

Research on the Motivation of Green Governance of High Pollution Petrochemical Enterprises under the Target of "Double Carbon"

-- Take Sinopec as an Example

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Abstract

In the new era, with the goal of "double carbon" put forward, enterprises should not only pay attention to economic benefits but also bear the responsibility of green governance in their daily corporate governance. In Report to the 20th CPC National Congress, the General Secretary proposed to build a modern industrial system and unswervingly take the road of ecological priority and green development. Under this background, based on the theory of green governance, this paper actively explores the motivation of green governance in high-pollution enterprises, especially in petrochemical industry, and realizes the high-quality development of petrochemical industry. The results show that: (1) Green governance can bring economic benefits and green governance benefits to petrochemical enterprises, which is conducive to the high-quality development of petrochemical industry; (2) The motivations of green governance in petrochemical industry mainly include realizing ecological and green benefits, reducing corporate governance risks, attracting investors' investment, and promoting enterprise transformation and product upgrading. By analyzing the green governance of highly polluting enterprises, this paper reveals the relevant paths for the high-quality development of petrochemical enterprises, which has certain reference value for the motivation of green governance of other manufacturing industries.

Keywords

Green Development; Corporate Governance; Stakeholders; Motivation.

1. Introduction

In 2022, the Fourteenth Five-year Plan for National Economic and Social Development of People's Republic of China (PRC) and the Outline of Long-term Goals in 2035 were published. It is clearly pointed out in the outline that it is necessary to promote green development, promote the harmonious coexistence between man and nature, and put forward the need to accelerate the green transformation of development mode and jointly promote high-quality economic development. Under the goal of "double carbon", enterprises need to take into account the green sustainable development on the basis of the original efficient governance, and the traditional corporate governance theory needs to change to the green governance concept. Green governance requires enterprises to bear the responsibility of green governance while obtaining economic benefits.

Before the concept of green governance came into being, China's corporate governance concept emphasized efficiency first and then fairness, but with the emergence of green governance concept, everyone gradually realized that fairness and efficiency were equally important. The "fairness" here is not limited to the participants in corporate governance activities, but allows enterprises to treat nature equally in the process of development, realize the inclusive

development of man and nature, and establish a green governance concept. Therefore, at the level of corporate governance, it is no longer just a "solidified" carrier, and its role has shifted from being forced to bear to being an equal stakeholder with shareholders.

Under the background of "double carbon", there are some problems in the development of enterprises, such as the productivity is not up to standard, the market supply exceeds the demand, and the technology of production personnel does not meet the requirements, but the most prominent problem is that the carbon emission of enterprises exceeds the standard. Therefore, in order to achieve sustainable development, enterprises are bound to change the previous corporate governance concept and actively explore corporate green governance, that is, to improve green innovation, improve green technology innovation, form a sound green production process and formulate a green management system to improve the carbon emission of enterprises in the production process. Green governance will bring more long-term economic benefits to enterprises, and to achieve green governance, it will inevitably require a lot of financial support. Green governance and economic benefits complement each other and jointly promote the sustainable development of enterprises. At present, Chinese enterprises are facing a critical period of green transformation. How to successfully realize green transformation is a difficult problem for most enterprises at this stage, but it is also an opportunity. Successful green transformation enterprises can not only get policy support, but also meet consumers' love. Therefore, based on the theory of corporate governance, this paper expounds the importance of corporate green governance for the sustainable development of enterprises, and explores the motivation of corporate green governance, providing reference value for corporate green governance.

2. The Concept Definition and Literature Review

2.1. Corporate Governance and Green Governance

The essence of green governance is not to restrain enterprises from pursuing economic benefits on the grounds of protecting the ecological environment, but to pay attention to the impact on the ecological environment in the process of rapid development while realizing economic benefits, and then use green technology, green management means and other methods to avoid it, realize the sustainable development of enterprises and promote stable economic growth.

It is the basic requirement for enterprises to realize sustainable development to carry out green innovation according to the external governance environment of enterprises. Green technology innovation is the only way for enterprises to achieve high-quality development, and it is also one of the indispensable factors to achieve green governance. In order to achieve the goal of "double carbon", it is a key step to combine the intelligent technology in the era of big data with continuous innovation (Qian Long and Cai Shukai, 2023). At the enterprise level, the senior management team should conscientiously implement the concept of green development, balance the relationship between environmental protection and green development, and actively create green innovation (Qi Liyun et al., 2023). At present, the main influencing factors of green innovation are production pressure and system pressure. On the one hand, the deepening of energy prices means that enterprises face more production costs; On the other hand, environmental regulations and institutional pressures also force enterprises to continuously achieve excess profits by improving innovative modes of production (Wang Hai et al., 2023). Green governance can be understood as using new or improved processes, technologies, systems or products to avoid or reduce environmental pollution in the process of production and operation, and optimizing resource utilization is an indispensable part of green governance (Yang and Taewoo, 2019). Both external constraints and internal management will have a certain impact on enterprise innovation. From the perspectives of environmental

supervision, media supervision and corporate governance, we can study ways to promote corporate green governance (Wan and Wang, 2022).

2.2. Research on the Motivation of Green Governance

Based on green governance, enterprises actively formulate green systems and carry out green technology innovation, which can not only improve the efficiency of resource utilization (Yang Jing et al., 2015; Tang et al., 2018), reducing energy consumption and expanding cost advantages (Christmann, 2000) can also enable enterprises to obtain both economic and environmental benefits (Kong et al., 2016), which is conducive to raising the company's stock price (Klassen and McLaughlin, 1996) and attracting investors to invest. At the same time, certain green investment by enterprises can effectively promote carbon emission reduction (Zhang Yiping et al., 2023). Besides, through the empirical study from the perspective of social responsibility, it is found that corporate social responsibility will have a positive impact on its financial performance (McWilliams and Siegel, 2000), which means that in the process of green governance, it not only keeps the green mountains and green hills, but also obtains the Jinshan Yinshan.

However, there are different opinions that technological innovation may not be able to alleviate the contradiction between production and environmental protection (Wils, 2001), some technologies will have positive effects on reducing pollution, and some pollution will have negative effects (Du Longzheng and Wang Yanming, 2010). At the same time, using digital platforms to supervise carbon emissions in the process of green governance will also produce additional carbon emissions.

To sum up, although green governance may conflict with the production efficiency of the enterprise itself, with the development of the enterprise and the progress of green technology, the production efficiency of the enterprise under the background of green governance will be improved, which will promote the high-quality development of the enterprise, and at the same time, the environmental protection concept of green governance will further consolidate the sustainability of enterprise development.

2.3. Literature Review

Through the summary of the above literature, we can see that the research on corporate governance and green governance has achieved rich research results in both theoretical research and empirical analysis. Most scholars at home and abroad believe that green governance can promote the development of petrochemical industry and significantly enhance the economic and ecological benefits of enterprises. However, enterprises will also invest a lot of money in the process of green governance, even for some enterprises that have just started green governance, which may have the opposite effect. So what is the motivation for petrochemical enterprises to persist in green governance? Therefore, it is necessary for this paper to make in-depth research and explore the motivation of green governance of enterprises under the goal of "double carbon", which can help managers and investors to form a better evaluation on whether to carry out green governance, protect the interests of small and medium-sized investors, and also provide certain reference value for the current practice of green development and reform of enterprises.

3. Introduction of Sinopec

3.1. Introduction of Sinopec

China Petrochemical Corporation (hereinafter referred to as "China Petrochemical") is one of the largest integrated energy and chemical companies in China, headquartered in Beijing, ranking fifth in the world among Fortune Global 500 enterprises in 2022 and first among China enterprises. Enterprises focus on exploration and development, oil refining, marketing and

distribution, chemical industry, international trade and scientific research and development. As a supplier of energy and petrochemical products, China Petrochemical Company determined the strategic deployment of "two three years and two decades" as early as 2018, and determined the phased strategic objectives. The company adhered to the concept of high-quality development, provided a large number of green and clean products for the market and consumers, and realized the harmonious coexistence between enterprises, society and environment.

Since the 13th Five-Year Plan, China Petrochemical has reduced carbon dioxide emissions by 14.43 million tons, and promoted the low-carbon transformation of enterprises in all directions. The company has established an ESG governance system, and the board of directors directly participates in the supervision and governance of ESG affairs. By 2021, the company has put forward 17 ESG governance indicators, and regularly reviews and assesses the completion of the targets. It was awarded the title of "2021 China Environmental Social Responsibility Enterprise", "2021 Outstanding Environmental Protection Contribution Enterprise", "2021 Responsible Enterprise" and "China Low-carbon Model", which has made outstanding contributions to low-carbon transformation.

In recent five years, China Petrochemical has shown an overall upward trend in carbon trading volume and trading volume, and in 2021, its carbon trading volume reached 9.7 million tons, with a trading volume of 414.07 million yuan. The company has made remarkable contributions to promoting global greenhouse gas emission reduction.

3.2. Specific Measures for Low-carbon Operation of China Petrochemical Company.

3.2.1. Dimensions of Corporate Governance

Sinopec's sustainable development strategy is directly under the responsibility of the board of directors. The board of directors of the company has set up five special committees, including the Sustainable Development Committee, which is directly responsible for the company's major decisions, supervision and implementation. The Committee consists of four directors, and the chairman directly serves as the chairman and is directly responsible for related work. The company incorporated ESG indicators into the performance evaluation, including safety in production (environmental protection (including but not limited to greenhouse gas emissions, pollutant emissions, energy efficiency management, environmental penalties), anti-corruption, legal compliance management, risk management, etc.; Formulate employee codes and incorporate health, safety and environmental protection into employee action guidelines; Improve the complaint reporting mechanism and accept the reporting supervision mechanism from all sectors of society.

3.2.2. Strategic Landing Dimension

① Promote green chemical industry and eliminate backward production capacity.

During the 13th Five-Year Plan period, China Petrochemical made a comprehensive layout around the green and low-carbon transformation, strictly reduced emissions at the source, and actively adopted clean technologies and equipment. Efforts will be made to build a clean, low-carbon, safe and efficient modern energy system and a production, supply, storage and sales system to serve high-quality economic and social development. Vigorously promote the low-carbon transformation of traditional businesses, eliminate backward production capacity, realize internal economy through technological innovation, promote the realization of scale returns, constantly adjust industrial structure, and realize cost effect.

② Explore new energy supply and realize green innovation.

China Petrochemical is committed to building a technology-oriented company, and its technology research and development won the first prize of enterprise scientific progress in

the field of industrial application. Enterprises have always placed new energy exploration at the core of their business operations, and have achieved remarkable results so far, and achieved initial results in hydrogen energy development, green hydrogen production from green electricity, geothermal development and clean electricity. China Petrochemical continuously breaks through the cutting-edge technology of low-carbon energy, reduces the low-carbon cost of enterprises, and pursues more economic benefits on the premise of ensuring green production and operation. And actively pursue digital transformation, build a new model of "digital+platform+application", and provide innovative kinetic energy for the company's high-quality development around the industrial chain.

4. The Motivation Analysis of Sinopec's Green Governance

4.1. Realize Ecological and Economic Benefits.

Management pursues the maximization of shareholders' interests and enterprise value for its own rights and interests. Therefore, the management of enterprises will give priority to whether their own interests are affected when making decisions. The profitability of an enterprise will give a certain impetus to the management's decision-making, promote the green governance of the enterprise, finally realize the sustainable development of the enterprise, enhance the economic benefits of the enterprise and create certain ecological benefits.

Therefore, as a highly polluting enterprise, it is the general trend for Sinopec to carry out green governance. Effective green governance can promote the sustainable operation of enterprises, and then enable enterprises to obtain long-term economic benefits. The premise of an enterprise's existence is continuous operation. If it wants to develop continuously, it can't just pay attention to immediate interests. With the change of ecological environment, the country is more and more aware that the consumption of resources and the pollution to the environment are irreversible. If enterprises do not attach importance to environmental protection and green governance, environmental pollution will increase and their own development ability will be limited. Over time, the economic benefits that enterprises can obtain will be less and less.

The "economic growth theory" also tells us that the economic growth of enterprises should consider the long-term sustained economic growth in a fairly long period of time. Economic growth cannot be separated from the investment of material capital, human capital and technological progress. Therefore, through green governance, the investment of green capital can be increased and the progress of green technology can be promoted, thus directly promoting economic growth. And green governance can also promote the upgrading of industrial structure and the development of green ideas, indirectly affecting the growth of green economy, so the benefits of green governance are not short-term, but can only be revealed after a long period of time.

Secondly, in order to encourage enterprises to carry out green development, the government gives tax incentives and corresponding subsidies to enterprises that actively carry out green governance, and enterprises can obtain additional income from green governance to reduce the investment of capital cost. At the same time, the green technology developed by enterprises in the process of green governance can also help enterprises to produce products with higher efficiency and better quality, and can also apply for patents on green technologies to obtain more benefits.

4.2. Reduce Corporate Governance Risks.

The production and operation of enterprises will be subject to various risks such as product positioning, external competition, lack of resources, etc. The purpose of corporate governance is to minimize the potential risks of enterprises, and with the strict requirements of the state on carbon emissions, green transformation has become a top priority for enterprises. The

essence of green governance is a new governance model extended from corporate governance, which can reduce the risk of environmental pollution and the cost of pollution control, and is conducive to the long-term sustainable development of enterprises.

China Petrochemical Company is a traditional petrochemical enterprise, which is highly polluting. If we do not pay attention to green governance in the production process, then the environmental pollution caused by production will cause a series of adverse effects on enterprises, affect the interests of all stakeholders, and even be punished by the government, consumers find other partners who are not hungry, and social relations are isolated. This will definitely affect the long-term operation of enterprises and lead to operational risks.

Secondly, it is necessary to change the corporate governance concept of "pollution first and then treatment". On the one hand, chemical pollutants may cause irreversible damage to the environment, on the other hand, this model will bring more costs and reduce profits to enterprises, and the pollutants treated have not been completely eliminated, but only transferred to other places, which can not be fundamentally solved, but will also produce potential hidden dangers. Therefore, in order to truly solve the chemical pollution problem, we must control the waste discharge in the production process, carry out the whole process of green management, and solve the problem from the production line.

The green management of China Petrochemical runs through the whole production process, from pollution control at the source to greening of the production process. Finally, the discharged materials are comprehensively utilized, and the waste materials are treated before being discharged. The whole industrial chain runs circularly, which greatly reduces the generation of pollutants. While protecting the environment, it also reduces the high cost of terminal governance and other governance costs, so that enterprises can get more green governance benefits and reduce business risks in the process of corporate governance.

4.3. Attract more Investors to Invest.

Investors in economic activities are all rational economic men, aiming at maximizing their own interests, and the investment projects chosen by investors are all projects that meet the requirements of national policies and can obtain sustained benefits. Based on the green development strategy, more and more investors should not only make decisions based on financial performance, but also pay attention to non-financial information such as social responsibility, product advantages and technological advantages.

Enterprises actively fulfill their social responsibilities, carry out green governance and establish a green and low-carbon corporate image, which in turn can improve the reputation and core competitiveness of enterprises in the market, and investors are more interested in enterprises that can meet the national strategy. The current investment not only concerns the product quality of enterprises, but also whether the types of products are green products encouraged by the state, and also pays more attention to whether enterprises meet the strategic requirements of the state. On the one hand, enterprises with product advantages and technological advantages can occupy an advantage in the future enterprise valuation, which makes investors full of confidence in the market value of enterprises. On the other hand, enterprises with green governance can occupy a dominant position in the market and establish a sustainable competitive advantage.

As a leading enterprise in China petrochemical industry, the reputation and corporate image of China Petrochemical Company are particularly important. As a state-owned enterprise, Sinopec's business strategy not only represents the image of the country, but also plays a leading and exemplary role in the development strategy of private enterprises. At the same time, as a state-owned enterprise, Sinopec has the participation of party organizations, and green governance is the only way for enterprises. Therefore, the implementation of green governance in China Petrochemical Company can not only fulfill its due corporate social responsibility, but

also improve the green image of the enterprise, thus enhancing the reputation of the enterprise and attracting more investors to invest.

4.4. Green Technology Promotes Industrial Transformation and Product Innovation.

Corporate governance, as the institutional basis of enterprise's technological innovation, can promote enterprise's technological innovation through budget tilt and the formulation of enterprise's internal system. At the same time, the green innovation of technology can promote the product transformation of enterprises and the speed of green governance of enterprises, and the green governance of enterprises can also promote the innovation of green technology of enterprises.

The continuous development of green technology can improve production efficiency, increase product diversity and reduce product cost to increase product competitiveness. China Petrochemical has continuously improved and upgraded its green technology, from the development of shale gas exploration technology to the breakthrough of bio-jet fuel development technology, to the research and application of carbon dioxide capture technology, and the establishment of intelligent factories, oil and gas fields and refueling service stations. This series of green technologies has promoted the upgrading of China Petrochemical's energy structure, helped China Petrochemical to better optimize its energy structure, and promoted the transformation of industrial structure.

Secondly, green technology can promote product innovation. Product innovation can form new product advantages, including technical advantages and pricing advantages, and enhance competitiveness. With the continuous strengthening of green concept, consumers' demand for green products is increasing, which requires enterprises to produce green products that meet the needs of consumers. Therefore, enterprises need to continuously develop green technologies and green products to meet the growing demand of consumers for green consumer goods.

5. Conclusion

Under the background of "double carbon" goal, the green governance of enterprises is the general trend, especially for highly polluting petrochemical enterprises, not only to ensure the output and quality of products, but also to reduce the harm to the environment. Therefore, based on green governance, the motivations of green governance in petrochemical industry include achieving win-win economic and environmental benefits, reducing corporate governance risks, attracting investors' investment, and promoting industrial transformation and product upgrading. At the same time, although green governance can't bring short-term profits, it helps to enhance the long-term value of enterprises, realize the goal of high-quality development of enterprises, and add higher market value to enterprises.

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