

The Development of China's Low-Carbon Economy Strategies

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Abstract: Based on the new round of global development opportunities, China is developing a low-carbon economy and shouldering the important task of developing modernization. To achieve the long-term development of the Chinese nation, we must be aware of the various practical difficulties in developing a low-carbon economy. Chinese should also conduct in-depth analysis and research on effective measures to develop a low-carbon economy. As China's development of a low-carbon economy continues to accelerate, challenges and dilemmas have emerged, such as the coal-based energy structure, the rapid growth of industrialization, the transformation of the traditional economic model, and the overall backwardness of science and technology. This paper argues that China should continuously adjust the existing industrial and energy structures, strengthen energy conservation, and promote further R&D(research and development)of science and technology related to low-carbon development. In addition, it is critical for China to comprehensively enhance the carbon sink potential, establish a carbon balance trading platform, and thus comprehensively develop China's low-carbon economy.

1. Introduction

In recent years, there have been two main issues of global concern, namely energy shortage, and environmental pollution. Therefore, a low-carbon economy has become an essential strategy for the economic development of countries worldwide. Achieving low energy consumption and emissions in production and living activities can further promote sustainable energy development. It can be viewed that the development of a low-carbon economy depends on the understanding and application of the concept of low-carbon economy in each country. The low-carbon economy is a significant innovation and growth in human civilization's history. It can also be seen as further innovation in the existing economic development model, which is an essential path for China to achieve sustainable development at the economic level.

2. The Concept of the Low-carbon Economy

The keywords of low carbon economy are low energy consumption and low emission. In addition, the benefits of a low-carbon economy lie in protecting the environment while obtaining higher economic benefits and providing vital financial support for the development of society, application, and innovation of science and technology. The story of a low-carbon economy can bring efficient economic benefits and a higher rate of return, but these take a long time to show up.

3. The Development Predicament of a Low-carbon Economy in China

China's energy production ranks second in the world. The same is true for energy consumption, while its carbon dioxide emissions also rank second in the world. Therefore, China attaches great importance to the issue of global climate change [1]. In recent years, China has paid more and more attention to energy conservation and emission reduction and actively responded to the issue of global climate change. China's economy and society are in the process of high-quality development. The traditional energy structure needs to be transformed urgently, and energy emissions are also in development difficulties. Considering the national conditions, changing from the existing economic

model to a low-carbon one will take a long time [2]. In the short term, China still has various problems developing a low-carbon economy, including energy, industry, technology, and trade issues.

3.1 Energy Issues

The proportion of coal in China's energy consumption is too high. Coal consumption in most countries accounts for about 20%, but China's coal consumption accounts for about 70%. In the data of 2020, the proportion of coal in the energy structure is still higher than 60%, which shows that the country's economic development is characterized by High Carbon [3].

3.2 Industrial Problems

After the reform and opening up, China's three major industrial structures have gradually become rationalized, which is in line with the laws of industrial development. However, according to the changes in the international industrial structure, the proportion of China's industrial system is unreasonable, and the agricultural foundation is still fragile, which is the fundamental reason for the slow growth of modernization. Next, China's industrial development level is still deficient, which hinders the further development of agriculture and makes it more challenging to provide advanced technical support for developing other industries. In addition, The development of China's tertiary sector is late, and it is lagging, which restricts the rapid growth of agriculture [4].

From the perspective of agriculture, the structure of agricultural products is not reasonable, and the quality of agricultural products is not high. Most of China's agricultural product processing links still use traditional technology, which hinders the further development of the agricultural product processing industry. China's secondary industry is vast but not strong, which makes the quality of the secondary sector still needs to be improved. Moreover, the development of the secondary industry still ranks at the bottom of the world. Its problems include the R&D efforts being small, the innovation ability of science and technology being low, and the product structure is not reasonable enough. The development of China's tertiary industry started late, and the total amount is small. There are many unreasonable structures as well. The proportion of the tertiary industry in China is about 35%. In contrast, the tertiary sector in most developing countries can account for about half of the entire industry, and the tertiary sector in most developed countries can reach about 70%. At the same time, China's tertiary sector has the problems of a large proportion of traditional service industry, serious product homogeneity, low service level, and low technical level.

3.3 Technical Problems

China's overall scientific and technological development level is relatively low, and its technical R&D capabilities are also feeble, making it challenging to get strong technical support in economic transformation. Developing a low-carbon economy requires the help of advanced and sophisticated technologies. For example, in the development of a low-carbon economy, methane recycling, HFC23 incineration, etc., all need the support of high-end technology. In summary, to switch from a high to a low-carbon economy, we have to invest a lot of cost in technology. So high investment and high-cost technology investment are not sustainable.

3.4 Trade Issues

Compared with developed countries, China's industrial technology content and added value are relatively low, and industrial competitiveness is also weak. We can say that from a global perspective, China's industrial division of labor system is relatively low-end. In international trade, many products exported by China are labor-intensive and resource-intensive. The manufacturing process of these products requires high energy consumption and can cause severe pollution to the environment. Some developed countries have moved these high-energy-consuming industries to China for production, which has caused massive damage to resources and the environment.

4. Foreign Low-carbon Economic Development Strategies

The change in the global climate has profoundly impacted countries worldwide, which has driven

nations around the world to make developing a low-carbon economy an essential task. This paper lists the following two countries, UK and Japan, to analyze the low-carbon economic development strategies to provide some valuable experience for China's development of the low-carbon economy.

4.1 Britain's Low-carbon Economic Development Strategy

Britain started the intro of the first industrial revolution. In fact, from the perspective of its development conditions, Britain was not rich in resources and needed to rely highly on imported energy. Therefore, according to its social needs, the UK had actively put forward the concept of a Low-carbon Economy and set an example to promote it. The UK government encourages domestic companies to improve energy efficiency and continuously supports renewable energy development. At the same time, the government has also issued a climate change agreement, implemented a climate change tax, and established an emission trade mechanism and a carbon trust fund to effectively promote the development of a low-carbon economy in the UK.

4.2 Japan's Low-carbon Economic Development Strategy

After the concept of a "low-carbon economy" was put forward, Japan proposed the concept of a "low-carbon society", and took various measures to build a Japanese low-carbon society. First, Japan has increased its investment in science and technology and continuously innovated and applied science. Secondly, Japan has established a national low-carbon target mechanism and has taken this mechanism as the direction of national industrial efforts. It has also found a carbon emissions trading system and reformed the tax system. Then, Japan strengthens low-carbon implementation in rural and local cities. Finally, it vigorously promotes the knowledge of low-carbon society and conducts rich lectures on low-carbon society so that every citizen can deeply understand the concept of "low-carbon society" as much as possible. They shoulder the responsibility of building a low-carbon society and start from the small things to improve the low-carbon awareness of the people.

5. Specific measures for China's Low-carbon Economic Development

5.1 Improvement of Energy Structure

While developing a low-carbon economy, we had better save energy, improve energy utilization, and scientifically adjust and reasonably plan the energy structure. Also, use less non-renewable energy as little as possible. And on the other hand, use as much alternative and renewable energy as possible.

We will do it in two ways. On the one hand, adhering to energy development and conservation go hand in hand. Energy conservation gives top priority and comprehensively enhances energy efficiency. High energy-consuming industries can be phased out, while for the lighting equipment industry, industrial motor industry, industrial boiler industry, etc., the technical improvement and optimization of these industries should be strengthened. On the other hand, the R&D of new, superior, and renewable energy should be accelerated. But traditional animation, low energy, and fossil energy should be phased out, and the existing energy structure should be continuously optimized.

5.2 Rational Planning for Industrial Development

In China, the optimization and improvement method of the industrial structure is to promote the coordinated growth of the three major industries and build a modern industrial system. First of all, accelerate the growth of ecological agriculture, put energy conservation, resource conservation, environmental protection, and intensive land use in the first place. Constantly pay attention to further innovation and development of product quality. Enhance science and technology's scientific and technological content, continuously improving ecological agriculture's competitiveness and sustainable development [5].

Second, the organic combination of information and industrialization should be strengthened to promote industrial transformation. The government needs to control the scale of high-energy-consuming and high-pollution industries, continuously reduce their proportion, promote the development of high-tech industries, and expand the biological and marine industries. Finally, China

had better actively develop modern service industries, such as logistics services, financial services, consulting services, tourism services, community services, environmental protection industries, etc. Continuously increase the tertiary sector proportion to keep pace with developed countries.

5.3 Realization of Technological Innovation

At present, China's low-carbon technology development level is low, which makes the low-carbon economic development tasks more difficult, so China should also actively introduce advanced low-carbon technology of developed countries. But it is worth noting that usually, the developed countries will not tell us the advanced low carbon technology development details. Therefore, we need to strengthen the R&D of low-carbon technology and the investment in the R&D department to attract more high-quality low-carbon technology R&D talents. Therefore, for developing countries, in addition to actively introducing advanced low-carbon technologies from developed countries, the R&D process of low-carbon technologies in developed countries should also be fully studied. And enhance its low-carbon technology R&D capabilities, strengthen investment in low-carbon technology research and development and provide good treatment to introduce many advanced low-carbon technology talents.

5.4 Strengthening of International Trade Cooperation

In the global industrial division of labor mechanism, China's position is unfavorable compared to developed countries. China's trade structure is relatively unreasonable. In recent years, China has launched a series of targeted reform measures based on its global vision and current international trade cooperation, which can be mainly divided into four parts.

First of all, China is actively changing the growth mode of foreign trade and optimizing and adjusting the industrial structure of import and export according to the current import and export trade situation. And vigorously support the export of Chinese brands, encourage Chinese high-value-added products to be exported overseas, insist on controlling the export volume of high-energy-consuming products, and encourage the export of low-energy-consuming products. Meanwhile, it also encourages the import of energy and strengthens the import of foreign advanced technology and advanced equipment. In addition, China should also strictly enforce the quality of foreign investment, strictly control the quality of foreign investment, scientifically optimize and adjust the foreign investment structure, adopt a series of preferential policies to introduce advanced science and technology, absorb management concepts and experience from developed countries, and attract more senior talents to join the company. After that, China should also strengthen the innovation of foreign investment from the perspective of foreign investment, encourage strong domestic enterprises to enter the international trade market, enter their own Chinese brands into the global trade market, and continuously enhance the international reputation of well-known Chinese brands. In addition, China should actively engage in international energy cooperation activities and work with other countries to develop a low-carbon economy.

6. Conclusion

To sum up, all countries and regions worldwide are paying attention to developing a low-carbon economy, advanced low-carbon technologies, and optimizing and adjusting the existing industrial structure. This is mainly due to global warming and triggered the world's focus on the development strategy of the low-carbon economy. Global climate change is not just an environmental problem but a human survival and human development problem. China should focus on the national conditions, adopt reasonable independent R&D means to promote low-carbon economic development, encourage enterprises to develop low-carbon industries, control energy-intensive industry scales, and comprehensively build low-carbon countries. Take China's economy one step further and lay a solid foundation for the future.

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