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RESEARCH ON THE GREEN ECONOMY AND CHINA'S HIGH QUALITY ECONOMY
ИССЛЕДОВАНИЕ "ЗЕЛЕННОЙ" ЭКОНОМИКИ И ЭКОНОМИКИ ВЫСОКОГО КАЧЕСТВА
В КИТАЕ

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Abstract: The research results show that the overall scale of China's green economy is constantly expanding, and the proportion of green GDP has also increased to 24.7%. The installed capacity of renewable energy has even reached 2.39 billion kilowatts. However, problems such as uneven regional development, shortcomings in core technologies, and slow transformation of traditional industries still affect the situation. The green economy mainly relies on the three effects of industrial upgrading, technological innovation, and optimized resource allocation to provide support for high-quality development, and policy support and technological breakthroughs are the most critical factors among them. This report proposes a coordinated promotion strategy from five aspects: industry, technology, policy, finance, and region, hoping to provide theoretical reference and practical basis for China to achieve its "dual carbon" goals and promote economic transformation and upgrading.

Аннотация: Результаты исследования показывают, что общий масштаб "зеленой" экономики Китая постоянно расширяется, и доля "зеленого" ВВП также увеличилась до 24,7%. Установленная мощность возобновляемых источников энергии достигла 2,39 миллиарда киловатт. Однако такие проблемы, как неравномерное региональное развитие, недостатки в основных технологиях и медленная трансформация традиционных отраслей промышленности, все еще влияют на ситуацию. "Зеленая" экономика в основном опирается на три эффекта: модернизацию промышленности, технологические инновации и оптимизированное распределение ресурсов, которые обеспечивают поддержку высококачественного развития, а политическая поддержка и технологические прорывы являются наиболее важными факторами среди них. В настоящем отчете предлагается скоординированная стратегия продвижения по пяти направлениям: промышленность, технологии, политика, финансы и регион, которая призвана обеспечить теоретическую базу и практический базис для достижения Китаем своих целей в области "двойного использования углерода" и содействия экономическим преобразованиям и модернизации.

Keywords: green economy; high-quality development; Dual Carbon goals; green GDP; technological innovation; regional coordination.

Ключевые слова: зеленая экономика; высококачественное развитие; двууглеродные цели; зеленый ВВП; технологические инновации; региональная координация.

The issue of global climate change is becoming increasingly prominent, and low-carbon and green transformation has become a universal consensus among countries around the world. As the world's largest developing country, China's long-term high-speed development has accumulated increasingly obvious problems such as resource scarcity and environmental pollution. The traditional high energy consuming and high emission development model is no longer sustainable. In 2020, China officially proposed the goal of "peaking carbon emissions before 2030 and achieving carbon neutrality before 2060", elevating green and low-carbon development to the national strategic level. The "15th Five Year Plan" currently being prepared also clearly proposes to vigorously develop the green economy and accelerate the green transformation of development mode. According to relevant data, the market size of China's green and low-carbon industry has exceeded 13 trillion yuan by 2025, and the green industry is becoming a new engine to drive economic growth and optimize economic structure. In this context, systematic research on the development status, mechanism of action, and future development path of green economy is of great practical significance for solving resource and environmental pressures, promoting high-quality economic development, and implementing the "dual carbon" goals.

From the current perspective, most existing research only focuses on single directions such as green finance and industrial transformation, and the analysis of the intrinsic relationship between green economy and high-quality development is not deep enough, and lacks the latest data support by 2025. So, based on sorting out the relevant theories of green economy, I will increase research on its multiple mechanisms for high-quality development, which can further enrich the relevant research system and make up for the shortcomings in the latest empirical data and regional difference analysis. From a practical perspective, this article is based on the actual development situation in China, combined with specific cases and mature international experience, proposing targeted development paths that can provide reference for local governments to formulate relevant policies and enterprises to carry out green transformation, and help achieve coordinated promotion of economic development and ecological protection.

The research on green economy in foreign countries began in the 1980s, and Pierce first proposed the concept of "green economy", gradually forming a theoretical system that balances economic growth and environmental protection. Related research mainly focuses on sustainable development, technological innovation, policy support, etc., but most of them are based on the practical experience of developed countries and are not suitable for China's national conditions. In recent years, research in China has grown rapidly, and green economy is generally defined as a development model based on resource conservation and environmental friendliness, driven by technological innovation, and pursuing coordinated development of economy, society, and ecology. Previous studies have also pointed out that there are significant regional disparities and insufficient innovation capabilities in China's green economy, but there are still three overall shortcomings: firstly, the lack of the latest data from 2025; Secondly, the analysis of the empowerment mechanism is not in-depth enough; Thirdly, the research on regional differences is relatively vague. This article focuses on researching these shortcomings.

This article adopts three research methods: literature review method to sort out the theoretical basis; Analyzing macro data from 2020 to 2025 using statistical methods; The case analysis method selects Jiangsu Zero Carbon Park and Inner Mongolia Green Power Computing Hub for research. There are three main innovation points: firstly, new data, using the latest data to reflect the current situation; The second is a new perspective, which breaks down the empowerment mechanism from the three major effect systems and refines regional differences; The third is to practice new, propose feasible paths and match them with case data, which is more practical.

The emergence of green economy is the result of human continuous reflection on traditional development models. The 1960s to 1980s were the embryonic stage of green economy, during which the focus was on pollution control; The period from the 1990s to the 2010s was a stage of development, where the concept of sustainable development was popularized and green industries gradually emerged; Since the 1920s, it has entered a mature stage, and under the promotion of the dual carbon goal, the green economy and high-quality development have achieved deep integration. China's green economy started relatively late, but its development speed is very fast. In 2012, green development was included in the "Five in One" overall layout, and after the dual carbon target was proposed in 2020, it entered an accelerated development stage, forming a development model with Chinese characteristics.

Green economy is not simply about "environmental protection+economy", but a new development model based on resource conservation and environmental friendliness, with green technology innovation as the core driving force and industrial green transformation as the main path, thus achieving coordinated development of economy, society, and ecology. Its core connotation mainly includes three aspects: saving resources and improving resource utilization efficiency; Protect the environment, reduce pollutant emissions and ecological damage; Collaborative development, balancing economic growth, social equity, and ecological protection.

The eastern region is in a leading position in technology and industry; The central region is undergoing transformation and achieving rapid growth; Developing new energy based on resources in the western region; The proportion of traditional industries in Northeast China is too high, and the progress of transformation lags behind, becoming a weak link.

Table 1 Comparison of Green Economy Development Index by Region in China (2025)

Region	Green Economy Development Index (Full Score 100)
Eastern Region	78.2
Central Region	65.4
Western Region	58.7
Northeast Region	61.2

The eastern region has a good economic foundation, strong technological innovation capabilities, and adequate policy support. The development of green industries and green finance is mature, and a number of green industry clusters and zero carbon parks have been formed in Jiangsu, Zhejiang, Guangdong and other places, becoming national benchmarks. With the help of industrial transfer and policy support, the central region is accelerating the green transformation of traditional

industries, and the growth rate of green economy is relatively fast, gradually narrowing the gap with the eastern region. Although the overall development level of the western region is not high, it is rich in renewable energy resources such as wind power, photovoltaics, and hydropower. Relying on resource advantages, it vigorously develops the new energy industry and has embarked on a path of characteristic development. The proportion of traditional high energy consuming industries in Northeast China is high, the transformation difficulty is high, technological innovation is insufficient, and the development of green industries is relatively lagging behind, becoming a weak link in the development of the national green economy. Uneven regional development not only affects the overall level of green economy, but may also exacerbate regional economic disparities. Therefore, it is necessary to attach importance to regional coordinated development.

Energy structure optimization is an important part of green economy development and the key to achieving the “Dual Carbon” goals. In recent years, China has vigorously developed renewable energy, gradually reduced the proportion of fossil energy consumption, and achieved a revolutionary reshaping of the energy structure, providing core support for the development of the green economy.

Table 2 China's installed capacity and proportion of renewable energy (2020–2025)

Year	Hydropower (100 million kW)	Wind Power (100 million kW)	Photovoltaic (100 million kW)	Total Installed Capacity (100 million kW)	Proportion of Renewable Energy in Total Installed Capacity (%)
2020	3.7	2.8	2.4	8.9	38
2022	4.1	6.2	4.9	15.2	48
2024	4.5	9.1	8.0	21.6	57
2025	4.7	10.2	9.0	23.9	60.4

Optimizing energy structure is not only an important aspect of green economy, but also a key to achieving the dual carbon goals. In recent years, China has vigorously developed renewable energy and continuously reduced the proportion of fossil energy consumption, resulting in significant changes in the energy structure. From 2020 to 2025, the installed capacity of renewable energy will increase from 890 million kilowatts to 2.39 billion kilowatts, and the proportion of total installed capacity will increase from 38% to 60.4%. Wind and photovoltaic power will achieve rapid growth, providing stable energy support for the development of green economy.

Green industries are the core carrier of the green economy. In recent years, China has continuously increased support for green industries, gradually improved the green industrial system, and formed a green industrial pattern dominated by new energy equipment, green manufacturing, green finance and circular economy.

Table 3 Proportion of Green Industry Categories (2025)

Green Industry Category	Proportion (%)
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New Energy Equipment	35
Green Manufacturing	28
Green Finance	15
Circular Economy	12
Others	10

By 2025, new energy equipment will account for 35% of the green industry, and green manufacturing will account for 28%, with a combined total of over 60% becoming the core pillar; Green finance and circular economy are steadily developing, and the potential of green agriculture and service industries is gradually being unleashed.

There are still obvious shortcomings in the current development of China's green economy. The bottleneck constraint is reflected in the insufficient research and transformation efforts of core technologies; Weak regional coordination and significant gaps exist; The green finance products are single and the support for small and medium-sized enterprises is insufficient; The willingness to upgrade traditional industries is not high and the cost is high, resulting in slow progress.

The green economy promotes energy conservation and carbon reduction in iron and steel, chemical and other industries, with a cumulative reduction of 120 million tons of crude steel production capacity and significant decline in energy consumption and emissions.

From 2020 to 2025, green industries attracted 8.5 trillion yuan of social capital. Policies such as green taxation and carbon trading guided resources to flow to green fields, and the comprehensive utilization rate of industrial solid waste rose to 78%, significantly improving resource allocation efficiency.

1.Jiangsu Zero-Carbon Park: Achieved full park carbon neutrality in 2025 with full coverage of green power, 35% reduction in energy consumption and rapid annual output growth, becoming a model for regional green development.

2.Inner Mongolia Ulanqab Green Power Computing Hub: Built a “green power + computing” model based on wind and solar resources, consuming 18 billion kWh of green power annually, driving new energy installed capacity and employment, and increasing the share of local green GDP.

Deeply integrate energy transition with Industry 4.0, steadily increase the proportion of renewable energy, lead the green and intelligent transformation of traditional manufacturing, and build a sound policy system of green taxation and carbon trading.

Take circular economy as the core with global leading resource recovery rate, integrate green concepts into public services and national education, and form a green ecology with full social participation.

First, long-term policy design, incorporating into assessment and strengthening constraints; second, independent technological innovation to break through core bottlenecks; third, market-oriented mechanism to improve carbon market and green finance; fourth, full social participation to popularize green concepts and expand public involvement.

Promote green transformation of traditional industries such as iron and steel and cement, eliminate backward production capacity; expand new energy, green manufacturing and circular

economy, cultivate leading enterprises and industrial clusters, and promote in-depth integration of green industries and digital economy.

Incorporate green GDP and carbon emission intensity into government performance assessment; optimize tools such as green taxation, subsidies and carbon trading; improve green standards and certification systems, and strengthen environmental supervision and law enforcement.

Expand the scale of green credit and reduce financing costs; develop green bonds and industrial funds, and innovate carbon financial products; improve the risk prevention and control and supervision system to enhance financial support capacity.

Build a pattern of “eastern leadership, central undertaking, western characteristics, northeastern transformation”: the eastern region strengthens innovation and radiation; the central region accelerates transformation and undertaking; the western region develops new energy based on resources; the northeast region overcomes difficulties of traditional industries and narrows regional gaps.

1.The green economy is deeply coupled with high-quality development through three effects: industrial upgrading, technological innovation and resource allocation, and is the core path to achieve transformation.

2.From 2020 to 2025, China has made remarkable progress in the scale, energy structure and industrial system of the green economy, but problems such as regional imbalance, technological shortcomings and lagging transformation still restrict development.

3.Policy and technology are the core drivers. Coordinated efforts from five aspects: industry, technology, policy, finance and region are needed to take the green development path with Chinese characteristics.

With the advancement of the “Dual Carbon” goals and the 15th Five-Year Plan, the green economy will become a long-term main line. It is expected that the share of green GDP will continue to rise, core technologies will gradually become independent and controllable, regional coordination will be strengthened, the financial system will be improved, and traditional transformation will speed up. Finally, in-depth integration with high-quality development will be achieved, providing a Chinese solution for ecological civilization construction and global green development.

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