

Analysis on the High-Quality Development of Forest Products Industry Under the Background of "Carbon Peaking and Carbon Neutrality"

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Abstract: Forest products industry is a sustainable green industry. It not only raw materials can absorb and fix carbon dioxide in the atmosphere during the growth process, but also carbon emissions during product processing and manufacturing are much lower than other basic materials such as steel and cement, and they have carbon storage capabilities and carbon reduction capability. The proposal of "carbon peaking and carbon neutrality" puts forward new requirements and points out the direction for the high-quality development of forest products industry. At first, this paper defines the connotation of high-quality development of forest products industry under the background of "carbon peaking and carbon neutrality", then summarizes the high-quality development of forest products industry, which thinks the forest products industry has actively explored ways of high-quality development and achieved remarkable results. At the same time, the paper points out some difficulties faced by further development, such as insufficient supply of raw materials, lack of carbon storage and carbon emission standards. In order to achieve the goal of "carbon peaking and carbon neutrality", the paper proposes measures to promote high-quality development of forest products industry, which includes starting from solving the shortage of raw material supply, improving the carbon storage capacity of products, expanding the industrial chain, and accelerating the construction of a series of standards for the high-quality development of the forest products industry.

Keywords: Carbon Peaking, Carbon Neutrality, Forest Products Industry, High-Quality Development

1. Introduction

Since the Industrial Revolution, with the rapid economic development and the increase of population, the greenhouse effect has become increasingly stronger, extreme climates have frequently occurred, and climate change brought about by global warming has seriously threatened human beings [1]. Since the outbreak of COVID-19, countries have paid more attention to green and low-carbon development, and more than 130 countries have set an "ambitious goal of achieving carbon neutrality" around the middle of this century [2], in order to let the world economy "green recovery" after the epidemic. In recent years, my country has also been actively committed to promoting green development. On September 22, 2020, General Secretary Xi Jinping proposed at the general debate of the 75th United Nations General Assembly:

"China will increase its nationally determined contribution, adopt more powerful policies and measures, and strive to peak carbon dioxide emissions before 2030, striving to achieve carbon neutrality by 2060" [3]. "carbon peaking and carbon neutrality" is my country's inherent requirement to achieve sustainable development, and it is also the proper meaning of building a community with a shared future for mankind. The realization of "carbon peaking and carbon neutrality" is a systematic project, involving every levels of the economy and society, and the ultimate goal is to build a low-carbon and zero-carbon modern industrial system.

Forest products industry is a sustainable green industry. It not only raw materials can absorb and fix carbon dioxide in the atmosphere during the growth process, but also carbon

emissions during product processing and manufacturing are much lower than other basic materials such as steel and cement, and they have carbon storage capabilities and carbon reduction capability. under the background of "carbon peaking and carbon neutrality", it is of great significance to accelerate the forest products industry high-quality development. However, restricted by various subjective and objective factors, forest products industry still faces many difficulties. In view of this, this paper aims to define the connotation of high-quality development of forest products industry under the background of "carbon peaking and carbon neutrality", point out the difficulties of forest products industry in combination with the actual situation, and propose countermeasures to promote high-quality development.

2. The Connotation of High-Quality Development of Forest Products Industry

The modern forest products industry, with the wood processing industry as the core, vigorously develops the production and operation activities associated with it, which covers many fields such as lumber production, wood-based panel production, wood pulp and paper, and forest products and chemicals [4]. It mainly includes four categories: wood processing, wood furniture manufacturing, pulp and paper making, and forest products and chemicals. Among them, wood processing products mainly include sawn timber, wood-based panels, wood products (except furniture), bamboo, rattan and palm grass products, etc., and wood furniture manufactured products are mainly include wooden furniture, pulp and paper products, etc., forest chemical products are mainly include activated carbon, rosin, etc. [5]. The forest products industry is an important part in our country's economy, With the transformation and upgrading of industries and green and low-carbon development in recent years, the forest products industry has gradually changed its development concept and gradually paid attention to high-quality development with equal emphasis on scale and efficiency, which is highly consistent with the inherent requirements of "carbon peaking and carbon neutrality".

In essence, the goal of "carbon peaking and carbon neutrality" is consistent with the goal of high-quality development, both of which point to sustainable development. The "carbon peaking and carbon neutrality" strategy provides a clearer idea and a clearer implementation path for the high-quality development of the forest products industry. Specifically, the high-quality development of the forest products industry mainly includes the following three meanings under the background of "carbon peaking and carbon neutrality": First, scientific and rational resource allocation. The scientific and rational way of resource allocation is directly related to the high-quality development. The raw material of forest products industry is forest resources. Although forest resources are renewable resources,

their growth cycle is long. For example, excessive demand and excessive deforestation by the forestry industry will lead to damage to their ecological benefits [6]. Therefore, adopting a scientific and rational resource allocation method to develop the forest products industry, which can guarantee the sustainable and steady development of the forest products industry. For example, by increasing investment in technological innovation, forestry industry enterprises have improved production processes and production equipment to reduce the waste and loss of forest resources with the goal of improving the level of forest resource utilization. Second, high-quality product supply. The products of the forest products industry include wood processing products, wood furniture manufacturing products, pulp and paper products, and forest products chemical products. On the whole, in order to meeting the needs of production and living, the products of the forest products industry also have the functions of carbon replacement and carbon storage, which can be said to be carbon pools. For example, paper products can be recycled and reused, enabling carbon storage. Therefore, in addition to facilitate the realization of the goal of carbon peaking and carbon neutrality, forest products industry should give full play to the functional advantages of its products such as carbon substitution and carbon storage, and promote the supply-side structural reform of products by means of process transformation, research and development of new products, etc., and further improve products. It has the functions of carbon solidification and carbon storage, builds a high-quality product supply system, and builds it into an important carbon bank. Third, efficient development efficiency. The level of development efficiency is an important indicator for the high-quality development of the industry. The forest products industry should make full use of the achievements of the new round of scientific and technological revolution and industrial revolution, innovate the production and operation mode, expand and extend the industrial chain, and build a more low-carbon, green and efficient industrial system. In addition, formulating national standards for carbon storage and carbon emissions, which effectively guides the forest products industrial enterprises to carry out high-quality operation activities and improves the development efficiency of the industry.

3. The Situation and the Difficulties of High-Quality Development of My Country's Forest Products Industry

3.1. The Situation of High-Quality Development of My Country's Forest Products Industry

After more than 40 years of reform and opening up, the forestry industry has become an important part in my country's economic development. In recent years, with the proposal of policies such as low-carbon economy and green transformation, especially the proposal of the goal of "carbon peaking and carbon neutrality", the forest products industry

has opened up a road of high-quality development and achieved good results. At present, The annual output value of the forestry industry exceeds 3 trillion yuan, accounting for nearly 40% of the total output value of the forestry industry [7]. A number of technological breakthroughs have been made, such as the world's first bamboo winding composite pipe technology, which is a major breakthrough in green materials field. It enhanced processing technology increases the added value of products by more than 20% [7]. In order to accelerate the high-quality development of the forest products industry, regions have also carried out exploration and innovation. For example, taking the advantages of forest resources, Jianou City, Fujian Province adheres to the principle of green and low-carbon development, creates the new highland for the green and high-quality development by increasing investment in research and development, using new technologies and processes. In 2020, the total output value of forest products industry reach 18.524 billion yuan, have 455 forest products industry enterprises, build a bamboo branch for bamboo shoots and a bamboo cultivation base for the Chinese bamboo and rattan brand cluster, and initially form the pattern of forest products industry consisting of wood and bamboo processing, forest products chemical processing, and paper industry, which shows a good trend of green, circular and sustainable development [8].

3.2. The Difficulties of High-Quality Development of My Country's Forest Products Industry

Although the path of the high-quality development of forest products industry has been explored under the background of "carbon peaking and carbon neutrality", forest products industry still faces many difficulties in terms of the goal of "carbon peaking and carbon neutrality" and the connotation of the high-quality development of forest products industry.

First, raw materials' supply for forest industry is insufficient. With residents' consumption demand continuous increase and forest products industry continuous development, the forest products industry's demand for raw materials is increasing, and the importance of forest resources is becoming increasingly apparent [9, 10]. The raw materials of the forestry industry are forest resources, which are both renewable resources and scarce resources. This is due to their long growth cycle and an important barrier for the ecological environment. In order to protect the ecological environment, the forest industry cannot unrestricted harvesting of forest resources to meet the needs of development. For a long time, limited by the supply capacity of domestic forest resources, the supply of wood resources in my country has been in a state of shortage, which needs to be met through a large number of imports [11], and my country's dependence on foreign wood is about 50%. However, in recent years, countries around the world have paid more and more attention to the protection and construction of the ecological environment, and policies have been issued to restrict the export of forest resources, especially the export of wood, which leads to a serious

shortage of raw materials for the high-quality development of the forest products industry.

Second, the forest industry lacks carbon storage and carbon emission standards. China's forestry standardization work is still in its infancy. under the background of "carbon peaking and carbon neutrality", high-quality development requires some guidance of relevant standards. At present, under the leadership of the China Forest Products Industry Association, the "Guidelines for the Implementation of Carbon Neutralization of Forest Products Industry Enterprises" has been established, which is a group standard on the carbon emission accounting method of forest products industry enterprises. In addition, my country's forest products industry has not established corresponding national standards and group standards for carbon storage and carbon emissions. It is difficult to form a high-quality product supply system to help achieve the goal of "carbon peaking and carbon neutrality"

Third, the overall competitiveness of the forest products industry is not strong. Although the forest products industry is an important part of my country's forest products economy and has developed rapidly since the reform and opening up, its overall competitiveness is not strong against high-quality development and other countries. The reason is that, on the one hand, the industrial chain is still imperfect, and the overall industry has not formed a large-scale development model. Generally, the technical content of products is low, the added value of products is not high, and they are in the industrial chain's low-end, lacking in international competition [12]. On the other hand, government incentives and support are not enough. Compared with steel, cement and other industries, the forest industry is a low-carbon industry, but the extensive production mode still exists, and the production of paper and forest chemical products still has high pollution and high energy consumption [13]. Although the government attaches great importance to the forest products industry development, the government's support and incentives are insufficient in the process of forest products industry enterprises' transformation and upgrading, and it mainly depends on the investment of enterprises themselves. It is difficult to achieve the expected effect only by the investment of the enterprise itself [14], and the effect of industrial upgrading and transformation is not good, which restricts the high-quality development.

4. Suggestions for Promoting the High-Quality Development of Forest Products Industry

The goal of "carbon peaking and carbon neutrality" was proposed, which has given the forest products industry an era mission. Therefore, the forest products industry should adhere to green and low-carbon development principle, accelerate innovative development, solve the development dilemma, achieve high-quality development, and help achieve the goal.

4.1. Focus on Solving the Shortage of Raw Material Supply

Insufficient supply of raw materials is the core and key problem that seriously restricts forest products industry development. Under the background of "carbon peaking and carbon neutrality", how to protect the ecological environment and ensure continuous supply of raw materials is an important issue for forest products industry. It is necessary to develop as many raw materials as possible and improve the utilization rate of raw materials [15]. On the one hand, making every effort to revitalize the stock. That is, using the existing wood scientifically and reasonably, which takes innovative development as the guide, and continuously improves forests' utilization rate by new technologies, new processes and new equipment. For example, making full use of "three surplus" timber, secondary fuelwood and "leftovers" of medium and small diameter timber, and using new technologies and new processes to produce boards, which includes wood fiberboard, particleboard and paper wood. It not only help reduce the cost of raw materials loss, and it is beneficial to increase the supply of raw materials. In addition, increasing recycling more and more waste wood, which generates from the renovation of old houses, furniture renewal, and building decoration, and improving the comprehensive utilization rate of wood. On the other hand, increasing the increment. That is, strengthen the construction of raw material bases. The forest products industry is composed by small and medium-sized enterprises now. In order to guarantee raw materials supply, the forest products industry enterprises form industrial alliances or industry alliances through "grouping", promote the construction of raw material bases jointly, and improve forest resources growth rate and forest carbon sink capacity by introducing new technologies.

4.2. Make Every Effort to Improve the Carbon Storage Capacity of Products

The products of forest products industry have carbon storage function. If the quality of the product is better and the service life is longer, its carbon storage capacity can be extended. Therefore, under the background of "carbon peaking and carbon neutrality", the forest products industry enterprises should unite to accelerate scientific and technological innovation and strengthen industry-university-research cooperation by integrating all resources, which promotes green, high-performance, multi-functional, and longer-life-cycle wood forest products manufacturing technology to research and application and improves the carbon storage capacity of products [16]. For example, tracking and analyzing advanced technologies related to the development of the wood furniture industry, such as optoelectronics, chemistry, nanotechnology, energy saving, environmental protection, health, and intelligence, and encouraging leading wood furniture enterprises to develop environmentally friendly wood coatings such as UV and water-based coatings, wood modification, wood drying, environmental protection technology and other projects that

advance wood furniture industry sustainable development.

4.3. Actively Expand and Extend the Industrial Chain

For the high-quality development of the forest products industry, expanding and extending industrial chain is the key. The improvement of the industrial chain is directly related to the improvement of industrial competitiveness. Therefore, it is necessary to accelerate the extension to the upstream and downstream of the forest products industry, build a complete industrial chain, and enhance the competitiveness of my country's forest products industry. For example, speeding up bamboo product processing industry development, actively cultivating the industrial chain of "bamboo raw materials - primary processing - deep processing - product sales", and focusing on the deep processing of bamboo wood-based panels, bamboo floors, bamboo furniture, bamboo cabinets, bamboo handicrafts, etc.; Guiding enterprises to accelerate new technologies and new products development, supporting emerging industries such as bamboo activated carbon and bamboo fiber materials, improving bamboo's utilization rate and added value, which bamboo industry to the mid-to-high end. Another example is to promote wooden furniture industry chain development, promote the development of wooden furniture in the direction of networked collaborative manufacturing and service-oriented manufacturing, which improves the competitiveness of wooden furniture. In addition, the government should further improve supporting policies, guide the forest products enterprises to promote industrial transformation and upgrading, and jump to high end of the value chain.

4.4. Construct the Standards for High-Quality Development of the Forest Products Industry

Under the background of "carbon peaking and carbon neutrality", the high-quality development of forest products industry need to construct a series of standards. Therefore, developing the carbon neutrality standard for forest products industry, the high-quality development standard for wood processing industry and wood furniture manufacturing, low-carbon standard for pulp and paper, chemical greening standards by combined with the goal of "carbon peaking and carbon neutrality" to promote the high-quality development of the forest products industry, which combines the goal of "carbon peaking and carbon neutrality" and the requirements of high-quality development.

5. Conclusion

Under the background of "carbon peaking and carbon neutrality", the high-quality development of forest products industry has been given more requirements. Our country's forest products industry has actively explored ways of high-quality development and achieved remarkable results now, but it still faces development bottlenecks, such as insufficient supply of raw materials, lack of carbon storage and carbon emission standards. In order to meet the

requirements of "carbon peaking and carbon neutrality", the forest products industry should unswervingly adhere to green and low-carbon development principle, and starting from solving the shortage of raw material supply, improving the carbon storage capacity of products, expanding the industrial chain, and accelerating the construction of a series of standards for the high-quality development of the forest products industry, which promotes the high-quality development of the forest products industry.

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