

# The Way of Low Carbon Economic Development in Manufacturing Industry

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## Abstract

Now the concept of low-carbon economy prevails in China, which requires that while promoting economic development, we must pay attention to environmental protection and energy conservation, so as to implement the sustainable development policy and effectively improve our international competitiveness. Under such circumstances, the development of all walks of life in our country is facing serious challenges, among which the manufacturing industry consumes a lot of energy. In the process of development, we must conscientiously implement the concept of low-carbon economy in accordance with our own actual situation, in order to achieve sustainable development. Based on the above background, this paper briefly outlines the development status of manufacturing industry in China under the background of low-carbon economy, and explores specific development ways, in order to promote the manufacturing industry to achieve win-win economic and social benefits.

## Keywords

Manufacturing industry; low-carbon economy; Development path.

## 1. Preface

As a new mode of development, low-carbon economy has attracted widespread attention of the society and put forward higher requirements for the development of China's manufacturing industry. Therefore, in the future development of manufacturing industry, we must change the traditional development mode, pay attention to technological innovation and industrial adjustment, and achieve leapfrog development under the guidance of low-carbon economic concept, so as to enhance the competitiveness of the industry while meeting the standards of low pollution, low energy consumption and low emissions, and form a strong industrial driving force, so as to push forward. To promote the healthy and sustainable development of China's economic market economy.

## 2. Development of Manufacturing Industry in China under the Background of Low Carbon Economy

### 2.1. Energy Consumption Status of Manufacturing Industry in China

China's manufacturing industry consumes enormous energy, and there is a serious phenomenon of energy waste. The annual energy consumption is more than half of the total national energy consumption, and in recent years it has shown a sustained growth trend. It can be seen that the development of China's manufacturing industry is still excessively dependent on energy resources, the development advantage is not obvious, it is difficult to achieve breakthrough development.

## **2.2. Current Situation of Production Efficiency in China's Manufacturing Industry**

China's manufacturing industry has a huge number, but the production efficiency is generally not high, making the overall international competitiveness of manufacturing industry is low, which is not conducive to the long-term development of manufacturing industry. In recent years, the domestic price level has increased significantly, and the existing advantages of labor, raw materials and energy prices have disappeared, which has led to the increasingly obvious underground problems of manufacturing productivity and the large consumption of energy resources, which seriously violates the concept of low-carbon economic development. In the specific development process of manufacturing industry, backward management level and insufficient technological innovation ability have resulted in low productivity, huge consumption of energy resources and other issues, and the industry's economic profit is small, which ultimately restricts the overall development of manufacturing industry.

## **3. Ways to Develop Low Carbon Economy in China's Manufacturing Industry**

### **3.1. Adjusting Energy Structure and Reducing Energy Consumption**

At this stage, China's manufacturing industry is in a rapid development stage, energy and resource consumption increases, and in the process of development, low-carbon energy application efficiency is low, resulting in an increase in carbon emissions, which has a tremendous impact on the ecological environment. Therefore, in the context of low-carbon economic development, relevant departments should change the original energy structure and improve the efficiency of energy use, in order to practice the concept of low-carbon economy and promote the rapid and sustainable development of China's manufacturing industry. For example, in a certain area of northern China, manufacturing industry is the main body of energy consumption in this area. The local government fully realizes the importance of low-carbon economic concept, pays attention to the adjustment of energy structure in the development of manufacturing industry, and implements the development strategy of combining short-term goals with long-term goals. Specific measures are taken as follows: 1. Promoting energy in the short term; The main energy used in the development of manufacturing industry in this region is coal. It is difficult to change the main energy structure in the short term. Therefore, in the specific work, the staff improve the efficiency of coal resources through technological innovation, so as to enhance the production efficiency of manufacturing industry; Second, the long-term goal is to effectively improve energy. Source structure, first of all, the relevant departments pay attention to controlling the source, introducing energy with low carbon density in the early stage of reproduction, in which natural gas is the main resource in the region; secondly, reasonable control of carbon emissions in the intermediate stage of production, changing the original process and technology with high carbon emissions, and studying and introducing new technology, so as to reduce the second. Carbon dioxide emissions can alleviate energy tension. Finally, at the end of reasonable control, carbon dioxide emissions from production process can be dealt with scientifically and effectively, relying mainly on carbon sequestration and conversion and carbon capture technology. Policies should be encouraged and supported, and reasonable control should be achieved through price compensation and carbon tax. Effective legal intervention measures should be taken when necessary.

### **3.2. Creating Green Supply Chain and Realizing Coordinative Development**

While manufacturing industry creates a lot of wealth, it also produces a lot of waste, including energy waste, scrap products and raw material waste, which is not treated timely and effectively due to technical constraints or weak environmental awareness of enterprises,

resulting in environmental pollution. Based on this, under the influence of the concept of low-carbon economy, relevant departments and units must create a green supply chain to achieve coordinated development. For example, in the process of manufacturing industry development in a certain region of northern China, every link should be rationally planned to ensure the environmental protection of manufacturing production. In the planning link, as the starting point of the supply chain, the staff must make systematic planning, design the development plan of the green supply chain, and form a specific plan to ensure the overall effectiveness of the supply chain construction link; in the procurement link, mainly including the procurement of equipment, raw materials and use of resources, in mining. In the process of purchasing, we should adhere to the concept of environmental protection and low carbon, try our best to choose services or products with less damage to the environment, and find alternatives for materials with larger carbon emissions.

### **3.3. Innovating Industrial Cluster to Achieve Leap-forward Development**

Industrial cluster is an important support for the development of manufacturing industry. Under the concept of low-carbon economy, in order to achieve the healthy and sustainable development of manufacturing industry, we must pay attention to the innovation of industrial cluster. In the process of industrial cluster innovation, innovative enterprises should be the main body, brand products and technology-intensive products should be set as the main content of development, business models and organizational networks should be the focus of development, and then an advanced development environment should be formed to promote industrial upgrading. For example, in the process of manufacturing development in a northern city of China, the government based on the original local motor vehicle city, equipment manufacturing park and industrial zone, rationally layout, optimize the industrial structure, and then form an advanced industrial cluster. At the same time, the new industrial cluster will focus on mining machinery, cement production, motor vehicle matching, rail transit and new energy equipment. The other side will attract investment and introduce a number of leading enterprises and corresponding supporting projects. In the process of development, the government has strengthened its support and cooperated with leading enterprises to build a technical service platform to provide effective technical support for the development of low-carbon economy. After the construction of innovative industrial clusters, the manufacturing industry in this region has changed the traditional extensive development model, improved its own production efficiency under the intensive management model, and greatly reduced carbon dioxide emissions.

### **3.4. Build a Platform of Production, Teaching and Research to Enhance the Ability of Independent Innovation**

At the present stage, the implementation of low-carbon economic concept needs the effective support of technology. In the traditional development process, the manufacturing industry in China only pays attention to economic output, but does not pay attention to the efficiency of energy resources utilization and the conversion rate of technological achievements, which leads to the unsatisfactory economic benefits of pharmaceutical industry, and even has a serious impact on the environment in the production process. Under this new situation, the development of manufacturing industry should focus on technological innovation, which can drive productivity, reduce carbon dioxide emissions in the process of improving production efficiency, and ultimately achieve low-carbon economic development results. For example, in the process of manufacturing industry development in a certain area, we realize the importance of university research in promoting the transformation of scientific research results. In the specific development, we should carry out the joint development strategy between University and enterprise. Based on the principle of "low-carbon environmental protection, scientific development" and the real needs of local manufacturing industry development, we should set

up a project discussion group and pay attention to the conversion rate of technology, so as to make the manufacturing industry. Development lays a solid foundation.

#### 4. Concluding Remarks

In summary, China's manufacturing industry is still in the stage of industrialization for a long time in the future, but we must take the low-carbon economy as a new opportunity to develop, adjust the energy structure, reduce energy consumption, and create a green supply chain to achieve coordinated development of the manufacturing industry. On the basis of the development of the original manufacturing industry, we should innovate industrial clusters, achieve leapfrog development, pay attention to school-enterprise alliance, build a platform of production, learning and research, and enhance the ability of independent innovation, so as to enhance the technology conversion rate, provide effective technical support for the development of manufacturing industry, effectively promote the healthy and sustainable development of manufacturing industry in China, and achieve good ecological civilization benefits.

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