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**ФИНАНСИРОВАНИЕ СВОБОДНОЙ ЗОНЫ В КОНТЕКСТЕ
СТРОИТЕЛЬСТВА ПОРТА СВОБОДНОЙ ТОРГОВЛИ НА ОСТРОВЕ
ХАЙНАНЬ**

**GREEN ZONE FOR FINANCE IN THE CONTEXT OF BUILDING HAINAN
FREE TRADE PORT**

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В июне 2020 года правительство Китая представило общую программу строительства порта свободной торговли Хайнань, которая выдвигает более высокие требования к финансовой индустрии в порту свободной торговли, включая расширение финансовой индустрии с целью ее открытости внешнему миру и ускорения финансовых реформ и инноваций. Это также совершенно новая историческая возможность для развития финансовой индустрии. Благоприятная экологическая среда является основой развития Хайнаня. По мере углубления строительства порта свободной торговли Хайнань потенциал развития продолжает расти.

In June 2020, Chinese government introduced the overall program for the construction of Hainan Free Trade Port, which puts forward higher requirements for the financial industry in the free trade port, including the expansion of the financial industry to open up to the outside world and accelerate the financial reform and innovation. It is also a brand-new historical development opportunity for the financial industry. Good ecological environment is the foundation of Hainan's development. With the deepening of the construction of Hainan Free Trade Port, the development potential continues to grow. The protection and construction of ecological civilization needs financial support, so the development of «green finance zone» has once again gained crucial importance.

Ключевые слова: Хайнань, зеленая финансовая зона, порт свободной торговли Хайнань

Key words: Hainan, green finance zone, Hainan Free Trade Port.

President of China Xi Jinping, on the occasion of the 30th anniversary of the founding of Hainan Province in 2018, announced the establishment of a pilot free trade zone and a free trade port with Chinese characteristics in Hainan, which has given Hainan a new historical mission and at the same time ushered in a brand-new historical opportunity for development. On June 1, 2020, the Central Committee of the Communist Party of China and the State Council issued the «Overall Program for the Construction of Hainan Free Trade Port» [1], which proposes expanding the opening up of the financial industry internally and externally and speeding up the financial reform and innovation, providing a better platform for the rapid development of Hainan's financial industry.

In May 2019, the Party Central Committee issued the «National Ecological Civilization Pilot Zone (Hainan) Implementation Plan», which proposes to further give full play to the ecological advantages of Hainan Province, in-depth development of a comprehensive test of ecological civilization system reform, the construction of the National Ecological Civilization Pilot Zone, the implementation of the ecological priority of the investment and consumption model, and the promotion of the formation of a green production and living style [2]. Hainan Island is known for its green ecology, fresh air and beautiful environment. In the increasingly serious environmental pollution, the greenhouse effect is becoming more and more obvious today, the construction of ecological civilization is more and more important. Construction is inseparable from the mobilization of funds and investment, green finance came into being, once again came into focus.

1. Overview of Green Finance.

1.1. Definition of green finance.

Green finance is a term formed in the context of the country's increasing attention to the construction of ecological civilization, increasing environmental protection efforts to combat environmental pollution. It is a financial service provided to support the economic activities of environmental improvement, response to climate change and the economical and efficient use of resources, i.e., project investment and financing, project operation, and risk management in the fields of environmental protection, energy conservation, clean energy, green transportation, and green building.

1.2. Content of Green Finance.

Green finance covers two aspects: first, the flow of funds to resource-saving technology development and ecological environmental protection projects; and second, the sustainable development of the financial industry, which has gradually formed new products such as green credit, green bonds and green stock indexes.

Against the backdrop of the constant renewal of high-tech technologies such as big data, Internet of Things and artificial intelligence, the new projects emerging from the combination of

new technologies and processes give new vitality to green finance, adding bricks and mortar to the better protection of the environment on which we depend for our survival.

2. The current situation of green financial development in Hainan free trade zone.

At present, the development of green finance in Hainan Free Trade Zone is in a good position, and green finance is accelerating under the impetus of the dual policies of the National Construction Civilization Pilot Zone and Hainan Free Trade Port.

In Hainan, 70% of the registered individual business households are small and medium-sized enterprises and micro-enterprises, so the Local Financial Supervision Bureau of Hainan Province has set up a loan service center for micro-enterprises to form a loan supermarket, which is similar to a loan supermarket, where small and medium-sized enterprises look for suitable financial products according to their own needs, and at present the loan service center has been stationed in 10 banks to dock small and medium-sized enterprises and micro-enterprises, with state-owned banks, national joint-stock banks, and local banks in Hainan.

At present, the Loan Service Center has stationed 10 banks to dock SMEs and MSMEs' loans, which are composed of state-owned banks, national joint-stock banks and local banks in Hainan, including CITIC Bank, Everbright Bank, China Merchants Bank, Pudong Development Bank, Bank of China, Agricultural Bank of China, Industrial and Commercial Bank of China, China Minsheng Bank, Bank of Hainan, as well as the Agricultural and Commercial Bank of Haikou, etc. In addition to the above banks to provide support for green credit for small and medium-sized enterprises, but also to provide non-repayable renewable loan business, that is, when small and medium-sized enterprises will be borrowed from the bank into the production and business activities, the lack of repayment of the loan principal, if the enterprise's production and management situation is good, with the ability to repay the loan, in line with the conditions of the non-repayable renewable loan, you can apply for low-cost renewal of the loan from the bank. The essence of the non-repayable loan is that in the premise of not needing to repay the principal of the previous loan, the original loan can be extended, low-cost renewals.

Small and micro-enterprises with financing needs can first go online to the Hainan Province Intelligent Financial Comprehensive Service Platform to intelligently match financial products in the way of big data, which has introduced 60 financial institutions into the service platform, and at present, the loans declared on the platform amount to about 650 million yuan, and 210 million yuan of loans have already been disbursed, and the scale of green credit is constantly expanding, and the amount of green credit is constantly increasing, which has become the preferred financing method for small and medium-sized enterprises (SMEs) and small and micro-enterprises (SMEs). preferred financing method.

3. Green Bond Issue Achieves New Breakthrough.

Bank of Hainan 2021 successfully issued 1 billion yuan of green financial bonds, which is the first green financial bond in Hainan Free Trade Port, and has become a typical representative of Hainan's financial industry to support green development and industrial transformation. In addition to this, Hainan Provincial Agricultural Reclamation Investment Group successfully issued 800 million yuan of green rural revitalization corporate bonds, which is the first single in Hainan Free Trade Port and also the first in the country.

By the Bank of Hainan to take the lead in underwriting the «Baoting Sharing Valley Farm Investment and Development Co., Ltd. rural revitalization bonds» successfully issued to raise funds specifically for the construction of BaotingYabulun - Sharing Valley Sharing Farm project, support for the improvement of the environment of the rural population, to promote the integration of agriculture and tourism industries, and to promote poverty alleviation and rural revitalization of the effective convergence of the. This is the first single “rural revitalization” private debt of Hainan Free Trade Port, and is also another innovative achievement of green financial services for rural revitalization after the issuance of the first single net-value green financial management of Bank of Hainan. The successful issuance of private placement bonds for rural revitalization is an innovative initiative to crack the financing difficulties of shared farms, creating a new financing channel for shared farms in Hainan Province. It is of great significance for the rural revitalization cause of “green mountains are golden mountains” by taking shared farms as a hand, playing the role of financial capital leverage, assisting the development of rural revitalization industry, injecting financial water for rural revitalization, promoting the high-quality development of three rural areas, and truly realizing «green mountains are golden mountains».

4. Targeted introduction of financial products and services.

Financial institutions within the Hainan Free Trade Port have creatively developed corresponding insurance products for farmers, and during the five-year poverty eradication campaign in 2021, the bank took the lead in launching insurance for returning to poverty, and launched a ten-year subsidized interest rate on farmers' microfinance loans, which serves 1.24 million farmers; for the self-employed businessmen and businesswomen, the same activities of special small actions to serve the people's livelihood were taken, and in 2021, the Wanquanhe Financial Smoothness The project has adopted 22 specific initiatives to solve the difficulties, blockages and pain points in the financing process.

Hainan Province has launched the Qiongke Loan for science and technology enterprises, including specialized, special and new enterprises, encouraging listing, and promoting direct financing, especially for innovation in seed science and technology and the national food strategy to do a good job in actively promoting and providing full protection.

During the rapid development of green finance in Hainan Free Trade Port, the industry sector related to green finance is also improving, the Local Financial Supervisory Authority of Hainan Province has set up a special micro-enterprise loan service center to support the financing of small and micro-enterprises, and at the same time set up the Hainan International Carbon Emission Trading Center as the main body of the carbon trading to promote the listing of forest carbon, blue carbon and other trading varieties, and to strive for the conversion of the resource advantages of carbon sinks into real carbon emissions through active efforts. resource advantages of carbon sinks into real capital value. Convert GEP (Gross Ecosystem Product) into GDP (Gross Domestic Product), and continuously develop the green business within the Hainan Free Trade Port.

5. Main Factors Affecting the Development of Green Finance in Hainan Free Trade Port.

5.1. Single type of green financial products.

Green financial products are mainly based on green credit, the scale of loans accounts for a large proportion of the funds involved in green financial products, although green bonds have made new breakthroughs, but the amount of funds involved in green financial products is relatively small, and it is still necessary to continue to broaden the field of financial products, and the current green financial products are limited to loans, bonds, and insurance for special groups, the types of green financial products are not rich enough, and the expansion needs to be strengthened. Currently, green financial products are limited to loans, bonds and insurance for special groups, and the types of green financial products are not rich enough, and the expansion efforts need to be strengthened,

REFERENCES which to a certain extent limits the sustainable development of green finance.

5.2. Insufficient play of the role of the carbon market.

In the development of green finance, in addition to financial support for environmental protection, clean energy and other green products, there is also a very important point is the limitation of carbon emissions. At present, carbon emission reduction in Hainan Province mainly relies on administrative means, the use of tax policy to reduce the collection of vehicle purchase tax and financial subsidies and other means to promote and stimulate the sale of new energy vehicles, reduce the sale of fuel vehicles, and to stop the sale of fuel vehicles in 2030, through the efforts of a number of parties, obviously achieved results. However, some people are still in a wait-and-see situation. Although the above initiatives can reduce the environmental impact of automobile emissions to a certain extent, they are not enough to achieve the goals and requirements of energy conservation and emission reduction. Carbon emissions have fully penetrated into every aspect of the lives and work of residents and enterprises. For example, the use of daily electrical appliances, such as cell phones, computers, lights and other carbon dioxide released will have an impact on

carbon emissions. Currently, carbon trading in Hainan is in its infancy, the proportion of carbon emission quotas is relatively low, and the volume of carbon emission trading is even less, so the carbon market has not yet given full play to its role.

5.3. Asymmetric disclosure of environmental information.

Currently, regulators are still implementing a «voluntary disclosure» policy, which only mandates listed companies and bond issuers to disclose environmental information to the public. The Environmental Information Disclosure Guidelines for Financial Institutions, issued by the People's Bank of China in July, encourages financial institutions to disclose environmental information at least once a year, but it does not provide any guidance on the timing and completeness of the disclosure, or the content of the disclosure [3]. However, there are no specific requirements on the disclosure time and completeness of the disclosure content, so in the actual operation process, there are inevitably problems such as incomplete disclosure of information, concealment of information, and disclosure standards that do not comply with international standards.

6. Implementation Path of Green Finance in Hainan Free Trade Zone.

6.1. Clarifying the concept of green finance in Hainan free trade port.

Green finance is the combination of «green» and «finance». Green includes four meanings: first, it refers to clean energy and renewable energy, green energy that does not cause pollution to the environment; second, carbon emissions in line with the control of emission reduction requirements, to ensure that all measures to achieve the goals of 2030 and 2060 are green[4]; third, the environmental governance and ecological construction, the enterprise must reduce emissions within the enterprise, energy saving and reduction of energy consumption, to be from the production of electricity, boilers, office power use and other aspects of energy efficiency. Fourth, we must continue to promote green development through technological innovation, digital transformation and the introduction of advanced equipment. Finance is to provide financial support for the above green energy projects, green construction and green development.

6.2. Simplifying the process of loan financing for small and micro enterprises.

At present, there are only ten banks in the microenterprise loan service center to dock the loan services of microenterprises, which can't meet all the needs under the loan approval procedures, such as land appraisal, insurance, etc., and can introduce guarantee companies, accounting firms, and third-party intermediary service organizations in the loan service center to create investment and financing packages for microenterprises to solve a series of problems as much as possible at one time [5]. This will not only simplify the process of loan approval for MSMEs, but also save approval time. Insurance companies and accounting firms can provide

services for enterprises as well as banks, forming a closed-loop complete microenterprise loan service flow.

6.3. Launching green financial products.

Hainan's primary industry is agriculture, farmers and small and micro-credit households are the bank's key service object. For specific service objects, the bank can be targeted to launch the corresponding financial products to support, in addition to loans, and actively study the insurance products, fund products and other products to cover the farmers and small and medium-sized enterprises. In the overall program of Hainan Free Trade Port mentioned four key industries, including modern service industry and high-tech industries, banks should also focus on the service industry, focusing on green services, for different industries and industries to launch customized financial products to promote the all-round development of the industry. At the same time, it is also necessary to contact the Hainan Ecological Civilization Pilot Zone, fully explore and release the potential of green finance to support rural revitalization and poverty alleviation, so that the financial all-round support for green development potential and power.

6.4. Improving financial information disclosure system.

The introduction of detailed policies on corporate environmental information disclosure requirements, and by the corresponding departments and institutions to supervise this, specify the time of year, what content should be disclosed, the disclosure of the details and elements of a clear list, in order to prevent enterprises from concealing, strengthen the transparency of the environmental information, to help financial institutions and investors to identify the information asymmetry of the many hidden risks to attract more investors to stop and then invest funds, and to attract more investors. In order to attract more investors to stop by and invest money to become the beneficiaries of green financial products.

Conclusion.

Since the increasingly serious environmental pollution, the state has introduced a number of policies to combat environmental pollution, along with the increasing impact of the greenhouse effect, the state set up an environmental protection tax in order to constrain the state coercion of enterprises in the production and operation activities of various behaviors, so that they can actively invest in environmental protection, environmental governance. When the world is faced with environmental pollution brought about by a variety of problems, production, life and the negative impact, we will turn our attention to environmental protection, clean energy, carbon emissions and other green projects, in order to deepen our understanding of environmental protection, green finance came into being, for green projects and products to provide favorable financial support. Hainan Free Trade Port will pay more attention to green development due to its unique

geographical location and environment, and it is hoped that the study of green finance will contribute to the further development of the financial industry in the Free Trade Port.

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ОПТИМИЗАЦИЯ ЧАСТОТНОЙ КРИВОЙ В ШАГОВЫХ ДВИГАТЕЛЯХ УПРАВЛЯЕМЫХ PLC

THE OPTIMIZATION ON THE FREQUENCY CURVE OF THE PLC CONTROL IN STEPPING MOTOR

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В данной статье рассмотрены варианты оптимизации управления работой шагового двигателя PLC путем разумного изменения различных параметров кривой частоты вращения шагового двигателя.

In this paper, based on the principle of driving a stepper motor work of the stepper motor drive of the PLC send pulse signals and direction, it can make the PLC control of stepping motor speed optimization by reasonable modifying the various parameters of the stepper motor frequency curve.