

Research on the Path and Effect of Green Transformation and Upgrading of Anshan Iron and Steel Enterprises

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Abstract: In the industrialization process of our country, the iron and steel industry plays the pivotal main force role, provides the solid guarantee for the high-speed growth of the national economy. With the arrival of the stage of high-quality economic development, the problems of overcapacity and environmental pollution in the steel industry and the "double carbon" goal, energy conservation and emission reduction in the new era have produced contradictions and conflicts, and the steel industry as a heavy pollution urgently needs to explore the road of green transformation, in order to comply with the main theme of green development of The Times.

Keywords: Iron and steel enterprises; Green transformation; Path study.

1. Introduction

Anshan is an important iron and steel industrial base in China and the first iron and steel industrial city in China approved by The State Council. This paper takes Anshan Iron and Steel Enterprise as an example, analyzes its internal and external environment, explores the motivation and path of green transformation of Anshan Iron and steel enterprise, constructs an index system, and evaluates the effect of green transformation of Anshan Iron and steel enterprise with the method of abrupt progression. The paper puts forward specific suggestions for Anshan Iron and steel enterprises to implement green transformation and improve enterprise performance, and provides reference for the development of green transformation in the steel industry under the requirements of the new era.

2. Current Situation of Anshan Iron and Steel Enterprises

Anshan iron and steel industry has formed a whole industrial chain industrial system with Angang as the leader and local enterprises as the auxiliary, which integrates mining, coking, sintering, smelting, rolling and deep processing, and can produce more than 700 varieties, more than 2,000 steel grades and more than 60,000 specifications of steel products. Among them, the steel production of Angang Group ranks seventh in the world and fourth in China, and was awarded "the most Influential Innovative Company in China in 2018"; Houying Group, as the largest private steel enterprise in Anshan area, has been the largest tax payer in Liaoning Province since 2007. Baode Steel Co., Ltd. is a leading enterprise in the production of H-shaped steel in Northeast China. Liaoning Zizhu Group has become one of the few enterprises in the world that can produce Z-shaped steel sheet piles.

Anshan's steel industry system is relatively complete, including steel production enterprises, steel enterprises, steel trade enterprises, logistics and transportation enterprises, but also includes various raw materials for iron and steel, coal coking, electricity and other enterprises. At present, Anshan

large-scale steel production enterprises are: Anshan Iron and Steel Group Co., LTD., Houying Group Haicheng Steel Co., LTD. Datun Branch, Anshan Baode Steel Co., LTD., Haicheng Hengsheng Casting Co., LTD., Anshan Yuanxin Steel Co., LTD., Haicheng Dongsi Steel Co., LTD., Among them, Houying Group Haicheng Steel Co., Ltd. Datun branch, Anshan Baode Steel Co., LTD., Haicheng Hengsheng Casting Co., Ltd. three enterprises are long process steelmaking enterprises, Anshan Yuanxin Steel Co., LTD., Haicheng Dongsi Steel Co., Ltd. and other enterprises are short process steelmaking enterprises. Anshan's steel industry includes construction, machinery manufacturing, auto parts, profile processing and so on.

3. There are Problems in Green Transformation of Anshan Iron and Steel Enterprises

3.1. The Government Lacks a Unified System and Supervision

Anshan is the cradle of iron and steel, iron and steel enterprises are energy-intensive enterprises, the production process produces many pollutants, resulting in excessive energy consumption, iron and steel enterprises energy efficiency is low, all kinds of energy consumption is higher than the world average standard. The government's rules and regulations on green transformation are not perfect, lack of related systems and policies supporting green transformation, no special functional departments, do not reflect the concept of green transformation development, lack of detailed regulations on green transformation of steel enterprises, the government is not enough to support green transformation enterprises, lack of economic funding and policy, credit support.

3.2. Unreasonable Industrial Structure

In the process of China's economic development, there has always been a relatively high proportion of the secondary industry, and most of the secondary industry with extensive production mode to achieve development, in which the high energy consumption of iron and steel enterprises as a typical.

The output value of iron and steel enterprises has high energy consumption, large pollutant discharge, and serious homogenization of industrial structure. The main products of the steel industry are low-end steel products produced under the extensive production mode, which not only consumes a lot of resources and energy in the production process, but also cannot meet the higher demand in terms of product performance. At present, under the saturated market environment, the products exported by Anshan iron and steel enterprises have no special highlights in terms of performance, so the industry competition is particularly fierce, and the overcapacity problem of low-end products is serious.

3.3. Low Popularity of Green Innovation Technology

China's high energy-consuming enterprises have always adopted extensive development mode, the awareness of green development is relatively weak, and green innovation started late. In recent years, although the Chinese government has vigorously advocated scientific and technological innovation and green innovation, some high-energy-consuming enterprises have also responded positively, but the innovative technology has not been popularized among high-energy-consuming enterprises in a short time. Anshan iron and steel industry, although some iron and steel enterprises vigorously research and development of new, high-end steel products, but due to the limited grasp of technology, the added value of the research and development of new steel is still low, far from international standards, so can not form an export advantage. Technological innovation in iron and steel enterprises often needs to pay high costs, including technology introduction cost, equipment acquisition cost, equipment maintenance and personnel training cost, etc., which brings great pressure to iron and steel enterprises, but the transformation of technological innovation takes some time, and many iron and steel enterprises cannot bear the risk of technological innovation, so innovative technology has not been popularized among steel enterprises with high energy consumption. The conversion rate of scientific and technological achievements is also low.

3.4. Imperfect Disclosure of Environmental Protection Information

Unlike the mandatory disclosure of financial information, environmental protection information and data of steel enterprises have been rarely presented in the public eye. The characteristics of high pollution and high emission of iron and steel enterprises make the importance of environmental data particularly important. Although Anshan iron and steel enterprises, such as Angang, have released social responsibility reports, the disclosure year is incomplete and the disclosure data is not perfect. As the degree of marketization of energy conservation and emission reduction is relatively low, many environmental indicators are not mandatory disclosure, and there is no standardized and unified format for social responsibility reports, it is difficult for the public and investors to evaluate the environmental protection information of iron and steel enterprises, and they have not been subjected to effective external supervision.

3.5. Low Input and Output Efficiency of Green Technology R&D

In recent years, Angang Group, represented by Anshan Iron and Steel Enterprise, has successfully developed a series of

high-end products through continuous efforts, focusing on automobiles, high-strength and high-performance ship plates and Marine engineering, Bridges and other varieties, and accelerating the research and development pace of new functional materials such as lightweight, high-performance, high-durability, high-strength and ultra-high strength, based on green manufacturing. It has developed high-end products such as high-performance carbon structural steel to meet the needs of economic development for special products such as high-performance, high-durability, low-cost, fine-grained and ultra-fine-grained steel, providing a strong support for national economic development. Although Angang Group has made significant contributions to the development of China's steel industry, there are still challenges in the development of high-end products, which require more investment and efforts. In recent years, Angang Group has continuously increased its investment in scientific research, and the number of R&D personnel has also increased sharply. Due to the increasing social and environmental demand for green production, the market economy has an increasing demand for high-end products, and the investment in green technology is also increasing, but the corresponding output is getting lower and lower. According to relevant data, in recent years, the number of patents applied for, the number of authorized patents and the number of invention patents have decreased year by year, and the proportion of R & D personnel and R & D personnel has continued to rise, which indicates that the development of Anshan iron and steel industry has ushered in huge challenges, and more investment and efforts are needed to solve this problem.

4. Green Transformation and Upgrading Strategy of Anshan Iron and Steel Enterprises

4.1. Strengthen Government Guidance and Support

In order to promote the vigorous development of green transformation of Anshan iron and steel enterprises and guide more iron and steel enterprises to actively practice green transformation behaviors, the government and relevant departments should take active actions to formulate relevant preferential policies and create favorable conditions for iron and steel enterprises to carry out green transformation. Government departments and relevant authorities must make full disclosure on the implementation of green transformation in steel enterprises. Inaccurate information disclosure will make the green transformation of iron and steel enterprises inefficient, resulting in many consumers unaware of the products and behaviors related to the green transformation of iron and steel enterprises, delaying or reducing the positive effect of the green transformation of iron and steel enterprises. To vigorously promote the green transformation of Anshan iron and steel enterprises, on the one hand, it can promote the dissemination of socialist core values, on the other hand, enhance the brand image of iron and steel enterprises, form healthy competition in the industry, contribute to the realization of its profit goal, and establish a good social atmosphere.

4.2. Strengthen the Concept of Green Governance

The purpose of green governance of Anshan Iron and steel

enterprises is not only reflected in the internal construction level of enterprises, but also in the green development concept, value concept and sense of mission of enterprises, shaping the image of green ecology, and promoting the development of themselves and the society. Therefore, Anshan Iron and steel enterprises should set up a responsible work committee office under the Corporate Social Culture Department, responsible for coordinating and managing the social daily life of each unit and department, and should take positive measures to deepen the concept of green governance and integrate the concept of green governance into the corporate rules, regulations and standards to ensure that the green behavior of iron and steel enterprises is effectively guided and standardized. It can not only provide a strong basis and foundation for enterprises, but also enable all employees to comply with and implement the requirements of green governance.

Anshan Iron and Steel enterprises should carry out overall planning, design and coordination plans, and actively implement green transformation behaviors. The top management should formulate a scientific green system, set up green governance departments under the Board of directors, responsible for establishing and improving the green governance system of the enterprise, and carry out long-term supervision and management of the implementation and implementation of various departments. In order to ensure the further advancement of corporate green governance, it is constantly updated and improved in practice to ensure the effective implementation of green transformation behaviors.

4.3. Promote Green Technology Innovation

China's iron and steel enterprises have generally recognized the importance of implementing green transformation, and the green transformation as a strategic goal of enterprise development, such as technological innovation to reduce waste gas wastewater discharge, strengthen the efficiency of scrap recycling. In order to promote green technology innovation continuously and deeply, the following points need to be done: First, to understand the green technology innovation concept in line with the development of Anshan Iron and steel enterprises and pay attention to the interests of all parties, while coordinating the pursuit of economic interests of all parties, pay more attention to the protection of the external environment. Second, increase Anshan iron and steel enterprises to invest in green technology innovation. Iron and steel enterprises pay attention to scientific and technological innovation and management innovation at the production end, processing end and management end, through the development of green products, upstream and downstream green enterprise management and green technology development to save energy and reduce emissions. Third, Anshan Iron and steel enterprises can introduce green technology talents in the management, increase the publicity of green products in the sales side, actively respond to the "double carbon" strategic goal and take the initiative to assume corporate social responsibility, and comprehensively promote green technology innovation through improving energy efficiency and promoting industrial structure adjustment.

4.4. Develop Green Finance Industry

Anshan iron and steel enterprises in the process of green transformation to promote green technology innovation, merger and reorganization to optimize the industrial structure,

the construction of green information system needs to invest a huge amount of money, and this only rely on the iron and steel enterprises own economic strength is difficult to achieve, so iron and steel enterprises need to use financial means, such as the use of financial bonds, the establishment of green foundation to promote the development of green industry. The Ministry of Industry and Information Technology and other four ministries and commissions jointly proposed to strengthen industry and finance cooperation to promote industrial green development. Anshan iron and steel enterprises can obtain financial support for green transformation development from the three green finance modules of green financing, green investment and green development research. The purpose of green financing is to provide low-cost and cycle matching funds for energy conservation, emission reduction and industrial green transformation and upgrading. From the perspective of national policy support, the development of green credit and green foundation helps enterprises solve the problem of capital needs in the process of green transformation, and provides a better and better green business environment for iron and steel enterprises. Green financial tools such as green loans, issuance of green bonds and promotion of asset securitization products can help steel enterprises reduce financial costs and increase their profits.

4.5. Establish a Long-Term Mechanism for Green Transformation

To build a long-term mechanism for green transformation, green transformation can be steadily promoted. Green production is a comprehensive technological transformation, not only requires iron and steel enterprises to have advanced manufacturing equipment and technology, but also requires the establishment of a sound management system to control pollution and minimize emissions. In Anshan iron and steel enterprises, Angang has completed most of the environmental protection and green management upgrading projects, and has achieved remarkable results. The successful realization of the green transformation of iron and steel enterprises requires not only an efficient management system, but also a comprehensive production mode management, as well as the coordination between units, departments and processes to ensure that the objectives are effectively realized. In order to better motivate employees to actively participate in environmental protection, iron and steel enterprises should introduce environmental protection governance factors into the compensation incentive mechanism, and increase the evaluation weight of environmental protection participation and contribution in the salary assessment, and establish a sound supervision, evaluation and feedback mechanism for energy conservation and emission reduction to strengthen employees' sense of responsibility.

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