

Status, Challenges and Prospects of Policies Related to the Green Economy

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Abstract:

Amidst the backdrop of globalization, the international community has increasingly focused on green economy policies, recognizing them as crucial instruments for advancing sustainable development. With the green and low-carbon transformation of the global industrial chain supply chain, the green economy and trade have become an important symbol for measuring the trade competitiveness of a country or region. Green economy policies are not only related to the process of global environmental governance but also have a direct impact on the green transformation of countries' economic landscapes and the reshaping of international competitiveness. Amid escalating environmental challenges, the concern over leveraging green economic policies to foster harmonious economic and environmental development has emerged as a significant matter for governmental and international entities. This paper will focus on analyzing the relevant theories of the green economy, the status of its development, and the challenges it is currently facing. By analyzing the different cases of developed and developing countries in promoting the development of a green economy, we will take an in-depth look at the bottlenecks in the development of a green economy and the prospects for its future development, and reveal the specific challenges faced by different countries, as well as the innovative strategies they have adopted in promoting environmental sustainability and economic growth.

Keywords: Green economy; innovation; economic globalization.

1. Introduction

Di et al. note that the term “green economy” emerged in the late 1980s, with its initial comprehensive exposition provided by British environmentalist Pearce in his publication, *Blueprint for a Green Economy*. Yet, the green economy's ascent to global prominence did not occur until the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro [1]. It has attracted extensive attention from scholars in various countries. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in 2005 presented the notion of green growth, an approach designed to alleviate poverty and enhance human welfare in conjunction with ecological conservation, facilitated by economic development.

From the 21st century onwards, humanity has encountered significant challenges across economic, social, and ecological fronts, leading to a growing emphasis on enhancing ecological efficiency and fostering the harmonious progression of environmental and economic spheres. To support the dynamic development of the green economy, major countries around the world have introduced diverse policy measures. The United States has made clear the

centrality of clean energy and the green economy through the “National Innovation Pathway of the United States”. Japan formulated “The Carbon Neutral Green Growth Strategy 2050”, which specifies carbon neutrality targets in the form of legislation, to promote green growth in the economy by scaling up renewable energy. The European Union has made the green transition the centerpiece of its economic recovery plan, launching the “European Green Deal” to support the development of green innovation and technology through green finance and emissions trading systems. China has put forward the development concept of “Lucid waters and lush mountains are invaluable assets” and is actively promoting several policies directly related to the green economy, such as the realization of peak carbon dioxide emissions by 2030, the achievement of carbon neutrality by 2050, and the construction of the “Green Silk Road”.

Drawing on the existing research landscape, this study reviews the conceptual framework and historical evolution of the global green economy. It also examines the ongoing application of green economic policies in both industrialized and developing nations, offering an in-depth analysis of the contemporary challenges and potential future

trajectories for green economic development. This paper conducts a systematic review and thorough exploration of the relevant theoretical framework of the green economy. Following this, the perspective shifts from the macro level of the globally integrated economic system to a detailed examination of the evolution of green economic policies across nations. Eventually, it focuses on the micro level, conducting an in-depth analysis of the specific impacts and profound effects that the implementation of green economic policies in a single country has on its domestic environment. Second, the paper systematizes the multiple difficulties and challenges faced by the various stakeholders and implementers of global green economy policies (including governments, businesses, NGOs, and consumers, among others), and summarizes how these challenges and opportunities together have contributed to the sustainable development of environment and trade. Finally, the paper builds a theoretical framework for exploring the development prospects of global green policies and provides theoretical guidance for building a more prosperous, just, and sustainable world.

2. Theory and Evolution of the Green Economy

The evolution of green economy theory has attracted the close attention and interpretation of many internationally recognized scholars around the world. Merino-Saum et al. state that the concept of a Green Economy (GE) has gained momentum in academia and policymaking in the last decade [2]. Concurrently, the closely intertwined area of green trade policies has garnered widespread interest from nations. As noted by Loiseau et al. in their research, entities like the World Bank and the United Nations view green economies and green trade as instrumental for attaining sustainable, eco-friendly growth [3].

At the national level, several countries are also actively developing green economy strategies, policies, and plans. The core of the green economy policy is to ensure that the production, transportation, and use of traded goods comply with environmental protection requirements through the enactment of stringent environmental protection regulations, and to encourage enterprises to adopt green industry chain management and international cooperation to improve the competitiveness of their products and promote environmental protection and sustainable development on a global scale. Khan et al. also suggested that a “green economy” can be defined as an economic system that meets good environmental conditions and keeps the economy within ecological limits [4]. At the same time, Khan et al. suggest that more comprehensive and concrete measures and policies are essential to promote the de-

velopment of a green economy. For example, Candelaria et al. note that there is a statistically significant negative correlation between the Global Green Economy Index and poverty rates in developing countries. The authors further demonstrate the relationship between the global environment and national GDP, unemployment, and poverty rates by using cross-sectional data from more than 60 developing countries [5]. Many developing countries, such as China, India, and Egypt, are actively developing sustainable energy sources such as solar photovoltaics. Aligning with sustainable development principles, the green economy model is increasingly recognized worldwide and is being adopted across numerous environmental conservation sectors.

3. Development of Green Economy Policies in China

China, being the largest developing nation, has proactively embraced its role in global environmental conservation and the advancement of a sustainable green economy. Yi and Liu pointed out that the advancement of a green economy presents both opportunities and challenges for not just the central government, but also for every local governing body [6]. Wei et al. pointed out that from 2000 through 2016, China’s green economic growth developed in a balanced manner and achieved a series of distinctive milestones thanks to the efforts of the government enterprises, and other organizations [7].

“Green economic growth” and a ‘low-carbon economy’ have been important goals for China’s economic development. China has always played a key role in global climate governance, taking the initiative to assume international responsibility for combating climate change, and at the same time, to promote the green and low-carbon transformation of its domestic economic structure and sustainable development, in 2020, China announced a “dual-carbon” goal at the 75th United Nations General Assembly, committing to reach the peak carbon dioxide emissions by 2030, and carbon neutrality by 2060. By constructing a policy coherence index model, Li et al. show that China has a significant guiding role in the top-level design and macro-control of “dual carbon” policies [8]. Through the establishment of a carbon emissions trading market, the promotion of energy restructuring and industrial upgrading, green finance and investment, and other means, the “dual-carbon” policy provides economic support and effective incentives for enterprises to take energy-saving and emission reduction measures and achieves low-carbon industrial innovation and digital transformation within the industry, that is advocating an all-encompassing shift towards green economic and social development. The

“dual carbon” policy provides economic support and effective incentives for enterprises to adopt energy-saving and emission-reduction measures and achieves low-carbon industrial innovation and digital transformation in the industry, which promotes a comprehensive green transformation of economic and social development. At the same time, China has been actively seeking international cooperation, such as South-South cooperation, to provide developing countries with technology, equipment, and training to help them cope with global climate change. Wang et al. indicated that environmental policies can stimulate advancements in green technology, highlighting an interdependent and complementary dynamic between green technological innovation and the green economy [9]. China has always attached great importance to green innovation to promote the development of a green economy and has introduced a series of policies and plans, such as the “National Medium and Long Term Science and Technology Development Plan” and “Made in China 2025”, to make green development and technological innovation a national strategy. Through policy measures such as structural transformation, green transportation, energy efficiency improvement, circular economy, and ecological protection and restoration, China has achieved remarkable results in the development of a green economy.

3.1 Financing and Costs of Implementing Economic Policies

Despite the tremendous support and efforts of countries and regions around the globe for the transition to a green economy, the magnitude of the challenges facing this ambitious project should not be underestimated. Barbier points out that sustainable economic development cannot be ensured by wanting green growth. To overcome this, further challenges of sustainability and finance must be addressed [10]. The tension between economic growth and environmental protection has always been a central issue and a major constraint in the transition to green economic development. The development and deployment of green technologies, on the other hand, often require huge investments and high initial costs, which may limit the feasibility and penetration of green projects and even further market conversion rates. But it is undeniable that challenges and opportunities go hand in hand.

For example, Zhang’s study showed that developing countries such as India, Bangladesh, and Pakistan used multiple green financing initiatives to expand environmental protection and confirmed green economic recovery [11]. Thus, despite the relatively high economic pressures faced in the early stages, if one perseveres, one can reap more rapid and far-reaching results on the road to sustainable development.

3.2 Insufficient Innovation in Green Technology

In addition to financial challenges at the time of upfront investment, technological innovation, and breakthroughs are also important constraints to the development of a green economy. In their study, Li et al. noted that the detrimental effects of green innovations on green economic efficiency are particularly pronounced when there is a lack of robust innovation protection and a scarcity of knowledge and technological acumen [12]. Cheng also suggests that established firms (meaning diversified green entrants) undertaking green innovation activities, may suffer from a lack of new green knowledge and skills, which can challenge green innovation performance and even threaten the survival and growth of the organization to some extent [13]. Yang et al. noted that green innovation ecosystems frequently encounter instability, primarily due to the high costs associated with innovation, meager profits, and an insufficient long-term return on investment [14]. To meet these challenges, the government, enterprises, universities, and other institutions are also working together and making unremitting efforts to gradually fill the gaps in the field of science and technology by adopting diversified strategies, such as cross-border integration, human resources training, intellectual property rights protection, and the establishment of innovation accelerators and incubators.

In addition, Cheng et al. proposed that regional green technological advancements can be fostered by the green economy, import trade, foreign direct investment, and local innovation capabilities. They also indicated that the synergy between international collaboration and regional innovation capacity positively influences green tech innovation and that innovative developments in one area can enhance the green technology progress in adjacent regions [15]. Therefore, it is only by adhering to the concept of openness and inclusiveness and deepening international exchanges and cooperation that green technological innovation can be promoted to the greatest extent possible to meet the challenges.

4. Prospects for Green Economy Policies

As countries around the world pay increasing attention to the development of a green economy, technological innovation, industrial upgrading, improvement of the regulatory system, and deepening of international cooperation, coupled with the effective promotion of local governments, the positive response of enterprises and the significant increase in public awareness of environmental protection, the future of the green economy has shown un-

precedently bright prospects. On the policy front, Wang & Zhang emphasized the importance of green policies and institutions in promoting the development and recovery of the green economy in the BRICS [16]. Studies have shown that the outlook for the green economy is reliable and robust. In addition, the study suggests directions for future research to promote sustainable economic growth in the BRICS countries. In terms of financing mechanisms, Zhao et al. used fuzzy hierarchical analysis (AHP) to conclude that green bonds are currently the main source of financing for energy efficiency projects and can increase the green economy recovery rate by about 17 percent per year [17]. In the long run, it will be able to provide sustained funding for companies in the environmental sector and provide a strong impetus for the development of a green economy. In the field of new energy, Hoang et al. suggested that the development of a green hydrogen economy in countries around the world can promote stable socio-economic development and achieve the desired goals of the new era [18]. The development of the green economy is the latest trend and fact, according to Russian scholars Tarkhanova et al. The study's outcomes hold significance for professionals and scholars specializing in strategic management, regional growth, and the economics of innovation [19].

In summary, the green economy is booming globally at a rapid pace and on a wide scale, signaling that human society is moving towards a greener, low-carbon, and sustainable future. This trend not only reflects the global consensus and action on environmental protection but also highlights the inevitability and urgency of the transformation of the economic model.

5. Conclusion

Through an overview and analysis, this paper finds that as green economy policies continue to be promoted and deepened, they will show increasing attractiveness and long-term strategic layout value, a trend that is expected to inspire deeper economic transformation, political dialogue, cultural innovation, social development, and lifestyle change. The dynamic development of green economy policies will not only inject new impetus into economic growth, but also promote environmental protection and social responsibility practices on a global scale, helping countries to work together to maintain ecosystems, combat global warming, create new points of economic growth and employment opportunities, respond to transnational environmental issues, safeguard the harmonious coexistence of human beings and nature, and promote the building of a more prosperous, just and sustainable world. Going forward, investigators have the

opportunity to delve deeper into the domain of green economic scientific and technological advancement and use science and technology as an engine to accelerate the vigorous development of the green economy.

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