that SMEs in green industry face serious financing constraints, and there are some problems in the development of green industry and green finance by investigating on the spot the green industry enterprises and financial institutions in Chongqing. Then, it expounds the functional mechanism of financial policy on green industry development. Finally, based on the actual situation of Chongqing, this paper puts forward policy recommendations to promote the development of green industry, which may provide decision-making reference for other regions to formulate the policies on green industry development.

Keywords

green finance, green industry, green development, policy

1. Introduction

As the trend of the times, green development is the development mode of China's economic transformation and the focus of promoting high-quality development. Green development is also an important foothold to fulfill China's commitment to human and world development, and to coordinate the strategic overall situation of realizing the great rejuvenation of the Chinese nation and the unprecedented changes in a century.

As one of the municipalities directly under the Central Government with sound economic development in China, Chongqing being in the upper reaches of the Yangtze River and the hinterland of the Three Gorges Reservoir Area is an important strategic fulcrum for the Western Development and the Yangtze River Economic Belt. It plays an important role in the national green development strategy of the Yangtze River Economic Belt. In April 2019, when President Xi visited Chongqing, he asked Chongqing to play an exemplary role in promoting the green development of the Yangtze River Economic Belt. In recent years, Chongqing has made certain achievements in the development of green industry, however, there are still many problems, whose majority is the insufficient development of high-quality green industries. The important reason behind this is that there are serious financing constraints in green industry enterprises.

As a fund management method that can combine economic benefits with environmental protection, green finance can mobilize bank funds, social funds and private capital into the green industry (Peterson, 2021), so plays an important role in promoting the development of green industries (Parvadavardini & Nagarajan, 2016). To promote the development of green industry, it should coordinate the power of the government and the market. At present, China has established seven pilot zones for green finance reform and innovation in Zhejiang, Jiangxi, Guangdong, Guizhou, Xinjiang, Gansu and Chongqing. Chongqing is building the all-in-one pilot zone for green finance reform and innovation and exploring the effective path of financial support for high-quality development of regional economy, and sets an example for the financial boost of the green and low-carbon development of the Yangtze River Economic Belt and even the national economy.

Green industry development has become the key for developing countries to cope with climate change, whose quality and speed are closely related to financial support. So, it is particularly important to study how to facilitate financial service for the development needs of green industries. The paper attempts to explore this subject by taking Chongqing as the research case, and the innovative point is mainly reflected in two aspects: (1) analyzing problems existing in the development of green industry and the financing difficulties faced by green industry enterprises in Chongqing through interview and field research; (2) expounding the functional mechanism of financial policy on green industry development, and putting forward relevant policy suggestions based on local conditions, which may provide reference for other regions to formulate policies to support the development of green industries.

2. Development Status, Existing problems and Financing Difficulties of Green Industry in Chongqing

2.1 Development Status of Green Industry in Chongqing

From 2016 to 2020, Chongqing promoted the green development strategy, adopted cleaner production, reduced raw materials and energy consumption, and advocated the formation of a low-carbon and economical consumption pattern and lifestyle.

(1) From the perspective of industrial economy, Chongqing also begins to show the typical

characteristics of post-industrial cities: In 2019, the proportion of the secondary industry in the CITY's GDP dropped to 40.23% (44.97% in 2015), and the tertiary industry developed rapidly, contributing 59.25% to the city's economic growth; high-tech and strategic emerging industries developed steadily and healthily, contributing 34.8% and 42.1% to the city's industrial economic growth respectively¹.

(2) The effect of ecological environment governance is remarkable. In 2019, the overall water quality of the city's surface water was good, and that of the Chongqing section of the main stream of the Yangtze River remained excellent. In 2019, the number of days with good air quality reached 316 days, of which 119 days were excellent, an increase of 23 days year-on-year, the best level since the implementation of the new air quality standard in 2013. It has treated and repaired 155,000 cubic meters of contaminated soil, provided a net land area of 2.08 million cubic meters, and the soil environmental quality is generally stable.

(3) The green industry has a certain scale. According to the Chongqing Environmental Protection Industry Association (CEPTA), the revenue of the city's three industries - energy conservation, environmental protection and comprehensive resource utilization - reached 90.9 billion yuan in 2018, up 21% from 2017, with 12.5 billion yuan in profit and 3.8 billion yuan in tax revenue.

(4) Green industry enterprises are mainly small and medium-sized enterprises (SMEs). From the perspective of green industry enterprise structure, according to the investigation of CEPTA in 2019, there were about 1,500 enterprises in the energy conservation, environmental protection and comprehensive utilization of resources in Chongqing, mainly SMEs and private enterprises, of which only 101 were established for more than 20 years. It can be concluded that most green industry enterprises in Chongqing are SMEs in the growth stage, so supporting SMEs' development can produce significant environmental benefits.

2.2 Problems Existing in the Development of Green Industry in Chongqing

(1) The state of industrial structure is unreasonable. Chongqing's green industries are mainly concentrated in the fields of hydropower, urban rail transit, solid waste recycling and utilization, and sewage treatment, and their development is still relatively weak. The traditional resource-based and labor-intensive industries in the district are in the majority, the problems of "high input, high consumption, high emissions, low efficiency (referred to as three high and one low)" and overcapacity are still serious, and the industrial innovation capacity is insufficient. Therefore, the district has shortcomings in attracting industrial talents, supporting innovative talents and other fields, and the bottleneck of green development system is obvious.

(2) The resource market mechanism is not sound. The degree of marketization of sewage treatment projects in each district is low, and the phenomenon of industry monopoly and administrative intervention exists to a certain extent. The quota and price of natural gas are dominated by the upstream side, and there is no rationing and market pricing mechanism.

(3) The green upgrading of industrial parks is insufficient. For the stock industrial park, there is no further promotion of industrial circular links, intensive land use, recycling of water resources,

comprehensive utilization of waste, infrastructure sharing and the construction of multi-energy complementary distributed energy supply system. For the new industrial park, the green comprehensive evaluation is not set as a negative condition in the examination and approval process, and fails to urge the park to fully implement the concept of green development in the aspects of planning and layout, industrial coupling, infrastructure construction and so on.

(4) The environmental protection information disclosure system is not sound. The existing credit information system of the People's Bank of China can only obtain the environmental protection information of a small number of enterprises, but it is difficult to obtain illegal information such as environmental penalties for most non-listed companies and enterprises and projects that do not belong to the scope of national monitoring. In addition, many enterprises take concealment or misrepresentation of their own environmental information to evade environmental responsibility.

2.3 Financing Difficulties of Green Industry in Chongqing

20 enterprises were randomly selected from the list of green credit enterprises of banks in Chongqing², and the sample enterprises are involved in environmental pollution control, sewage treatment, solid waste recycling and utilization, new energy, ecological agriculture, new materials, green manufacturing and other industries, and some of which are recognized as high-tech enterprises. Through in-depth exchanges with senior management personnel of enterprises and managers of financial institutions, it is found that the state-owned enterprises and their projects have strong bargaining power in financing, whose loan scale, interest rate, bond underwriting and asset custody are all preferred objects of support by various financial institutions, and there is no financing constraint problem, while SMEs (mainly private enterprises) face serious financing constraints in their development, as are shown in the following.

(1) It is difficult to obtain sufficient financing from traditional channels such as banks. On the one hand, enterprises lack stable cash flow, mortgageable assets and non-standard corporate governance; On the other hand, the investment cycle of most green projects is long (some are as long as 5-10 years), the information of enterprise project orders or engineering contracts is not transparent, and the mismatch of financing term makes the financing of green SMEs obviously insufficient. According to statistics, the surveyed enterprises have a large financing gap in working capital, letter of guarantee, engineering projects, R&D investment, market promotion and other aspects recently, and the financing demand (including bank loans, equity investment, green bonds to be issued, etc.) will reach 966 million yuan (As shown in Figure 1).

(2) There are great difficulties in obtaining financing through private equity funds. Green industry is characterized by low project yield, limited market size, immature business model and long return period, which is quite different from the investment preference of private equity institutions, making PE/VC have no strong investment intention. According to the survey, SMEs are generally willing to involve funds from private equity investment institutions. In particular, green technology innovation enterprises in the start-up and growth stage are in urgent need of venture capital support, hoping that

government departments could guide them through industrial funds.

(3) Lack of support from policy-based financing guarantee institutions. At present, the local state-owned guarantee companies in Chongqing are all commercial guarantee companies, and the investment authorities and the companies themselves have high requirements on operational risks and profitability, so their business mainly focuses on financing guarantee of state-owned platform companies, state-owned enterprises and large enterprises, and they have little interest in SMEs' financing business. In addition, in terms of agricultural guarantee, there are also problems such as high guarantee rate (2.5%), small amount of guarantee (usually 500,000 yuan is the upper limit), and harsh approval terms.

(4) The bond market channel needs to be further opened up. Judging from the issuance of green enterprise (project) bonds in Chongqing, the main issuers are banks and large or state-owned enterprises. The participation of private enterprises is obviously insufficient, limited by indicators such as development scale, profitability, and issuance costs, and SMEs have not participated issuing green bond. In the future, local governments could set up a special fund for green bond guarantees to explore green collective bonds for SMEs.

(5) The development of green financial service intermediary system is relatively lagging behind green financial business. At present, most of the professional service institutions in Chongqing have not been involved in the field of green financial services, and other intermediary service institutions such as environmental damage identification and assessment institutions, environmental risk assessment institutions and green bond evaluation institutions have developed slowly. Local enterprises generally seek large-scale evaluation institutions from other place recognized by financial institutions. For SMEs, it is difficult to pay high intermediary fees, and foreign large-scale evaluation institutions have no time to consider these small-scale businesses.

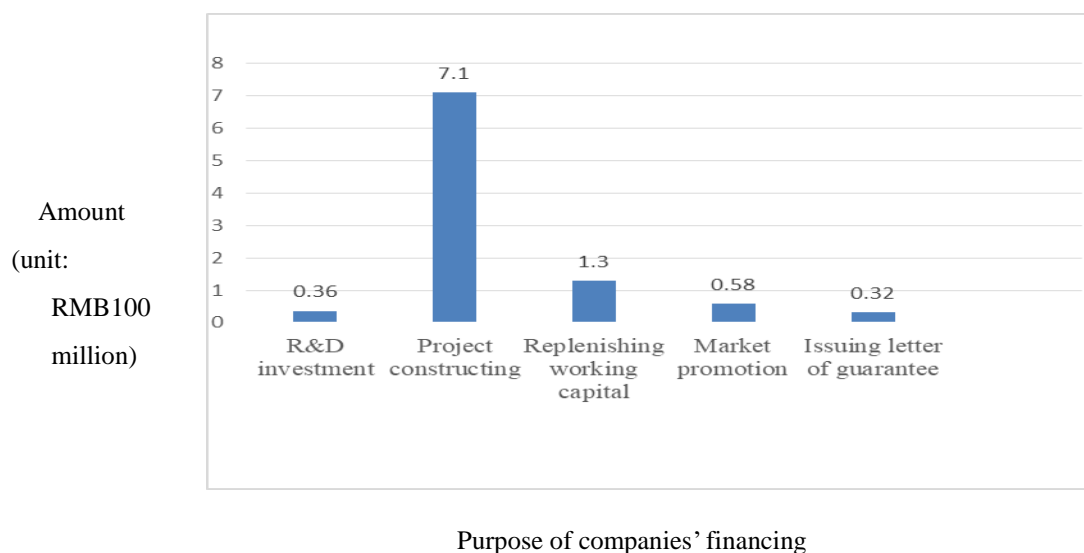


Figure 1. Financing Demand and Purpose of the Sample Companies

3. Functional Mechanism of Financial Policy on Green Industry Development

The effect of financial policy on the development of green industry is different from the “command-control” mechanism directly regulated by the government, but guides financial resources to the field of environmental protection and sustainable development through the role of market mechanism to make up for the market failure of resource allocation in the ecological environment (Research Group on the Green Finance Development Path of Shanghai, 2017), thus realizing the internalization of environmental externalities and benefits, and improving the welfare level of the whole society (Coase, 1960). The subjects involved in the green financial system include: the government, banks and non-bank financial institutions, enterprises, and the public. Green financial policies mainly have the effect of capital agglomeration, resource allocation and industrial integration on the development of green industries (G20 Green Finance Study Group, 2016). Specifically, the government guides financial institutions through economic incentive policies to evaluate risks, costs and benefits of green industry, then issues green financial products such as green credit, green bonds, and directs social capital and corporate investment to resource-saving and environment-friendly projects, and drives private capital to invest in green project construction, providing favorable market conditions for the development of green industries, allowing more companies to join the industry, along with the transfer of intangible asset elements such as brands, patents and technologies to exert synergistic integration effect; On the enterprise side, when the financing cost of green enterprises (projects) is reduced and financing is more convenient, the cash flow and asset scale of the enterprise will increase, which will enhance the investment and output capacity of the enterprise. On the other hand, when environmental costs are included in resource prices, companies with “three highs and one low” face greater constraints and increased costs in financing, forcing those companies to adopt clean energy and upgrade technologies, thereby promoting the development and upgrading of green industries (As shown in Figure 2).

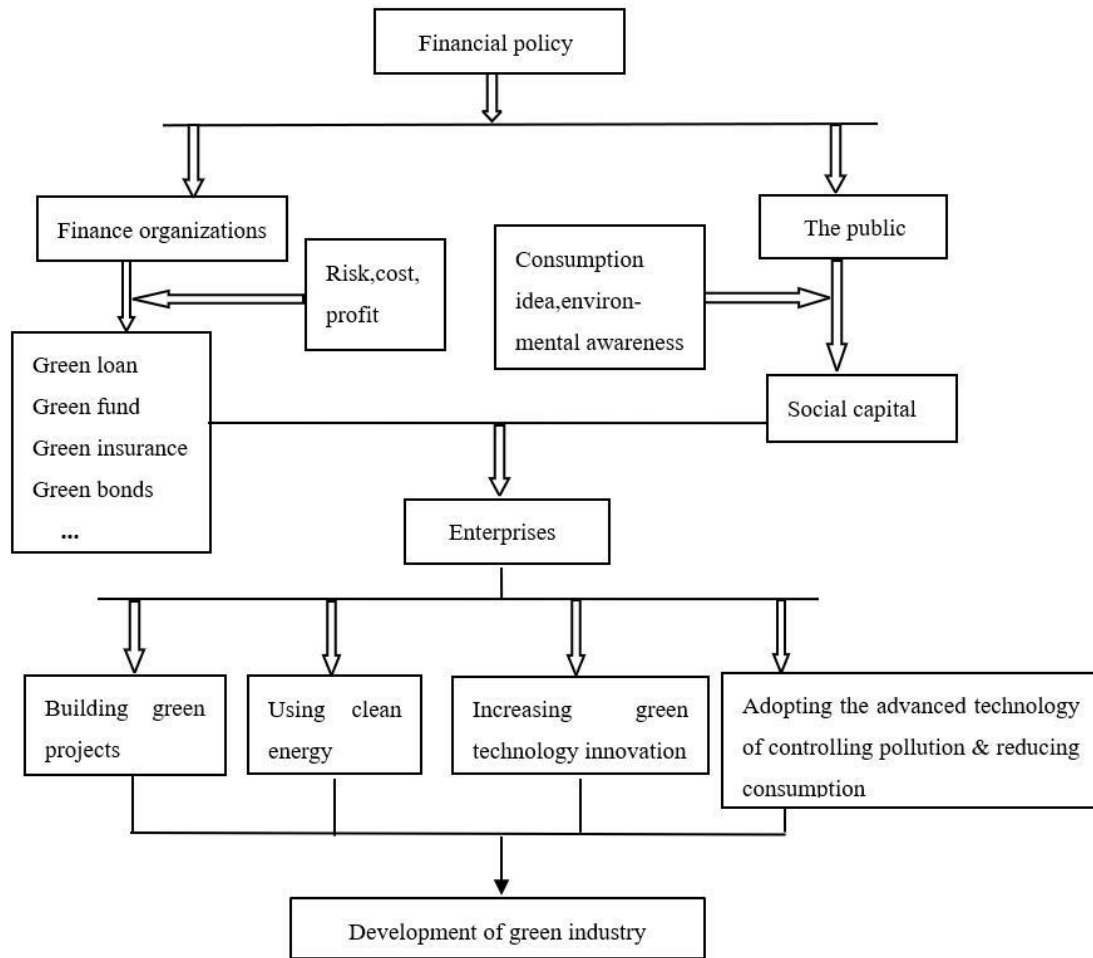


Figure 2. Sketch Map of Action Mechanism of Financial Policy upon Green Industry Development

4. Policy Recommendations for the Finance Supporting the Development of Green Industry in Chongqing

Finance is the core of modern economy and the hub of resource allocation. The sustainable development of economy, society and environment needs the support of green finance and policy as mentioned above. However, the development of green finance requires not only policies on its external supporting facilities, but also policies on the development of green finance itself. By referring to green finance policies and experience at home and abroad, combined with Chongqing’s specific industrial structure, technological level characteristics and economic development goals, specific policy recommendations are put forward as follows.

4.1 Increase the Construction of Soft and Hard Infrastructure and Consolidate the Support for the Development of Green Finance

(1) Expanding the “Yangtze River Green Finance Connect” Green Finance Big Data Comprehensive Service System. To integrate the functional modules such as green enterprise / project declaration,

third-party green certification, green financing docking, green enterprise / project display, financial product display, policy support, green industry incubation and cultivation, environmental rights and interests development, enterprise environmental credit evaluation (including administrative penalty information), green financial data statistics and analysis, etc. in the system, so as to open up green information exchange channels among the government, financial institutions and enterprises, and achieve green financing data integration, real-time monitoring and efficient agile financing docking.

(2) Developing green financial technology. Make full use of the platform of the Chongqing Branch of the National Industrial big data Center, and use cloud computing, machine learning and other technical means to gather big data resources, which are difficult for traditional financial institutions to obtain, dock with the Yangtze River Green financing system, strengthen information sharing, and provide decision support for financial institutions in green project financing, asset pricing, resource allocation and risk management.

(3) Improving green industry development parks. According to the resource factor endowment of each district and county, give play to their comparative advantages, plan and build green industrial parks, and guide the agglomeration and development of green manufacturing, green building, ecological agriculture and forestry, green service industry, new energy vehicles, power batteries, charging equipment and other supporting industries in each district. For example, in the southeast and northeast of Chongqing, where forest resources are rich and green organic agriculture and eco-tourism are relatively developed, green agricultural products deep processing industrial parks can be established to organically integrate ecological construction with industrial development and rural vitalization.

(4) Supporting the development of green financial intermediary service institutions. For green financial intermediary service institutions that are qualified to participate in national financial market business such as recommendation, rating, consulting, trading, etc., or whose services are recognized by national financial market entities, according to its first paid-in capital, a certain proportion of one-time incentive subsidies will be given, and the subsequent annual subsidy will be given an appropriate amount according to its tax payment. Promote the establishment of a linkage mechanism between green certification and credit rating, combine third-party green certification, external credit rating and internal rating of green companies and projects by financial institutions, and adopt one-station service process to reduce the certification cost of green companies and projects.

4.2 Perfect the Green Financial System, Establish and Improve the Green Financial Market Mechanism

(1) Building a western green technology bank. At present, Chongqing is building a western science city, and it will gather rich scientific and technological elements and innovative resources in the future. Scientific and technological Innovation is the key support and sustainable power to promote the development of green industry. Green technology bank is a sci-tech finance innovative organization engaged in the assessment, storage, value-added, transfer and transformation of green technology and providing overall financial solutions, and is an experimental field for the construction of a

market-oriented green technology innovation system and a mechanism for the transfer and transformation of scientific and technological achievements (Zhang ,2020). It is suggested that under the leadership of the municipal financial work leading group, the related government departments should be coordinated to jointly promote the landing and development of green technology banks in Chongqing.

(2) Supporting bank to set up the institutions specialized in green finance. By Learning from the experience of green financial reform pilot areas such as Guangzhou, Jiangxi, Huzhou, Zhejiang, etc., it should support bank to set up green branches, green financial innovation centers or green financial business departments; implement the operating mechanisms such as separate credit plan, separate business accounting assessment, green project credit whole process evaluation system, green financial customer manager team system and so on; carry out the annual evaluation of green branch and reward the advanced ones and bring the evaluation into the bidding scoring system for competitive storage of financial funds.

(3) Making great efforts to train green financial talents. It is suggested to formulate and implement a special work plan for green financial talents, and take the backbone of green finance business as the high-level financial talents mainly introduced and cultivated in Chongqing, and give special policy support in settlement, children's education and medical treatment, house purchase, work allowance, talent apartment and so on. Deepen cooperation with Chongqing Financial Society, universities, scientific research institutions, financial institutions, green environmental protection enterprises and financial think tank, and carry out research on the development and innovation of green finance to provide guidance for the construction of pilot zones for green finance reform and innovation. Encourage financial institutions to strengthen the reserve and training of green finance personnel, and cultivate a number of comprehensive talents with both financial and green technology knowledge.

4.3 Establish the Government Guidance Mechanism to Make up for the Incomplete Information of the Green Credit Market

(1) Establishing a green industry development fund. Chongqing municipal government actively cooperates with the national green development fund, establishes a green industry development fund, arranges special funds to jointly invest with financial institutions to establish a green industry development fund each year, and makes no profit requirements for the financial contribution, so as to make it easier to attract banks, fund companies and other financial institutions to actively participate in the cooperation of the master fund. The fund operates in a market-oriented manner. Through the establishment of sub funds such as pollution control, new energy, ecological agriculture and green technology innovation, it guides venture capital, local state-owned enterprises and social funds to participate in promoting green technology R&D, achievement transformation and application, green project incubation and promotion, establishes a risk compensation mechanism, and allows Angel sub funds to make a certain proportion of losses, so as to promote more funds to invest in innovative green enterprises in the seed stage and start-up stage.

(2) Docking with fully the National Financing Guarantee Fund and establish the policy financing guarantee fund for SMEs in Chongqing. The financing guarantee fund adheres to the functional orientation of “policy oriented, public welfare and non-profit”, and in accordance with the operation principle of “policy oriented, professional management and fund management”, the municipal and district (county) governments jointly contribute to build a policy financing guarantee system at the national, municipal and district (County) levels, so as to provide guarantee and credit enhancement services for loans and bond issuance of SMEs in the city in an all-round way.

(3) Optimizing the investment environment and introducing equity investment institutions. Issue policies such as granting grants to fund institutions for settling down, subsidies for renting office space, support for the introduction of high-end fund talents, tax incentives (corporate and individual income tax, value-added tax), and investment incentives, attract domestic and foreign head angel investment, venture capital and other equity investment institutions to cooperate with the green industry development fund or conduct investing by themselves, thus support the independent innovation and development of green enterprises.

4.4 Accelerate the Reform of the Green Financial Regime and Unleashing the Innovation Vitality of Micro Financial Organizations

(1) Encouraging banks’ green credit behavior. For green credit projects, implement differentiated risk supervision and monetary policy. For example, implement differentiated deposit-to-loan ratio regulatory requirements for banks with a large proportion of green credit to total loans, adjust the risk weight of green credit in risky assets in the calculation of capital adequacy ratio, lower the reserve requirements of banks with a large proportion of green credit in order to release the green credit funds of banking institutions; Bring green credit assets into individual assessment, refer to the tolerance standard of bad loan rate of inclusive finance for small and micro enterprises, improve the risk tolerance of green credit, and promote the establishment of a due diligence exemption system for green credit non-performing loans.

(2) Innovating green credit products. Encourage banks to develop new forms of guarantee when risks are under control, provide credit services for collateral and pledges with franchise rights of energy conservation and environmental protection projects, green engineering project charging (benefit) rights, intellectual property rights of environmental protection research and development institutions, contracts of environmental protection engineering companies, and orders from environmental protection equipment product manufacturers, and expand the credit supply for industrial enterprises that have achieved good emission rights and carbon emission rights in the environmental credit evaluation.

Chongqing is an important automobile manufacturing base in China, and it actively guides banking institutions to innovate financial products around the R&D, design, production, and distribution of new energy vehicles. Encourage banks to develop new energy vehicle leasing and loan installments, financing of charging station operation charging rights, low-interest loans for green building residential mortgage, green savings cards, green credit cards, green wealth management products and other retail

products to actively meet the public's green consumption needs.

(3) Promoting the development of green asset securitization. Innovate the actively managed loan asset securitization (CLO, Collateralized Loan Obligation) model to stimulate the investment demand for green credit assets, can reduce the difficulty and cost for institutional investors to invest in green credit ABS products. At the same time, it will help small and medium-sized commercial banks to invigorate green credit assets and optimize credit structure (Lu et al., 2020).

For green PPP (public private partnership) projects, such as sewage treatment, rail transit, construction of clean energy facilities, construction of natural gas transportation, storage and transportation peak shaving facilities, etc., which have stable cash flow or investment income, their income rights can be transformed into standardized products for listed trading through asset securitization to enhance capital liquidity, providing market-oriented exit channels and investment channels to achieve duration matching for social capital investors and institutional investors respectively.

(4) Establishing the incentive mechanism of green financial bonds. For enterprises that have obtained loans under green financial bonds, local governments are encouraged to arrange special funds to provide a certain percentage of discounted interest on the loans. For institutional investors investing in green bonds, tax exemption policies similar to those enjoyed by purchasing government bonds could be implemented. There are many SMEs in Chongqing, and they can explore the development of green collective bonds for SMEs, try to control their excessive issuance intermediary fees and disclosure fees through policy support and tax incentives, and include green collective bonds for SMEs in the scope of re-guarantee for collective bond issuance in Chongqing.

(5) Promoting the development of the environmental rights market. Cooperate with the National Carbon Market Capacity Building (Chengdu) Center to build the Western Carbon Trading Center, strengthen the publicity of the paid use of environmental rights and interests such as carbon emission rights, continue to accelerate the participation of companies that discharge pollutants in the rights market, and reduce the restrictions on financial institutions participating in the carbon market. Promote furtherly diversified entities such as commercial banks, investment banks, insurance institutions, and fund companies to enter the carbon market, and encourage financial institutions to develop financial products such as repurchase and custody of environmental rights and interests. Pilot the OTC swap contract trading of carbon emission rights in the Chongqing Carbon Emissions Trading Center, develop carbon forwards, carbon options, carbon funds and other derivative financial instruments in an orderly manner, establish a sound foreign investor review mechanism, and introduce qualified foreign investors (QFII) and Renminbi Qualified Foreign Investors (RQFII) to invest in carbon trading products.

4.5 Take Multiple Measures to Strengthen Social Awareness of Green Financial Development

(1) Strengthening the publicity of green consumption. Public welfare activities have been held to enhance the understanding of enterprises and residents on the green economy, establish the awareness of green development, advocate green consumption, and encourage the public to buy green buildings, clean energy and its products, energy conservation and emission reduction insurance products, so as to

create a good social environment for the development of green finance.

(2) Publicizing vigorously green financial policies and achievements. With the help of news media such as TV, newspapers, micro-blog, WeChat official account, outstanding cases of green financial institutions, green enterprises (projects), and the obtained achievements should be vigorously propagated, so that a good atmosphere for the development of green finance is created.

(3) Promoting international cooperation and experience exchange in green finance. Rely on Chongqing to build an inland international financial center. Encourage qualified financial institutions and enterprises in the city to issue green bonds overseas. Support overseas funds and overseas financial institutions to invest in green projects in Chongqing. Guide international funds to invest in green bonds, green stocks and other green financial assets in the city. Support overseas parent companies or subsidiaries of foreign-funded enterprises in the Chongqing Free Trade Zone to issue RMB green bonds in the domestic inter-bank market in accordance with laws and regulations. Support financial institutions in the city to strengthen business cooperation and exchanges with financial institutions in Europe, Singapore, and countries along the Belt and Road. Cooperate to promote the transfer and sharing of advanced green finance technologies and experience, and enhance the international influence of green finance.

5. Conclusions

The development of green industry and the low carbon transformation of the economy which require a lot of funds are inseparable from financial support. In recent years, Chongqing has made certain achievements in the development of green industry. However, according to the field survey, there are some problems in the development of green industry and SMEs in green industry face serious financing constraints. On the basis of elaborating the mechanism of finance policy supporting the development of green industry and the actual situation in Chongqing, this paper puts forward policy recommendations on financial support for the development of green industries from five aspects: increasing the construction of soft and hard infrastructure, perfecting green financial system, establishing the government guidance mechanism, accelerating the reform of the green financial institution, and strengthening the social awareness of green financial development.

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References

- Coase, R. H. (1960). The problem of social cost. *The journal of law & economics*, (3), 1-44.
https://doi.org/10.1057/9780230523210_6
- G20 Green Finance Study Group. (2016). G20 Green Finance Synthesis Report[EB/OL]. Retrieved

- from http://unepinquiry.org/wpcontent/uploads/2016/09/Synthesis_Report_Full_EN.pdf
- Peterson, K. Ozili. (2021). Digital Finance, Green Finance and Social Finance: Is there a link? *Financial Internet Quarterly*, 17(1), 1-7. <https://doi.org/10.2478/fiqf-2021-0001>
- Parvadavardini, S., & Nagarajan, V. (2016). Green finance for sustainable green economic growth in India. *Agriculture Economy-Czech*, 62, 35-44. <https://doi.org/10.17221/174/2014-AGRICECON>
- Research Group on the Green Finance Development Path of Shanghai. (2017). In *Research on the Green Finance Development Path of Shanghai*. Fudan University Press, Shanghai.
- Zhang, M. T. (2020). The Development of China's "Green Technology Bank" and Its International Experience. *Development Research*, 05, 74-83.
- Lu, Z. W., FANG, Q., & Qian, L. H. (2020). Research on the System of Promoting the Development of Green Credit Asset Securitization. *Journal of Xi'an Jiaotong University(Social Sciences)*, 40(03), 1-6.

Notes

Note 1. It is calculated based on the data of economic operation in 2015, 2018 and 2019 released by Chongqing Bureau of Statistics.

Note 2. Enterprises involved cover large, SMEs, and the company name is not listed in detail due to space limitations and privacy protection.