

# Research on Environmental Accounting Information Disclosure of Beijing-Tianjin-Hebei Electric Power Listed Companies——Take Beijing Jingteng Power Co., Ltd. as an example

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**Abstract.** The sustainable development strategy puts forward the business requirements for economic development, protection of resources and protection of the ecological environment. Under the wave of green environmental protection, the preparation of environmental accounting reports has gradually become an important part of corporate information disclosure.

## 1. Introduction

Environmental accounting, also known as green accounting, is based on money as the main unit of measurement. Based on relevant laws and regulations, it measures and records the cost of environmental pollution, environmental prevention and environmental development, and at the same time carries out the benefits of environmental maintenance and development. Reasonable measurement and reporting to comprehensively assess the impact of environmental performance and environmental activities of a company's financial results. Environmental accounting combines accounting and environmental economics to guide economic resources for the most effective use and optimal allocation through effective value management to improve the overall efficiency of society and ultimately achieve the goal of coordinated economic development and environmental protection.

From a macro perspective, the disclosure of accounting information in the environment is the need for the state to conduct macro management. By summarizing and analyzing the environmental accounting information of each independent accounting entity, the government can better protect the environment by understanding the environmental status of the whole society and taking corresponding decisions. However, at this stage, China's environmental accounting theory lags behind, the forms of disclosure are diversified, and there is no clear norm for the disclosure of environmental accounting information, which in turn leads to heavy pollution in the specific disclosure, there are often different situations. And there is some randomness. Many companies disclose more information, but the corresponding information is that there are still a lot of information disclosed by many companies, which makes the relevant investors unable to understand the actual environmental protection of the enterprise, and can not use this information disclosure as a basis for decision-making. Enterprises fulfill their environmental responsibilities and disclose environmental information as an important part of their sustainable development strategy. Therefore, this paper takes Huaneng Power International and Yida Group Co., Ltd. as an example to provide a reference for the relevant enterprises to implement government policies on the disclosure of environmental accounting of financial statements of the two companies.

## 2. Status of Environmental Accounting Information Disclosure of Listed Companies in the Power Industry

### 2.1. Introduction to the Industry as a Whole

The direction of the development of national industry from light industry to heavy industry is the general law of industrialization, while the completion of industrialization is marked by industry. When a country enters the stage of heavy industrialization, it is both the result of the accumulation of

production factors and the inherent requirement of demand expansion. In addition, according to the results of the market economy, compared with industrialization based on light industry, national industrial heavy industrialization has special advantages in cultivating and creating domestic demand. First of all, heavy industry products are mostly related to the satisfaction of higher-level social needs, which can promote the continuous expansion of domestic demand. Secondly, heavy industrial products can not only create conditions for the structural upgrading of light industry, but also create consumption in the market and meet consumer demand. The distribution of heavy industry in China mainly includes energy, steel, machinery, chemical and other industries, of which the energy industry is mainly coal, oil and power industries. The "13th Five-Year Plan for Energy Saving and Emission Reduction" issued in December 2016 proposes that by 2020, the national energy consumption per 10,000 yuan of GDP will be 15% lower than that of 2015, and the total energy consumption will be controlled at 5 billion tons. Within standard coal. The output value of China's environmental protection industry exceeded 900 billion yuan in 2008, reaching 100 billion yuan in 2010, and is expected to reach 2.8 trillion yuan by 2020. According to the estimates of the Environmental Protection Planning Institute during the 13th Five-Year Plan, it is estimated that the environmental protection investment during the 13th Five-Year Plan period will increase to about 2 trillion yuan per year. The total investment in social environmental protection during the 13th Five-Year Plan period is expected to exceed 17 trillion yuan.

Due to the rich geographical characteristics of coal mineral resources in China (China is the world's largest coal producer and consumer, coal accounts for 76% of commodity energy consumption), and the main power generation methods are still using firepower. The basic production process of thermal power generation consists of combustion system, steam water system, electrical system and control system. The main power generation principle is to use the belt conveying technology to deliver the treated pulverized coal to the boiler. The pulverized coal combustion heating boiler turns the water in the boiler into water vapor. After one heating, the water vapor enters the high pressure cylinder. Thereafter, in order to improve the thermal efficiency, the water vapor should be reheated twice, and the water vapor enters the intermediate pressure cylinder. By using the steam of the medium pressure cylinder to drive the turbine generator to generate electricity. The medium pressure cylinder is led out into a symmetrical low pressure cylinder. A part of the steam that has been worked is pumped out from the middle section to supply refinery, fertilizer, and other related enterprises, and the rest flows through a condenser to be water-cooled, and becomes saturated water of about 40 degrees as reuse water. The saturated water of about 40 degrees passes through the condensate pump and passes through the low pressure heater to the deaerator. At this time, the saturated water of about 160 degrees is deoxidized by the deaerator, and is fed into the high pressure heater by the feed water pump, wherein the high pressure heating is performed. The reheated steam is used as a heating fuel, and finally flows into the boiler for reuse.

In the process of thermal power generation, the acid gas such as SO<sub>2</sub> and NO emitted by direct combustion of coal is increasing, which increases the acid rain in many areas of China, generating about 1.4 million tons of SO<sub>2</sub> per year, which is the main source of smoke pollution. Thermal power generation will also be near the power station. The environment causes fly ash pollution and produces dust pollution. China's thermal power generation enterprises consume about 50 million tons of standard coal per year, generating 15 million tons of soot, which greatly damages people's lives and mind and body. In 2013, "Smog" became the key word of the year. In January of the same year, four smog processes enveloped 30 provinces (autonomous regions and municipalities). In Beijing, only five days were not foggy days. According to relevant reports, less than 1% of China's 500 largest cities meet the World Health Organization's recommended air quality standards. At the same time, seven of the 10 most polluted cities in the world are in China. The smog is mainly composed of sulfur dioxide, nitrogen oxides and respirable particulate matter. These three kinds of particulate matter accumulate in the air, and the thermal power generation methods in China, especially in the Beijing-Tianjin-Hebei region, cannot be separated.

Therefore, the environmental information disclosure of power listed companies plays a vital role in the joint prevention and control of regional air pollution in the Beijing-Tianjin-Hebei region.

## **2.2. Relevant Policy Background**

According to the 2017 Ministry of Environmental Protection's "Beijing-Tianjin-Hebei and Surrounding Areas 2017 Air Pollution Prevention and Control Work Plan", the Ministry of Environmental Protection has implemented the "Air Pollution Prevention and Control Action Plan" to effectively increase the intensity of air pollution control in Beijing, Tianjin and Hebei and surrounding areas. State Grid Corporation, China Huaneng Group Corporation, China Datang Power Corporation, China National Electric Corporation, State Power Investment Corporation, and Shenhua Group Co., Ltd. have proposed contractual cooperation. At the same time, due to the current accounting system in China, environmental accounting is still in the early stages of development. In order to investigate and further promote the disclosure of corporate environmental information, further research is necessary.

The power industry is the basic industry for the development of China's national economy and has a strategic position in the growth of national GDP. At present, the rapid development of China's domestic industrialization has made the country's demand for electricity grow, but at the same time, as a resource-intensive industry, the production of electric energy needs to consume a lot of natural resources such as coal and oil. The production of high-energy and high-polluting electric energy has caused Environmental problems such as widespread smog and abnormal winter weather. Therefore, the power industry needs to save energy, deepen the circular economy, proactively manage and protect the environment, and disclose as much as possible about the environmental aspects of the enterprise to promote the power industry to embark on a sustainable development path.

## **2.3. Environmental Accounting Information Disclosure in the Power Industry**

Environmental accounting information disclosure follows three principles, the principle of importance, the principle of coercion and the principle of consistency. Its content includes environmental financial information and environmental performance information. Environmental financial information is a reflection of the financial behavior of an enterprise's environmental behavior actions. The content can be subdivided into four aspects: environmental assets, environmental liabilities, environmental costs and environmental benefits. Environmental assets reflect the development of environmental protection investment and environmental technology. Environmental liabilities refer to the special compensation provided by enterprises for destructive behavior after destroying the environment. The environmental cost is the cost incurred by the companies in the power industry for preventing and controlling environmental pollution. It refers to the gains from the power industry due to environmental protection. Environmental performance information is a reflection of the results and efficiency that companies have achieved in environmental protection. It mainly includes environmental protection policies and policies, environmental protection activities and targets, environmental rewards and punishments, energy consumption and energy conservation, and disposal of pollutants.

## **3. Analysis of Environmental Accounting Information Disclosure Problems of Listed Companies in the Power Industry**

### **3.1. Enterprises Lack Initiative and Enthusiasm for Information Disclosure**

As it is shown in table1, It is not difficult to find out during the research process that there are still a few companies that do not disclose any information on environmental accounting; many of the companies that disclose information disclose too little information, and some of them are temporarily modified to make one-sided corrections at the end of the fiscal year. Disclosure. Many companies have not made any improvement after deep research. Moreover, most companies do not have a clear distinction between environmental accounting information and general accounting information when disclosure of accounting information, and the former is mistaken as the latter. For example, the environmental subsidy in government subsidies is classified as operating income, and the cost of pollution reduction and noise reduction of enterprises is listed as manufacturing expenses.

Misclassified and confused subjects are also one of the manifestations of lack of enthusiasm for information disclosure.

Company Name	Jingneng Power
Environmental costs Fuel, material and depreciation of production equipment:	11,423,739,988.06
Environmental benefits contract energy management income:	100,124,408.71 yuan Tax incentives: contract energy management income is exempt from business tax; contract energy management income obtained since September 2012 is exempt from value-added tax; contract energy management business is exempt from corporate income tax from first to third year, fourth to sixth The enterprise income tax shall be halved in accordance with the statutory tax rate of 25%.
Government subsidy:	special funds for air pollution prevention and control: 3,000,000.00

**3.2. The Content of Corporate Information Disclosure is not Comprehensive**

According to the survey results, the disclosure of environmental accounting information by enterprises has the following characteristics: qualitative disclosure is more than quantitative disclosure; historical information disclosure is more than disclosure of future development related information, historical information is also limited to environmental protection investment, government funding, sewage charges, noise reduction Fees, etc., lack of disclosure of environmental information related to the future development of the company, such as estimates of environmental costs, environmental equipment expenditures, environmental risk reserves and other contingent issues, etc.; environmental protection negative information disclosure is also incomplete, and The cautiousness of accounting standards does not match.

**3.3. The Mode of Enterprise Information Disclosure is not Standardized**

Looking at the statements of listed companies in different years, the position of the indicators for disclosure of environmental accounting is not fixed. Due to the lack of initiative and integrity of information disclosure of listed companies in the power industry, the information disclosure model lacks certain comparability in the industry. Different companies use monetary, non-monetary and monetary and non-monetary methods to disclose relevant information, resulting in the same information being more incomparable in the same industry. This adds to the inconvenience of users of accounting information.

**3.4. The Reliability of Information Disclosure is not High**

Most of the environmental information of listed companies in the power industry has not been disclosed in the corporate financial report with standardized accounting subjects and unified disclosure models. Most listed companies do not have complete environmental information reports, but they are scattered and irregular. Different locations for financial reporting. Therefore, although the corporate financial report has been audited by the firm's auditors, the accounting information has not been independently audited, and the audit report issued by the certified public accountant does not contain independent environmental accounting information traces, resulting in a certain degree of reliable environmental information disclosed by the enterprise. Not very sexual.

#### **4. Suggestions on Environmental Accounting Information Disclosure of Listed Companies in the Power Industry**

Based on the above-mentioned problems in the environmental accounting information disclosure of the Beijing-Tianjin-Hebei power industry, the following suggestions are proposed:

The listed companies in China's power industry can improve the disclosure level of environmental accounting information from the government, the enterprise itself and the public. There is a role between the government, enterprises and the public. The government is the most important guide. It is necessary not only to oblige enterprises to disclose environmental accounting information from laws and regulations, but also to cultivate public participation awareness and support the public to supervise corporate environmental accounting information disclosure. The enterprise is the executor of the disclosure of environmental accounting information. On the one hand, it must disclose the statutory information according to the requirements of the government, on the other hand, it is responsible to the public and actively disclose the environmental accounting information. The public is a powerful supervisor. In response to the government's call, it also supervises and restricts the government's legislation and enforcement actions. When facing enterprises, it must prompt enterprises to disclose high-quality environmental accounting information and timely feedback to the market. On the other, form a strong binding force on the enterprise. The specific countermeasures are as follows:

##### **4.1. Strengthen Legislation and Propose More Mandatory Disclosure Requirements**

China's current laws and regulations fail to form a systematic legal constraint on corporate environmental accounting information disclosure. Therefore, it is recommended that the relevant government departments jointly issue matters concerning the disclosure of environmental information of listed companies, detailing the necessary disclosure indicators for all types of disclosure entities, and uniformly stipulating the location and form of disclosure of various indicators.

##### **4.2. Improve Corporate Management and Improve Disclosure Levels**

Improving enterprise management needs to consider both the improvement of relevant systems and the improvement of the quality of enterprise personnel. Enterprises should have an in-depth understanding of all the business related to environmental accounting information disclosure, so as to clarify the current environmental responsibility and goals of the company, formulate future plans and capital solutions, and gradually establish a sound environmental management system. On the basis of improving the environmental management system, listed companies should strive to establish an environmental accounting system, conduct environmental accounting, and form a disclosure system. While perfecting the system, for the accounting staff, on the one hand, it is necessary to improve the skills in environmental information disclosure through necessary training; on the other hand, it is necessary to promote exchanges between accounting personnel and grassroots personnel, so that accountants can understand the various environmental accounting disclosures involved. Business process. In addition, an environmental accounting information disclosure evaluation mechanism and incentive mechanism can be established to obtain comprehensive environmental accounting information.

##### **4.3. Paying Attention to the Public's Strength and Enhancing Public Binding**

It is necessary for the government to use various news media to make the public understand that environmental protection is of its own interest. On this basis, the government should guide the public to pay attention to the government's legislative behavior and the specific situation of the company's environmental responsibility. The government can regularly investigate the public, organize public participation in environmental assessment of local enterprises, establish an effective complaint platform to support the public to complain about corporate environmental violations, and actively support the activities of private environmental organizations, giving policy support and funding. Support, if necessary, the government should come forward to coordinate the investigation of the corporate environment by the public and private environmental organizations.

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