

Research on the Path of Realizing the Goal of "Double Carbon" in Anshan

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Abstract: The strategy of achieving peak carbon neutrality advocates a green, environmentally friendly and low-carbon lifestyle and accelerates the pace of reducing carbon emissions, which is conducive to guiding green technology innovation and improving the global competitiveness of industry and economy. Based on the theory of environmental management, this paper analyzes the existing problems and obstacles in realizing the goal of "double carbon" in Anshan, and puts forward countermeasures and suggestions from the government, enterprises and the public to strengthen the construction of a new path to achieve green and low-carbon development in Anshan.

Keywords: Carbon peak carbon neutral, Low-carbon development, Countermeasures.

1. Introduction

"Peak carbon neutrality" ("Double carbon" for short) is China's goal to peak carbon dioxide emissions by 2030 and strive to achieve carbon neutrality by 2060. Green low-carbon and win-win economic and social development is the only way to achieve sustainable development. China continues to push forward the adjustment of its industrial structure and energy structure, vigorously develop renewable energy, accelerate the planning and construction of large-scale wind power and photovoltaic base projects in desert, Gobi and desert areas, and strive to balance economic development and green transformation simultaneously.

This paper takes Anshan City as an example to fully implement the relevant spirit of "carbon peak carbon neutrality", strengthen the strategic positioning of the near zero carbon and zero carbon emission demonstration project, combine the construction of the demonstration project with the economic and social development needs of the city, and implement dynamic management. We will resolutely suspend the approval and construction of projects that do not meet the requirements of national industrial planning, industrial policies, "three lines, one single order", planned environmental impact assessment, capacity replacement, coal consumption reduction replacement and regional reduction of pollutant emissions. We will strengthen the management of energy conservation by key energy-using units, improve the construction of an online energy consumption monitoring platform, and evaluate and assess the responsibility of key energy-using units for their energy conservation targets. Through the construction of near-zero carbon emission demonstration project, we will cultivate new growth points, new driving forces and new paths for green and low-carbon development, promote Anshan to continuously improve the quality and efficiency of green development, and lay a solid foundation for Anshan to achieve carbon peak and carbon neutrality in an all-round way.

2. Problems in Achieving The "Double Carbon" Goal in Anshan

2.1. The government lacks unified supervision

The government's legal system on green consumption is

not perfect. It lacks relevant legislation and special green consumption law. Existing laws and regulations do not reflect the concept of low-carbon development and lack detailed regulations for low-carbon enterprises. The government does not give enough support to green products, and the government lacks economic subsidies, policies and credit support to low-carbon enterprises.

2.2. High energy consumption in iron and steel enterprises

Anshan is the cradle of steel, iron and steel enterprises are energy-intensive enterprises, the production process produces a large number of pollutants, resulting in excessive energy consumption, iron and steel enterprises energy efficiency is low, all kinds of energy consumption are higher than the world average standard, among which, the comprehensive energy consumption of tons of steel is about 17% higher, the new water consumption of tons of steel is about 9 tons higher, Because the energy consumption cycle utilization rate of iron and steel enterprises is not high, the average annual energy consumption is higher than about 30 million tons of standard coal, the energy consumption of resources generated accounts for about 15% of the total energy consumption of Chinese industrial production, compared with the advanced science and technology level of developed countries in Europe and the United States, large and medium-sized iron and steel enterprises annual average tonnage steel comprehensive energy consumption is about 13% higher, Total energy consumption is about 10% higher. In recent years, iron and steel output rose sharply, the pollution to the environment is also more serious, according to the last few years nationwide statistics shows, in 1980, our country iron and steel output reached 37.12 million tons, the total energy consumption rose to 75.74 million tons of standard coal, steel comprehensive energy consumption was 1.7 tons of standard coal; In 2005, iron and steel output reached 349 million tons, energy consumption totaled 258.62 million tons of standard coal, and comprehensive energy consumption per ton of steel was 0.741 tons of standard coal. In 2022, the comprehensive energy consumption per ton of steel will be 0.602 tons of standard coal.

2.3. Serious pollutant discharge

The production of Anshan enterprises in the production process, produce a large number of pollutants, including solid wastes, wastewater, waste gas and other harmful substances, due to the rapid growth of enterprise output, the total amount of pollutants discharge inevitable growth, the enterprise is still the largest household of pollutants discharge in our country, threatening the natural environment, restricting the long-term development of enterprises.

(1) Solid waste. Solid waste refers to solid and semi-solid pollutants produced by enterprises in various production links, mainly including waste ore in raw materials, steel slag, dust, industrial waste and other solid wastes produced in the production process. In 2022, solid waste from enterprises accounted for about 17 percent of the total solid waste, of which waste residue emissions accounted for about 7 percent of the total industrial emissions, soot emissions for about 3 percent of the total industrial emissions, and dust emissions for about 7 percent.

(2) waste gas. The exhaust emission of enterprises mainly includes a large number of smoke dust and chemical gases, which contain a large number of pollutants, such as CO₂ emission of tons of steel, COD emission of tons of steel, SO₂ emission of tons of steel and a small amount of H₂S. In recent years, due to the mass production of enterprises, resulting in an increasing trend of exhaust gas volume year by year, causing serious harm to the environment, according to the statistics in 2022, exhaust gas emissions as high as the country's total emissions of the second, the annual total emissions reached 5,098.8 billion m³, compared with last year more than 99.8 billion m³, showing an increasing trend.

2.4. Consumers have weak awareness of low-carbon consumption

First, when choosing products, consumers first consider the quality and price of the available products for sale, while ignoring the damage to the ecological environment caused by the purchased products. Second, the proportion of low-carbon consumers is still low. Low-carbon consumption behavior has not yet been popularized, and green consumption is still in its infancy. Third, the level of consumer income is low. The sales price of low-carbon products is generally high, which requires consumers to have high consumption power. However, the overall income of consumers in Anshan is generally not high, and most consumers' income is in the middle and low stage, which cannot meet the needs of purchasing low-carbon products. Low-carbon consumption behavior lags behind the awareness of green consumption, and people's low-carbon consumption behavior still cannot be widely implemented.

3. Countermeasures and Suggestions for Anshan To Achieve the Goal Of "Double Carbon"

3.1. Government aspects

(1) Develop corresponding preferential policies to encourage residents and enterprises to produce and consume energy-saving products. Encourage consumers to purchase energy-saving products more, and as large public enterprises such as natural gas, they should provide a portion of their operating expenses as incentives, which can better promote consumers' enthusiasm for purchasing energy-saving products. Among them, if consumers purchase energy-saving cars, they will enjoy certain preferential policies when

purchasing cars. Alternatively, cash refunds can be given to users who purchase energy-saving household appliances. For energy-saving related products, tax reduction and exemption policies should be implemented. In the financial budget, tax reduction and exemption policies should be implemented for designed efficient and energy-saving residential buildings. The government should provide certain policy support for the development of energy-saving products, and banks should also provide certain loan support for the development of energy-saving products, while encouraging residents to purchase and use these energy-saving products more.

(2) The government can only issue reward and punishment measures to make enterprises more proactive in reducing pollution. According to the relevant regulations of sulfur dioxide emission rights, if an enterprise can significantly reduce sulfur dioxide emissions, it can obtain the remaining emission rights, and the enterprise can sell the emission rights to obtain a certain economic return. For these enterprises with residual carbon dioxide emissions, The government can announce praise and increase the next year's financial allocation. Some enterprise units, although their emissions exceed the national emission limit, can purchase the remaining emissions (emission rights) of other enterprises by purchasing them due to their importance. At the same time, the government also supervises these enterprises to reduce carbon dioxide emissions through methods such as updating old production equipment and emission systems, and imposes fines on enterprises that fail to implement emission reduction measures according to regulations.

3.2. Enterprise aspect

(1) Promote green production and reduce energy consumption. Anshan is a steel enterprise. Steel enterprises should transform production technologies and equipment that consume a lot of energy and cause serious pollution, increase investment in environmental protection funds and innovation capabilities, develop environmental protection products, introduce advanced science and technology, utilize energy-saving and emission reduction production equipment, promote green production, and increase publicity for green production to improve the overall green production level of steel enterprises, For small and medium-sized steel enterprises with poor green production capacity, regular training on green production technology should be provided to strengthen the level of green production. Priority should be given to environmental management funds from environmental protection departments to support small and medium-sized enterprises and improve their ability to install clean production equipment. Improve production processes and reduce energy consumption during the production and operation process. Iron and steel enterprises have made structural adjustments to energy, utilizing energy reuse measures in the production process of products, and continuing to use recycled energy as secondary raw materials. For example, the gas generated by coke ovens and blast furnaces is recycled as fuel for heavy oil, which not only reduces the purchase of natural gas, heavy oil, and other fuels, but also improves the effective reuse of residual heat energy, reducing environmental pollution. The recovery of these reusable energy sources enhances energy utilization efficiency, Reducing excessive waste of natural resources and energy can help steel companies implement energy-saving management strategies.

(2) Establish a low-carbon production concept. Firstly,

enterprises should receive centralized training on low-carbon production guidance, timely interpret national policies to producers, and convey the national spirit of low-carbon production and ecological protection. Secondly, the production process also needs to strictly implement "low-carbon management", clean and recyclable production processes, resource conservation, etc., establish a green development concept, and provide better green ecological products for society. Thirdly, actively disclosing information on energy efficiency, water efficiency, environmental performance, carbon emissions, and other aspects of products and services, promoting the implementation of enterprise product standard disclosure and supervision systems, and establishing the image of green enterprises and products through low-carbon activities can help convey the low-carbon characteristics of enterprises to consumers, thereby establishing a friendly green image. Fourthly, low-carbon enterprises need to continuously innovate in technology, methods, raw materials, and sales channels, reduce the research and development costs and circulation costs of green products, promote consumer low-carbon consumption behavior, and through technological improvement and innovation, not only can environmental costs be reduced in the production process, but also provide affordable low-carbon products. Strengthen low-carbon marketing.

3.3. Consumer aspect

(1) Establish a low-carbon consumption concept. In the process of consumers practicing low-carbon consumption, school education and family habits are both external factors. The real impact is that consumers consciously cultivate low-carbon consumption awareness and behavior, playing a role from the inside out, which can greatly shorten the time spent on establishing low-carbon consumption concepts and cultivating low-carbon consumption behavior, and save social resources. Consumers can take more buses and subways in their daily lives, try to use energy-saving light bulbs, consciously classify their waste, turn off the power in a timely manner when not using appliances, reuse water resources, use paper on both sides, etc. Starting from the details of life, consciously practice the concept of low-carbon consumption.

(2) Develop low-carbon lifestyle habits. Setting the air conditioning temperature scientifically at around 26 degrees Celsius in summer and between 18 °C and 20 °C in winter not only benefits human health but also greatly saves electricity. In order to strengthen environmental protection and plan

transportation, people should minimize the use of private cars when traveling. If only one person goes out, they should choose public transportation as much as possible. When going out with friends and colleagues, they should take the subway and bus as much as possible to save gasoline resources, reduce carbon dioxide and other pollutant emissions, and achieve a low-carbon life.

4. Conclusion

Green low-carbon and win-win economic and social development is the only way to achieve sustainable development. Only by transforming the traditional development mode, under the framework of sustainable development, saving resources, improving energy utilization efficiency, optimizing economic structure, adjusting industrial structure and energy structure, and building an economic system of green, low-carbon and circular development, can people's livelihood be continuously improved, people's health level be improved, and finally the coordinated development of climate action, environmental protection and economy and society be realized.

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