

# Analysis of Influence of China's Green Economy on Countries Along the "Belt and Road"

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**Abstract.** This paper focuses on the impact of China's green economy on countries along the Belt and Road. This paper systematically reviews the current status of green economic development in China and examines the influence of China's green economy on countries along the "Belt and Road." The results show that China's green economy has achieved significant success in areas such as renewable energy and new energy vehicles, providing market and investment opportunities for these countries economically, promoting industrial upgrading; exporting technology and experience to improve the environment; and offering institutional and policy references to facilitate regional rule coordination. This study provides strategic recommendations to promote green economic cooperation between China and countries along the Belt and Road, including establishing a green development fund, building a technology sharing platform, formulating differentiated industrial cooperation plans, and enhancing standard exchanges, all aimed at facilitating regional green economic integration and sustainable development. To sum up, this investigation benefits both China and related countries.

**Keywords:** Green economy, Belt and Road, economic growth, environmental improvement, green economic cooperation.

## 1. Introduction

In the development of human society, the relationship between the environment and development is crucial. In contemporary times, global industrialization and urbanization have accelerated, leading to frequent environmental issues such as excessive resource consumption, which severely threaten human survival and sustainable development. Against this backdrop, the green economy, a new model that balances economic, social, and ecological aspects, has garnered widespread attention worldwide and become a core choice for sustainable development in various countries [1]. Internationally, developed countries leverage their technological and financial advantages to actively explore areas like green energy, manufacturing, and finance, building a comprehensive green economic system [2]. Developing countries also formulate strategies, aiming to promote economic growth while effectively addressing environmental challenges [2]. The green economy has emerged as an emerging field in international competition and cooperation, with countries promoting its concepts and practices through various means [3]. As the largest developing country, China has achieved significant progress in green economic development. The government actively integrates the concept of green development into national strategies and has introduced a series of powerful policies to guide resources toward green industries [4]. In the field of renewable energy, China leads the world in installed solar and wind power capacity; green manufacturing is on the rise, traditional industries are accelerating upgrades, and the market share of green products is expanding. At the same time, China has made substantial investments in ecological restoration and pollution control, leading to significant improvements in the environment. Geographically adjacent to countries along the "Belt and Road," China and these countries share a long history of economic and cultural exchanges. Since the implementation of the "Belt and Road" initiative, cooperation between the two sides has been close in multiple fields. The development of China's green economy has brought new opportunities and cooperation space to countries along the route. Green technologies and industrial models are gradually being exported, aiding local economic restructuring and environmental improvement. The impact extends beyond the economic level, with profound significance in cultural exchange and the

dissemination of ideas [5]. Against this backdrop, this paper systematically reviews the current status of green economic development both domestically and internationally, examines the impact of China's green economy on economic growth, environmental quality, institutions, and policies in countries along the route; and proposes strategic recommendations to promote green economic cooperation between China and these countries.

## 2. Current Situation of China's Green Economy Development

In recent years, China's green economy has flourished at an astonishing pace, achieving remarkable success in many key areas and becoming a leader in the global wave of green development [1]. In the field of renewable energy, China has demonstrated unwavering determination and formidable action. In hydropower, with advanced engineering technology and scientific planning, numerous large-scale water conservancy projects such as the Three Gorges Dam have been constructed and are operating efficiently. By 2024, installed hydropower capacity had reached 420 million kilowatts, steadily supplying clean power to the country and some neighboring regions. Its production not only meets a significant portion of domestic electricity demand but also plays a crucial role in optimizing the energy structure [1]. In wind power, with rapid advancements in turbine technology, wind farms have sprung up like mushrooms after rain across vast lands and expansive offshore areas. From the Gobi Desert in the northwest to coastal wind farms in the east, installed wind power capacity has surged past 300 million kilowatts, continuously contributing to the supply of green power [1]. Photovoltaic power generation has also achieved remarkable results, with a large number of distributed and centralized photovoltaic power stations rising from the ground. Installed capacity exceeds 300 million kilowatts, shining brightly whether on urban rooftops or in large-scale photovoltaic bases in deserts and wastelands [1] (See Fig 1). The new energy vehicle industry is thriving, presenting a vibrant and dynamic scene. In the domestic market, new energy vehicles, leveraging their multiple advantages of environmental friendliness, energy efficiency, and intelligence, have consistently ranked high in sales, becoming a popular choice for consumers when purchasing cars [6] (See Fig 2). An increasing number of families are choosing new energy vehicles, not only reducing travel costs but also contributing to environmental protection [6]. In overseas markets, Chinese new energy vehicle manufacturers are actively expanding their presence. Leveraging advanced battery technologies such as lithium iron phosphate and ternary lithium batteries, along with leading intelligent connectivity systems, they offer users a more convenient and smart driving experience. Coupled with high-cost-performance product positioning, they continue to expand their market share globally, making the name of China's green manufacturing increasingly prominent.

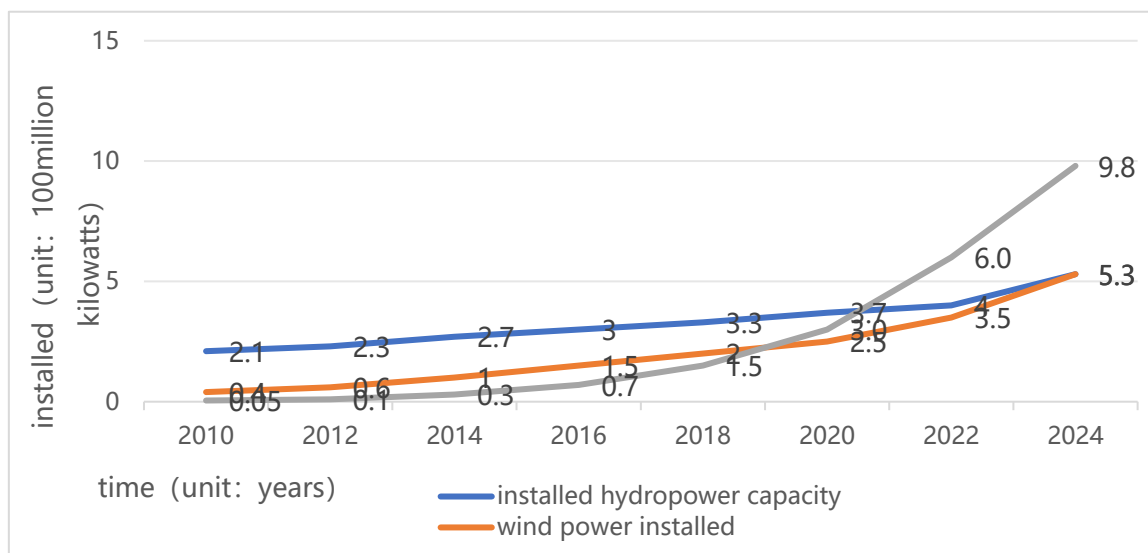
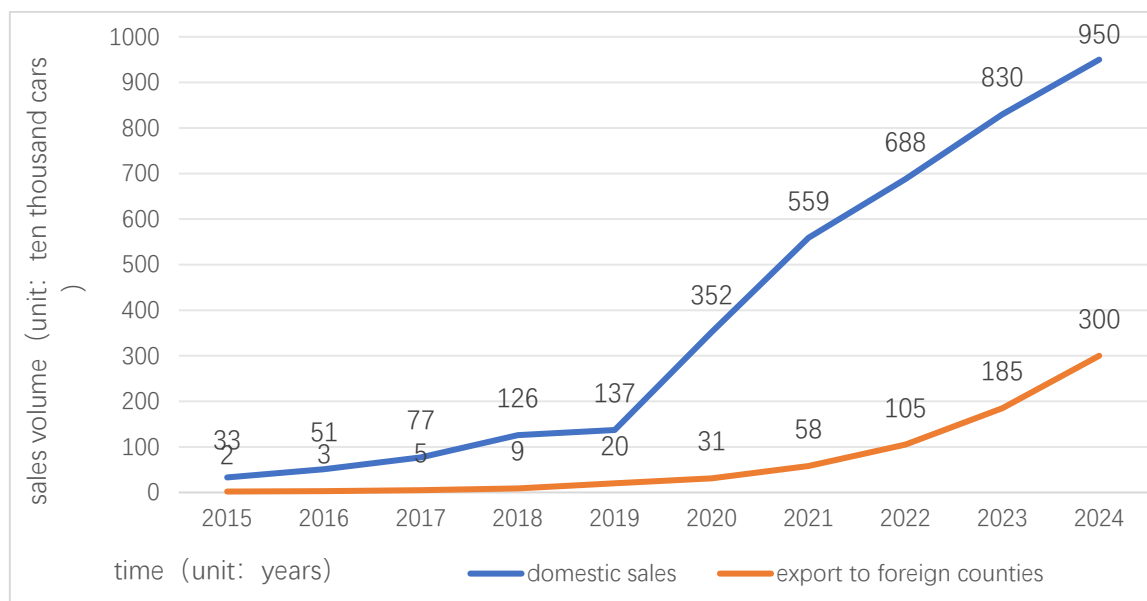


Figure 1. Trend of installed renewable energy capacity



**Figure 2.** Trend of new energy vehicle sales

### 3. Impact of China's Green Economy on Countries Along the Belt and Road

#### 3.1. Economic Impact

China's green economic development has provided vast markets and investment opportunities for countries along the route [7]. Chinese companies have actively engaged in the construction of green infrastructure in "Belt and Road" countries, with projects such as photovoltaic power stations and wind farms becoming notable achievements. During the construction process, a large number of local workers are employed, from engineering construction to technical operation and maintenance, providing abundant job opportunities for the people of these countries, enabling them to earn income through local employment. As projects are put into operation, the continuous supply of clean energy not only effectively alleviates energy shortages but also further reduces energy costs, attracting a large number of high-value-added enterprises to set up operations. This strongly promotes the coordinated development of upstream and downstream industries, facilitating the transformation of industrial structures in these countries from traditional resource-based to green, low-carbon, and high-value-added sectors, injecting lasting vitality into the local economy [8-10].

#### 3.2. Environment Effects

China leverages its technological and experiential advantages in the green economy to actively export advanced environmental technologies and practices to countries along the "Belt and Road," assisting them in enhancing their environmental governance capabilities. In the energy sector, China vigorously promotes clean energy technologies such as solar, wind, and hydropower. To date, it has collaborated on clean energy projects with over 20 countries along the route, helping to build more than 50 large wind farms and solar power stations. This has increased the share of clean energy in these countries by an average of 15 percentage points, effectively reducing reliance on traditional fossil fuels and cutting annual carbon emissions by hundreds of millions of tons. In terms of ecological conservation, China has undertaken numerous ecological restoration cooperation projects with countries along the route. In Southeast Asia, with multiple countries, they have been working with tropical rainforest protection and restoration, establishing over 10 ecological monitoring stations and training more than 500 local personnel. In Central Asia, through measures such as improving forage varieties and reasonably controlling livestock numbers, vegetation coverage on degraded grasslands has successfully increased by 20%, significantly protecting biodiversity and markedly improving the quality of the local environment.

#### 4. Implications

China's policies and experiences in green development have provided valuable references for countries along the route [7]. In the wave of green economic development, China's environmental regulatory system and green industry policies have shown significant effectiveness, attracting many "Belt and Road" countries along the route to draw on them [4]. These countries, combining their own levels of development, resource endowments, and industrial structures, have adapted Chinese experiences to fit their national conditions, formulating green development policy systems that suit their specific circumstances. At the same time, cooperation between both sides in the field of green economy has deepened continuously. Through frequent exchanges and dialogues, they jointly study green rules and standards, promoting the coordination and unification of regional green rules, eliminating trade barriers, and facilitating the free flow of green industry elements, laying a solid foundation for regional green economic integration and moving together toward a sustainable future [11].

#### 5. Conclusion

In the urgent situation of global climate change, a green economy has become an inevitable trend in world economic development. China's significant achievements in the field of green economy have not only laid a solid foundation for its own sustainable development but also brought positive and far-reaching impacts to developing countries along the "Belt and Road." The rapid development of China's green economy demonstrates results such as continuous expansion of renewable energy installations and vigorous growth in the new energy vehicle industry, forming effective models that combine government guidance with market-driven forces, cluster industries, and support from green finance. The impact of China's green economy on countries along the route is comprehensive. Economically, it provides market and investment opportunities, aiding in the optimization and upgrading of industrial structures; environmentally, it exports advanced environmental protection technologies and experiences, promoting the use of clean energy and improving the ecological environment; in terms of institutions and policies, it offers references for countries along the route, facilitating the coordination of regional green rules and standards.

To promote green economic cooperation between China and countries along the "Belt and Road," a multi-pronged approach is necessary. In terms of funding, a special green development fund is planned to be established to integrate resources from all parties, providing low-interest loans and equity investment support for green projects. China will also encourage corporate joint financing and actively innovate financial products to broaden financing channels. On the technology front, China will build a green technology sharing platform, organize seminars and training sessions, provide technical guidance, support talent from these countries to study in China, and enhance collaborative research among researchers. In terms of industrial cooperation, China will tailor differentiated cooperation plans based on each country's resources and industrial foundations, and actively promote cooperation in renewable energy development, green manufacturing transformation and upgrading, as well as ecological conservation and restoration in different regions. In the field of standards, China will strengthen exchanges, jointly develop regional green standards and promote mutual recognition, and actively participate in the formulation of international rules to create a favorable institutional environment.

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