



# Research on the Industrial Foundation and Financial Support of Green Economy Development

—Take the Green Economy of Jiangsu Province as an Example

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## Abstract

Jiangsu has the foundation and opportunities for the innovation and development of the green economy, but the problem of financing is still relatively prominent. From the analysis of industrial economic theory, the development of Jiangsu's green economy is in the incubation period. Under the drive of deepening the concept of green development proposed by the Party's "19th Party Congress", it will focus on promoting the integration of advanced manufacturing and advanced service industries. In this way, it will have the advantage of being close to Shanghai and developing an earlier green economy and rich experience, summing up the experience of green economy development in a number of developed countries, and focusing on the characteristics of the industrial base of Jiangsu's green economy to explore the path of green financial support.

## Subject Areas

Economics

## Keywords

Green Economy, Industrial Foundation, Financial Support, Innovation, Development

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## 1. Introduction

The green economy is a new economic form that is market-oriented, based on the traditional industrial economy, and developed with the aim of economic and environmental harmony. Innovation and development of green economy stressed

the need to optimize the industrial structure, promote new industries and market expansion. Green economic development is inseparable from the strong support of the financial sector; it seems there is room for both sides to further develop mutually beneficial. How to support the development of Jiangsu's green economy with finance is a real problem for the relevant parties in Jiangsu. Starting from the industrial base, we will study the status of Jiangsu's green economy innovation and development, with the aim of proposing a financial support program that matches the characteristics of Jiangsu's green economy development at this stage.

## 2. Literature Review

From the "12th Five-Year" development plan of the national economy, the green economy has received more and more attention from all walks of life. Domestic scholars have achieved relatively significant research results in many fields of green economy and green finance. For example, Wu T. (2017), Xiao X. (2017) [1], and Wang X. M. (2017) [2] elaborated on the development of green finance and the construction of green finance from the perspective of the supply-side structural reform and economic development mode, and the construction of ecological civilization. The meaning of the system Hu A. G. and Zhou S. J. (2014) [3] constructed a "three-circle model" to analyze the mechanism of green development. Mai J. H. and Xu F. (2015) [4] based on the perspective of joint analysis, explored the factors affecting China's green finance. Yang Z. G. (2017) [5] and Zhan X. Y. (2017) [6] have sorted out the current situation and realistic dilemma of China's green economy development. Qin S. S. (2015) [7], Wang Xu, Zhu Hui, *et al.* (2010) [8], from the technological innovation of enterprises, the implementation of green production, the implementation of green marketing, the promotion of green development law, the green financial support of commercial banks, etc. Suggestions for promoting the development of green economy were put forward.

Where the study of the green economy in Jiangsu financial support are: Guo, X. M. (2017) [9] focuses on the development of green financial models Jiangsu discussed and studied. Zhou J. B. (2017) [10] proposed to make the green industry become the new engine of Jiangsu's economic development, and pay attention to using the system concept as a guide and implement multiple measures simultaneously. Qibu Construction (2017) [11] regards eco-economy as a new impetus for Jiangsu's green development, and clearly states that eco-economy is a clear direction for Jiangsu's economic transformation, and it should be implemented as a comprehensive strategic activity. Jiang Chao B. (2011) [12] from the taxation point of view put forward countermeasures in Jiangsu economic financial green growth.

In the above research, we find that there is room for discussion on the financial support for the development of green economy:

First: The research on financial support for green economy development is

generally more macroscopic. The plight of internally framework for green finance, facing solutions though set forth in full. However, the development of green economy in various regions has its own characteristics. It is not enough to implement the investment and financing methods that match the development degree of green economy in various places, and the analysis of the development ability of financial markets. Therefore, it is difficult to provide corresponding support in actual work decisions.

Second: There is no financial support research on Jiangsu's green economy development based on the perspective of industry. The existing literature, there are a series of green for Jiangsu economic and financial system, but to give financial support to research-based industry-based perspective has not been.

### **3. The Industrial Base of Jiangsu's Green Economy Innovation and Development**

#### **1) Advanced manufacturing**

Compared with traditional manufacturing, advanced manufacturing absorbs high-tech achievements in modern electronic information, management technology, computers, machinery, etc., and applies these high-tech achievements to product design, production and testing in modern manufacturing. The general process of manufacturing, circulation, and management is to achieve high efficiency, high quality, clean, low consumption, flexible production, and good economic and environmental benefits. Such as CNC machine tools, aerospace equipment, etc.; the other is new.

Jiangsu is a major manufacturing province in the country. Since 2007, we have been striving to promote the transformation and upgrading of the manufacturing industry, and to take advanced manufacturing as an important area for implementing the innovation-driven development strategy. In January 2018, Governor Wu Z. L. clearly stated in the government work report that it is necessary to implement the "Made in China 2025" Jiangsu Action Plan in depth, vigorously develop advanced manufacturing industries, and promote the transformation of Jiangsu manufacturing to creation and intellectual development in Jiangsu. As of 2016, the province's advanced manufacturing industry accounted for 41.25%, an increase of nearly 4 percentage points from 2012, an average annual increase of 1 percentage point. Among them, the large-scale equipment manufacturing industry and new materials manufacturing industry, the strongest growth is the instrumentation manufacturing industry and bio-pharmaceutical manufacturing industry, Suzhou, Nanjing, Wuxi advanced manufacturing development level leading the province. Jiangsu's development of advanced manufacturing has its unique advantages: First, the location advantage of Shanghai Intermodal Transportation provides unique conditions for the development of industry, especially the development of equipment manufacturing. Second, it is located in the "Yangtze River Delta Economic Zone".

#### **2) Advanced service industry**

The advanced service industry, that is, the modern service industry, refers to the service industry with modern science and technology, especially relying on “modern Internet +” as the main support, establishing new business models, service methods and management methods. It is different from traditional service industries such as catering and transportation. It is mainly represented by information transmission, computer software industry, business services, scientific research and technical services.

As early as 2005, the Jiangsu Provincial Party Committee and the provincial government promulgated the “Implementation Outline” and “Several Policies” on accelerating the development of modern service industries. In March 2009, the US “Silicon Valley Innovation and Entrepreneurship Base” settled in Nanjing, and more than 10 modern service industry projects from Silicon Valley in the United States settled in Nanjing. In September 2010, the first modern service industry research institute was unveiled in Changzhou High-tech Zone. In December of the same year, Jiangsu Modern Service Industry Federation was unveiled in Nanjing. This is the third provincial service industry association established in the Yangtze River Delta after Shanghai and Zhejiang. After more than a decade of development, the industrial structure of Jiangsu Province has been optimized, and the contribution of the tertiary industry to the economy has increased year by year. In the first quarter of 2016, the added value of the tertiary industry accounted for more than half of the regional GDP for the first time, reaching 51.5%, an increase of 3 percentage points over the same period of the previous year and 6.2 percentage points higher than the secondary industry. Jiangsu’s advanced service industry has obvious advantages in the domestic market: Jiangsu’s service industry started early, has a good foundation, and has advanced manufacturing as a support, attracting strong investment capabilities and good development prospects.

#### **4. International Reference for Financial Support for Green Economy Development**

From the perspective of green economy developed countries, financial support for green economy support system design, policy capital investment, government capital and financial capital cooperation, tax policy preferential, and establishment of local green banks (**Table 1**)

To sum up, the support, guidance and legal construction of the government’s fiscal and taxation policies are important factors for financial support for the development of green economy. Government funds are used to subsidize green economy investment, scientific research funds are used to initiate green economy innovation, tax incentives are used to support industrial development, and policy directions are used to guide financial capital to green industries. At the same time, we will build a multi-level legal system, coordinate the power of the government and the market, and use different financial innovation tools to support the development of green economy in different industrial stages.

**Table 1.** Financial support experience of some countries in green economy development.

Country	Key support industries	Project name
England	Green energy. Green lifestyle. Green manufacturing.	2009 “British Low Carbon Conversion Plan” 2009 “UK Renewable Energy Strategy”
USA	Develop new energy sources. Get rid of foreign oil dependence. Stimulate economic recovery.	2009 “American Recovery and Reinvestment Act” \$787 billion
Germany	Eco-industrial. New energy vehicles.	1996 “Solar Action” Program 2009 eco-industry as a guideline for the German economy
France	Nuclear energy. Renewable energy. Low carbon vehicles.	2008 package of renewable energy development plan
Japan	Energy conservation. Low-carbon society.	2009 The draft “Green Economy and Social Change” Policy
Korea	Low-carbon green growth, revive the Korean economy.	2009 low-carbon green growth strategy for economic revitalization

## 5. Financial Support Suggestions for Green Economy Innovation and Development

### 1) Clarify government credit policy guidance and fiscal advancement policies, and innovate ways of government and social capital cooperation

China’s green finance is in its infancy, and the green investment returns of some projects are not attractive enough. The phenomenon of financing difficulties and expensive financing is widespread. According to the 2016 China Banking Social Responsibility Report released by the China Banking Association, as of the end of 2016, the green credit balance of 21 major banking financial institutions was 7.51 trillion US dollars, accounting for 8.83% of the total loan balance. As of the end of 2012, the balance of green credits of banking financial institutions was 6.12 trillion yuan, accounting for 9.12% of the balance of various loans. It can be seen that although the total amount of green credit is rising, the proportion of the balance of various loans is declining. This requires clarifying the government policy incentives, broadening the financing channels for green finance, and guiding the flow of financial capital to the green industry. For example, the Jiangsu Branch of the People’s Bank of Jiangyin City implements “five-color grading” for enterprises, which not only makes the environmental behavior information of industrial enterprises public, but also enables financial funds to be rationally allocated in the green industry, which can be popularized and implemented throughout the province.

### 2) Accelerate the transformation and upgrading of green industry and establish Jiangsu Green Bank and Green Industry Fund

As early as the 1970s and 1980s, the United States began to develop clean energy projects. The state government establishes local green banks to provide adequate financial support for the clean energy market and expand the effective supply of green financial products and services. The development of China’s green banking industry is relatively slow. Until May 16, 2017, China’s first ex-

partly reviewed green bank formation plan was officially adopted. Jiangsu Province is currently in a blank position in the development of green banks. The “Guiding Opinions on Building a Green Financial System” jointly issued by the People’s Bank of China and the Ministry of Finance, said that it is necessary to integrate some special funds such as energy conservation and environmental protection, establish a national green development fund, invest in green industries, and use fiscal policies. Support the establishment of a sound green financial system. For industrial funds involving the green economy, there are precedents in China. As shown in **Table 2**. Green banks and green funds, as financial innovation tools, will play a positive role in broadening the financing channels of Jiangsu’s green economy and promoting the transformation and upgrading of green industries.

### 3) Build a sound policy and regulation system to lead the development of green industry and form an industrial cluster

The green economy industry is a high-input industry. According to the comprehensive strength distribution of various cities in Jiangsu, cities and counties with strong strengths such as Nanjing, Wuxi and Suzhou can be encouraged to take the lead in demonstrating the role, and jointly establish weak green economic industrial parks and strengthen regional cooperation. According to the information of the Jiangsu Provincial Environmental Protection Department, as

**Table 2.** Major domestic green industry funds.

Fund name	Set up time	Scale	Initiating agency	The main investment areas
Guangdong Green Industry Investment Fund	2009.12	25 billion yuan	Guangdong Science and Technology Department, Shenzheng Guorong Xinhe Investment company, Hong Kong Jianji International Group company	The government’s public lighting energy conservation projects, green urban lighting
Yichang Green Development Investment Fund	2016.6	200 billion yuan	Government Yichang, Wuhan Iron and Steel Group Corporation, Changan International Trust Co., Ltd.	Yichang infrastructure projects, energy-saving and environmentally friendly new materials, new energy, etc.
Wei to New Energy and Industrial Development Fund	2016.12	100 billion yuan	Yangtze River Industry Fund, Weilai Automobile, Donghu High-tech Zone	New energy vehicles, intelligent electric vehicles related industry chain
Guangdong Renewable Energy Industry Fund	2015.8	30 billion yuan	China Guangdong Nuclear Power, Shenzhen Energy, Mingyang Wind Power, Oriental Shengshi Asset Management Co., Ltd.	Wind power stations, solar power stations, hydropower waste power stations, biomass energy, etc.
Dongding New Energy Industry Fund	2015.11	30 billion yuan	DongdingXinneng Industrial Capital, Beijing Dongrun Huaneng Technology Co., Ltd.	Photovoltaic, wind power, biomass, energy storage, microgrid, etc.
Xinyinjinfeng Wind Power Industry Fund	2016.3	22.5 billion yuan	Goldwind Technology, Xinyin Zhenhua Stock Investment Fund Management Co., Ltd.	Domestic small and medium-sized private wind power project company
Huakai Green Industry Fund	2017.1	1 billion yuan	China Huarong, Sun Kaidi New Energy Group	Green economy industry, sustainable development industry, poverty alleviation industry

of 2014, there are 12 national eco-industrial parks named by Jiangsu and 85 provincial-level. At the same time, it uses its own location advantages, docking Shanghai, building a Su-Shanghai cooperation demonstration park around the green economy industrial chain, replicating the experience of the Shanghai Free Trade Zone, transforming the development zone into a modern industrial park, and actively promoting the regional integration development of the Yangtze River Delta.

At the same time, we can learn from Japan's experience in developing a green economy, promote the establishment of a sound legal and regulatory system, and use strong legal means to ensure the smooth development of green industries. In accordance with relevant national laws and regulations, the "Regulations on Environmental Protection of Jiangsu Province" shall be revised in a timely manner to increase the disclosure of environmental information of financial institutions and enterprises, and for the green financial institutions to develop corresponding incentives and support policies, such as tax incentives for green economy technology and products.

## 6. Conclusions

At present, China's economic development has entered a new normal. Understanding the new normal, adapting to the new normal, and leading the new normal are the big logic of China's economic development at present and in the future. The driving force for China's economic growth is shifting from a traditional growth point to a new growth point. Deng J. H. pointed out that the development of a green economy is a concrete measure to "lead the new normal of China's economy". The 19th National Congress of the Communist Party of China also pointed out that it is necessary to achieve the innovative development of the green economy and achieve harmony between man and nature.

Jiangsu's green economy started early and has unique geographical advantages and investment advantages. Among them, Suzhou Industrial Park, Zhangjiagang Free Trade Zone and Nantong Economic and Technological Development Zone adhere to the innovation-driven development strategy and have achieved remarkable results in industrial upgrading, open cooperation, green development and deepening reform. In the future, Jiangsu can learn from the experience of domestic and foreign financial support for green economy development, innovate and develop the province's advanced manufacturing and modern service industries, rationally use fiscal and taxation policies, strengthen international cooperation in green finance, and promote Jiangsu's industrial transformation and upgrading.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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