

Research on Environmental Responsibility Information Disclosure under the Background of Double Carbon Goals—Taking Jiangzhong Pharmaceutical as an Example

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Abstract: The pharmaceutical industry, which is responsible for the people's life and health, has not only created value for the national economy, but also brought many environmental externalities that cannot be ignored. Today, in the context of the development of a dual carbon economy, more and more attention has been paid to how enterprises properly deal with environmental pollution. This topic takes Jiangzhong Pharmaceutical as an example, focusing on the analysis and summary of Jiangzhong Pharmaceutical's social responsibility report and related environmental information in recent years. This topic believes that Jiangzhong Pharmaceutical has comprehensively disclosed environmental information and improved it year by year. The disclosure method is also intuitive and easy to understand. However, Jiangzhong Pharmaceutical's negative information disclosure on social responsibility is insufficient, the reference standard of disclosure is not standardized, and the accuracy and authenticity of its disclosure content also need to be verified. Therefore, this topic puts forward corresponding suggestions on the existing problems from three aspects of national laws, media and the public, and enterprise disclosure mechanism and incentive system, hoping to provide reference and development ideas for the entire pharmaceutical industry and other industries.

1. Introduction

With the rapid development of society and the continuous expansion of human social and economic activities, the damage and impact of human activities on the earth's ecology has become increasingly serious, prompting people to pay more and more attention to environmental issues. In September 2020, China clearly put forward the “dual carbon” goal to the world, that is, China will strive to achieve the “carbon peak” by 2030 and achieve the “carbon neutrality” strategic goal by 2060[1]. The realization of the “dual carbon” goal is inseparable from the disclosure of authentic and reliable environmental information. As an important measure to strengthen environmental management, environmental information disclosure plays an important role in supervising and managing corporate behavior and regulating the market environment, and is well received by all sectors of society. of attention. Therefore, it is particularly important for major industries to improve the rules of environmental information disclosure, improve the efficiency and level of environmental management and environmental information disclosure, and improve the environmental problems of enterprises. Taking Jiangzhong Pharmaceutical as an example, this paper conducts data analysis and theoretical research on the current situation of environmental information disclosure in the pharmaceutical industry where the company is located. Combined with the actual situation of my country's pharmaceutical industry and relevant regulations, it aims at the problems existing in environmental accounting information disclosure in this industry. Propose reasonable suggestions and improvement measures[2].

2. Reseach Background

In recent years, the world has paid more and more attention to the issue of climate change, and the main economic development goals of all countries in the world have been developed into green, low-carbon and sustainable development. At the 15th meeting of the United Nations in 2020, General Secretary Xi Jinping proposed the “dual carbon” goal. “Carbon peaking” means that the

total CO₂ emissions begin to gradually decrease after reaching the historical peak. “Carbon neutralization” means that the relative CO₂ emissions are 0. Neutralization means offsetting and balancing each other, that is, within a certain period of time, there is a certain mutual offset relationship between the emission and absorption of CO₂ in various production and living activities of the society, so in a certain period of time, the total amount of CO₂ is 0. Green development of enterprises first, enterprises are the core and main force of economic and social development. To achieve the “dual carbon” goal, it is necessary to give full play to the major leading and supporting role of enterprises[3].

At present, independent report disclosure and supplementary report disclosure are the main methods for Chinese enterprises to disclose environmental accounting information. The case study of this paper, Jiangzhong Pharmaceutical, uses independent report disclosure. According to the company's daily production and business activities, a special statement of the company's environmental protection work is prepared, and it is regarded as an independent disclosure item rather than belonging to the company. Annual report content. This can not only promote the integrity, accuracy and reliability of corporate information disclosure, but also facilitate corporate managers to grasp the financial status of corporate environmental protection. It is also conducive to the supervision of the low-carbon and environmentally friendly production of enterprises by the relevant state departments, accurately grasping the economic development trends of the society, and ensuring the realization of the dual-carbon goal as scheduled[4].

However, at present, the carbon emission management requirements and environmental accounting information disclosure standards of domestic enterprises are still immature, the relevant information disclosure system is not perfect, and enterprises lack uniform and accurate disclosure system requirements. Therefore, in different industries, the environmental accounting information published by enterprises is varied and not standardized. Decentralized disclosure of environmental information makes it difficult for information users to understand environmental information and make reasonable judgments. In addition, it will also result in the inability of enterprises to systematically compare with similar or related enterprises. The pharmaceutical industry is an important part of the social economy. The pharmaceutical industry is related to the national economy and people's livelihood, and is of great significance to promoting social progress and development. As a highly polluting chemical industry, the pharmaceutical industry is the focus of the country's environmental protection. Therefore, improving the quality of environmental accounting information disclosure in the pharmaceutical industry plays an important role in my country's development of a green economy, promoting high-quality economic development, and achieving the dual-carbon goal as scheduled[5].

3. Case and Analysis of Jiangzhou Pharmaceutical

3.1 Introduction of Jiangzhong Pharmaceutical

Jiangzhong Pharmaceutical, an A-share listed company of China Resources Jiangzhong Pharmaceutical Co., Ltd., is mainly engaged in the research and development, production and sales of Chinese patent medicines and health care medicines[6].

My country's pharmaceutical industry is highly competitive. As a leader in the OTC pharmaceutical industry, Jiangzhong Pharmaceutical Co., Ltd. focuses on improving R&D technology. The annual input production cost of medicinal materials is relatively large, and it is difficult to comprehensively control pollution and environmental protection of pharmaceutical bases[7].

3.2 Analysis of Jiangzhong Pharmaceutical Environmental Accounting Information Disclosure

3.2.1 Disclosure Method

Jiangzhong Pharmaceutical uses annual reports and social responsibility reports as the main methods of environmental information disclosure. It detailed the environmental protection projects in its annual report. It mainly covers the progress of wastewater information for three waste projects

and the improvement results of anti-pollution treatment and emergency response plans for environmental emergencies. In “Government Grants”, the amounts of subsidies and incentives provided by the government for various environmental protection policies are listed. The “Social and Environmental Report” gives the quantification of the total investment in environmental protection, and expounds the company's energy conservation and environmental protection projects, pollution reduction data, and green advocacy[8].

3.2.2 Disclosure Content

Through research and analysis of Jiangzhong Pharmaceutical's social responsibility report from 2012 to 2020 (hereinafter referred to as the report), the main contents disclosed by it are analyzed. The report describes in detail the transformation of environmental protection projects, lists the annual emissions that meet the standards, and provides qualitative and quantitative descriptions of projects such as photovoltaic power generation (see Table 1).

Table 1 Environmental Protection and Emission Reduction Results Data

Data Disclosure of Environmental Protection and Emission Reduction Achievements						
Years	2015	2016	2017	2018	2019	2020
Comprehensive energy consumption per 10000 yuan of industrial output value (tons of standard coal/10000 yuan)	0.0415	0.0405	0.0393	0.035	0.047	0.0489
Invest in photovoltaic power generation	0	1250	1260	1260	0	0
Photovoltaic power generation	0	150	163	162	0	0
NOX emissions (tons)	0	0	0	25.1426	19.1419	10.4548
SO2 emissions (tons)	0	0	0	33.9087	0.9402	0.219
CO2 emissions (tons)	0	0	0	31685	28488	28570

(Data source: Juxun Information Network, China Resources Jiangzhong Social Responsibility Report 2012-2020)

The environmental protection input is disclosed in the form of total amount (see Table 2). The investment in energy conservation and sewage treatment was disclosed in 2016. There is basically no capital investment. The public welfare investment of enterprises was basically disclosed in the social responsibility report from 2012 to 2020.

Table 2 Environmental Protection Investment

Data Disclosure of Environmental protection investment					
Project Years	Energy Conservation	Emission Reduction	Sewage	Sewage Treatment	Public Welfare Investment
2012					562
2013					185
2014					0
2015					132.74
2016	1250	345	390	1985	43
2017	10	0	0	10	152.36
2018	150		10	160	65.2
2019	0		0	0	248.2
2020	81			81	611

(Data source: Juxun Information Network, China Resources Jiangzhong Social Responsibility Report 2012-2020)

In the disclosure of sewage treatment projects, the total amount of funds and recycled sewage are described quantitatively (see Table 3). The disclosure of environmental protection investment was rare before 2016. The total investment of the project was disclosed in 2016 and 2018, and the disclosure of reclaimed water reuse tonnage was increased after 2016.

Table 3 Data of Sewage Treatment Project

Sewage Treatment	Investment (10,000 yuan)	Reclaimed Water Reuse (tons)
2012	0	0
2013		
2014		
2015		
2016	390	365000
2017	0	1095000
2018	10	52100
2019	0	150000
2020	0	1100000

(Data source: Juxun Information Network, China Resources Jiangzhong Social Responsibility Report 2012-2020)

Meanwhile, the honor of Jiangzhong Pharmaceutical in environmental protection is disclosed in the report (see Table 4). The annual honor shows that Jiangzhong Pharmaceutical has fulfilled its social responsibility well.

Table 4 Environmental Protection Related Honors

Years	Related Honors
2012	Its leading products won the “Public Trusted Drug Brand”
	Implemented the “Rising Star of Jiangzhong Students” brand student aid action (for ten consecutive years)
2013	The qualified rate of finished products monitored by other units(Including drug supervision department) reaches 100%
2014	The company's production base, Jiangzhong Medicine Valley, was selected as “the most beautiful factory in China”, a factory that can breathe”, and was awarded the reputation of “the world's top five ecological buildings”
2015	Jiangzhong Medicine Valley, the manufacturing base, was designated by the Ministry of Foreign Affairs as “Jiangzhong Experience Center for Foreign Political Leaders of Qihuang Guoyi”
2016	Won the title of “Jiangxi Province Energy Saving and Emission Reduction Technology Innovation Demonstration Enterprise”
	Won the honorary title of “Intelligent Manufacturing Pilot Demonstration” awarded by the Ministry of Industry and Information Technology of China
2017	Luoting Base won the honor of “Extracting a New Model of Intelligent Manufacturing” from the Ministry of Industry and Information Technology of the People's Republic of China
	Awarded “High-tech Enterprise”
	Won the “Jiangxi Jinggang Quality Award” nomination award
2018	Awarded the National “Green Factory”
2019	Awarded as “Advanced Collective of China Ecological Civilization Award” by the Ministry of Ecology and Environment
	The Wanli Manufacturing Base won the Gold Award of the Hong Kong Green Enterprise Award “Excellent Environmental Management Award” issued by the Hong Kong Environmental Protection Association
2020	Awarded the “People's Corporate Social Responsibility Award “ and “Green Development Award”
	Selected into the National Development and Reform Commission's “National Ecological Civilization Pilot Zone Reform and Experience and Practice Promotion List”

(Data source: Juxun Information Network, China Resources Jiangzhong Social Responsibility Report 2012-2020)

From the content of environmental information disclosure, Jiangzhong Pharmaceutical, through a series of strategic environmental decisions, has continued to expand the company's size while paying attention to the implementation of environmental strategies, and has achieved good results in terms of pollutant emissions, which is of reference significance to other enterprises in the pharmaceutical industry.

4. Lessons from Environmental Accounting Information Disclosure of Jiangzhou Pharmaceutical

4.1 Social Responsibility Theory and Environmental Right to Be Informed Theory

The theory of social responsibility holds that enterprises need to bear social responsibility. Under this theory, unlike ordinary enterprises, listed companies have strong financial support and company size, which also means that their share of social resources and impact on society are greater. Therefore, listed companies should actively assume certain social responsibilities, actively respond to and advocate low-carbon, energy-saving and green development, and set an example for other enterprises.

The environmental right to be informed is derived from the right to know, and it recognizes that citizens have the right to obtain environmental information. The “Environmental Protection Law of the People's Republic of China” clearly stipulates that the public has the right to know environmental information and the right to supervise environmental protection work, and key polluters should disclose information and accept social supervision. The Ministry of Ecology and Environment will officially implement the “Format Guidelines for Legal Disclosure of Corporate Environmental Information” from February 8, 2022. The promulgation of this standard strengthens the normative nature of environmental information disclosure, requiring that information should be truthful, accurate, objective, and easy to understand.

The environmental information disclosure methods of Jiangzhong Pharmaceutical mainly include annual report and social responsibility report. Jiangzhong Pharmaceutical has made a detailed description of environmental protection projects in its annual report, which mainly includes the progress of enterprise wastewater, waste gas and solid waste discharge treatment, the improvement results and operation of relevant pollution prevention equipment, the emergency plan for environmental emergencies, and the environmental self-monitoring plan.

The quantitative amount of total environmental protection investment, the company's energy conservation and environmental protection projects, pollution reduction and emission reduction data and green initiatives are listed in the enterprise annual report and social environmental report. In the social environment report, Jiangzhong Pharmaceutical made a detailed description and data display on the measures and effects taken to reduce carbon emissions.

4.2 Stakeholder Theory and Information Asymmetry Theory

According to the stakeholder theory, stakeholders include shareholders, creditors, employees, consumers, suppliers and other trading objects that have direct contact with the enterprise, as well as individuals and collectives that have indirect interests with the enterprise, such as government departments, local residents and communities, media, environmental protection organizations, and even objects that are directly or indirectly affected by the enterprise's business activities, such as the natural environment, human descendants.

According to information asymmetry theory and agency theory, in market economic activities, various types of personnel and organizations at different levels have different access to relevant information. Compared with the party with less information, the party with rich information resources is often in a better position. Moreover, for direct stakeholders, they are more inclined to invest in companies with more comprehensive disclosure information. Therefore, for companies, disclosure of more complete corporate information will attract more investors.

From the perspective of the content of environmental information disclosure, in order to establish a good image of the company, Jiangzhong Pharmaceutical has gradually strengthened its awareness of environmental information disclosure, and the disclosure content is also gradually improving. For example, in the social environment report, the company described in detail the transformation process of the company's major environmental protection projects, listed the three waste emission data indicators for each year, and qualitatively and quantitatively described the progress and effectiveness of photovoltaic power generation and other projects. In 2016, the capital investment in energy conservation and sewage treatment was disclosed. From 2012 to 2020, the social responsibility report basically disclosed the public welfare investment of enterprises. At the

same time, Jiangzhong Pharmaceutical also disclosed the honors the company has won in environmental protection in the social responsibility report to demonstrate that the company has fulfilled its social responsibilities well.

5. Problems in Information Disclosure of Jiangzhou Pharmaceutical

5.1 Scattered Disclosure Content

Jiangzhong Pharmaceutical's disclosure of environmental-related accounting information is relatively scattered. Before 2014, the social responsibility report only displayed eight fixed sections in the form of text, and the relevant content has been improved since 2015. The total investment information of environmental protection projects is not available every year, and tends to be disclosed intermittently. There is no unified content format, and the content disclosed each year is different, making it difficult to compare by itself.

5.2 Inconsistent Disclosure Form

Jiangzhong Pharmaceutical's disclosure of environmental accounting information is mainly reflected in the social responsibility report and corporate annual report, and it has not prepared an independent environmental report for disclosure. In the work of fulfilling social responsibilities in the annual report, Jiangzhong Pharmaceutical gave a detailed description of the company's environmental protection projects. The government grants for environmental protection policies are indicated in the government grants section of the annual report. The environmental responsibility module in the social responsibility report clarifies the company's environmental management system, energy conservation and environmental protection projects, pollution reduction and emission reduction data, and the company's green advocacy. Quantitative amounts of total investment in environmental protection appear in social and environmental reports. Jiangzhong Group also lacks a unified standard for disclosure content, and does not have a relatively complete format, which results in the inconsistency of environmental accounting information disclosed in each issue, making it difficult to collect.

5.3 Incomplete and Highly Subjective Disclosure Information

Jiangzhong Group's disclosure of Jiangzhong Pharmaceutical is basically a qualitative disclosure of environmental protection concepts, achievements, and honors, but no disclosure of possible risks and related fines related to environmental pollution.

Insufficient disclosure of negative environmental accounting information for Jiangzhong Group. Enterprises use a lot of space to disclose positive content, and rarely involve negative content, such as the fines that the company needs to pay, the number of public environmental protection complaints, and the compensation for environmental pollution caused by the company before the implementation of green environmental protection projects.

6. Relevant Measures to Promote Environmental Information Disclosure of Enterprises in China

6.1 Improve the Enterprise System

6.1.1 Improve Environmental Accounting Legislation

A sound legal system is the fundamental guarantee for enterprises to perform environmental information disclosure. Therefore, my country should actively promote the construction of environmental responsibility accounting disclosure laws with industry characteristics. At the same time, it is necessary to clarify the legal responsibilities of all parties that have problems in the process of social responsibility information disclosure, and strengthen the performance of corporate social responsibility through coercive means. Sustainable development to create a good social environment.

6.1.2 Improve the Environmental Information Disclosure System

At present, my country has not yet formed a set of norms that can regulate and rectify the disclosure of corporate responsibility accounting information. Therefore, it is necessary to establish a set of disclosure standards that are applicable to the development of social responsibility accounting information in my country. In the standard specification, a clear reference is formed for the specific content of social responsibility accounting information disclosure.

6.2 Establish Enterprise Environmental Information Disclosure Mechanism

6.2.1 Establish Talent Training System

Due to the lack of excellent environmental accounting talents, it is difficult for enterprises to effectively audit and process environmental information. Therefore, it is necessary for enterprises to establish a sound personnel training system. At the same time, a competition mechanism was introduced among accounting personnel, and the corresponding reward and punishment measures were linked to employee performance appraisal, so as to stimulate the enthusiasm of accounting personnel to learn environmental accounting. Through the training system, improve the professional quality of corporate accounting personnel and improve the corporate environmental information disclosure system.

6.2.2 Strengthen the Supervision of Third-Party Audit

For the purpose of maximizing economic benefits, enterprises may fail to fulfill their social responsibilities. Third-party audit institutions are independent of enterprises, and the audit reports issued are more reliable. The government should establish a corresponding audit system for third-party audit institutions, and encourage them to conduct real evaluations of relevant enterprises. At the same time, it is necessary to prevent third-party audits from covering up the illegal behavior of enterprises through fraud, explore the establishment of information sharing mechanisms between enterprises, third-party audits, supervision departments and practitioners, and improve the standardization of supervision of the market.

6.2.3 Encourage the Public to Exercise Their Right of Supervision

First, the government can use the media and other forces to carry out positive publicity on companies that perform well in environmental responsibility to further stimulate the enthusiasm of enterprises; Second, the public is encouraged to actively exercise their right to oversee. The public can participate in corporate environmental management by expressing environmental appeals and other means, and jointly motivate companies to fulfill their social responsibilities.

6.3 Strengthen the Sense of Responsibility of Enterprises

Only when companies become more conscious will they pay attention to the disclosure of social responsibility accounting information. Therefore, it is necessary to increase the importance of companies accepting third-party certification and corresponding publicity. Second, pay attention to companies that accept third-party certification, so as to drive more companies to improve. Sense of responsibility. At the same time, environmental responsibility can be linked with the social evaluation of enterprises, and certain rewards can be given to enterprises with outstanding performance.

6.4 Promote Integration of Environmental Responsibility and Enterprise Development

At present, incorporating environmental responsibility into strategic planning is an inevitable requirement to achieve sustainable development of enterprises. First of all, under the dual-carbon goal, enterprises should speed up the transformation from high energy consumption and high pollution development to low energy consumption and low pollution development path. This not only helps companies meet their environmental responsibility obligations, but also achieves sustainable economic returns. Second, integrate environmental responsibility into the corporate culture and make it reflected in the corporate values.

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