

Research on Carbon Emission Reduction Audit of Company A

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Abstract: This paper company A case study, the carbon audit status of case study, analysis of the comprehensive utilization of energy, solid and hazardous waste management, energy saving management and carbon emission reduction and industrial environment governance. According to the causes of various problems in carbon emission reduction environmental audit, the causes are analyzed. Then, in view of the many problems existing in the process, the optimization strategies are put forward from improving the implementation of environmental audit plan of carbon emission reduction, improving the disclosure of carbon emission reduction, and implementing the tracking and monitoring of environmental audit of carbon emission reduction. Finally, the conclusions and prospects are drawn on the environmental audit of carbon emission reduction under the low-carbon economic environment, in order to help China to achieve the low-carbon goals as soon as possible and achieve green and sustainable development.

Keywords: Environmental audit, Carbon emission reduction, Low-carbon economy.

1. Introduction

This paper summarizes and analyzes the current research status of carbon emission reduction environmental audit at home and abroad, and uses case analysis to analyze the necessity of implementing carbon emission reduction environmental audit under the background of low-carbon economy, starting from the carbon footprint and carbon emission reduction environmental audit status of chemical enterprises. Then, taking Company A as an example, the paper proposes improvement measures in view of the difficulties of its carbon emission reduction environmental audit.

2. Current Status of Company A's Carbon Emission Reduction Environmental Audit

This paper focuses on the evaluation of A company's carbon emission reduction environmental audit, and focuses on verifying the authenticity, legality and efficiency of its related carbon emission activities, so as to assess its social responsibility. Through reading the annual report, sustainable development report and social responsibility report of Company A in the past five years, the carbon emission reduction behavior of Company A is mainly analyzed from the following aspects.

2.1. Comprehensive utilization of energy

Company A actively implements the national major strategic decisions and deployments on carbon peaking and carbon neutrality,[1] is committed to reducing the use of fossil energy, vigorously promotes the use of natural gas, uses it as an alternative energy to accelerate the pace of natural gas replacement and electricity replacement, and promotes the low-carbon energy structure. The company takes green and clean as one of the six strategies of the company's "14th Five-Year Plan", pays attention to the transformation from traditional energy to clean energy, adheres to ecological priority, green transformation and clean development, continues to implement the "energy efficiency improvement"

plan, promotes the clean fossil energy, clean energy scale, low carbonization of production process, and vigorously reduces energy consumption intensity and emission intensity. Firmly towards the goal of "net zero", the company has become a new benchmark for green, clean and low-carbon development in the industry. The integrated unit energy consumption of ethylene will continue to be the "leader" in the energy efficiency of the industry, and the water consumption of existing installations is planned to be reduced by 1% per year.

2.2. Energy conservation management and carbon emission reduction

Company A attaches great importance to energy saving, emission reduction and environmental protection. In 2018, Company A launched the "Green Enterprise Action Plan" as an important part of the implementation of the green and clean development strategy. In 2022, the company steadily promoted the implementation of the measures of the action plan, further focused on the grassroots, organized all units to build green grassroots, and comprehensively consolidated the foundation of green development; The targets of clean energy, green products, resource and energy utilization, pollutant emission, greenhouse gas emission and greening were completed as planned. By the end of 2022,[2] Company A has completed the creation of 114 green enterprises, has completed the creation of 19,900 green grassroots units, and completed the annual target requirements.

2.3. Industrial environmental governance

The company comprehensively controls the generation, treatment and emission of enterprise waste gas pollutants, installs online environmental monitoring facilities to ensure real-time monitoring of air pollutant emissions, and controls the total amount of air pollutant emissions according to pollution requirements. In 2022, the company established and improved the waste gas management system, the annual external emission of sulfur dioxide 4910 tons, nitrogen oxides 19,247 tons. [3] Company A also adheres to the water resource management principle of "saving priority and balancing production and supply", aiming to reduce the

amount of industrial new water consumption by 1% per year, systematically optimize the water structure, implement sewage instead of clean water project, and increase the reuse of sewage and wastewater. At the same time, the company attaches great importance to the investigation and monitoring of soil and groundwater, and strictly prevents soil and groundwater pollution. In 2022, the comprehensive annual wastewater compliance rate of the company's subsidiaries will be 100%, and the total amount of water pollutants discharged will continue to decrease.

3. Problems Existing in Company A's Carbon Emission Reduction Environmental Audit

3.1. Audit data is difficult to calculate

Quantification of environmental impact is an important part of carbon emission reduction environmental audit. It is necessary to convert the results of environmental impact assessment into measurable indicators, so that the company can determine environmental objectives and reduce the negative impact on the environment according to the actual situation. During the audit of Company A, it was found that the carbon emission reduction environmental audit data were difficult to calculate and inaccurate. There were two main reasons for this. On the one hand, the energy of chemical enterprises was diversified, which made the data collection volume large. On the other hand, although the National Greenhouse Gas Inventory Guidelines have stipulated the detection standards of carbon emissions, the specific work of low-carbon emissions is still inseparable from the collection of carbon emission reduction data. In addition, the accuracy of carbon emission data determines whether the carbon emission reduction environmental audit work is smooth or not. If the base period data is not accurate, the carbon emission reduction environmental audit will be difficult to succeed. The main problems in its base period data are:

3.2. Incomplete information disclosure

In the low carbon economy environment, China's carbon information disclosure system is not comprehensive, the standard is still not uniform, resulting in information disclosure confusion, not comparable problems. Through the disclosure of annual reports of chemical enterprises, it is found that most enterprises have a common problem of too much text and less data, and can not give investors a comprehensive and intuitive information.

Regarding information disclosure, the existing problems of Company A mainly include three aspects: First of all, business managers of enterprises pay less attention to the disclosure of carbon emission reduction environmental audit information, because the disclosure of information related to environmental benefits cannot bring economic benefits to enterprises in a short period of time. As a result, business managers whose main goal is economic benefits will not pay attention to the disclosure of carbon emission reduction environmental audit information, which hinders the comprehensive disclosure of carbon information to a certain extent. Secondly, at present, the disclosure form of carbon emission reduction environmental audit information lacks a unified standard, and there is no clear designation of what information enterprises should disclose. Therefore, enterprises often have irregular forms and insufficient disclosure in actual disclosure. Finally, the content of

information disclosure depends on the understanding of the data to some extent, and the lack of understanding of the data will also lead to incomplete disclosure.

3.3. Rectification efforts are not strong

In the implementation of the audit, auditors should not only pay more attention to the process, but also supervise the improvement of the audited unit's carbon emission reduction after the audit, so as to enhance the implementation effect of carbon emission reduction environmental audit. When conducting the carbon emission reduction environmental audit of Company A, we found that the audit team paid too much attention to the planning, program design and program implementation stage of the carbon emission reduction environmental audit work project, and ignored the supervision of the company's carbon emission rectification after the carbon emission reduction environmental audit report was issued. A review of the data found that the same carbon management problems would recur. The main cause of this problem is inadequate audit correction. Although the company conducted a carbon audit, it ignored some issues that arose. After the audit, the supervision of the audit project team is not strong, resulting in some problems existing in the enterprise can not be corrected and improved.

4. Improvement Suggestions for Company A's Carbon Emission Reduction Environmental Audit

4.1. Improve the implementation plan of carbon emission reduction environmental audit

Environmental auditing for carbon reduction is more complex and requires more variety than traditional auditing. Similar to traditional auditing, a carbon reduction environmental audit also requires a thorough understanding of the auditee and its environment before undertaking the audit. However, carbon emission reduction environmental audit has more detailed requirements for the preliminary audit investigation. In addition to collecting the internal control of the audited unit and the selection and application of accounting policies, it also needs to investigate the application of low-carbon emission reduction in the enterprise, as well as the data and procedures involved. Including not only qualitative information, but also quantitative information; [4]Both internal audit information and external evaluation information are required to ensure the comprehensiveness and accuracy of data collection. Through the preliminary investigation and research, the direction is provided for the collection of carbon emission reduction environmental audit data in the later stage, the key matters of audit are determined, the audit plan is promoted, and the objectives of carbon emission reduction environmental audit of enterprises are promoted.

First of all, enterprises have the subjective consciousness of choosing carbon emission reduction environmental audit. In order to achieve the carbon emission reduction environmental audit goal and the completion of the enterprise sustainable development goal, they must adhere to the coordination of internal audit, social audit and government audit to ensure the leading position of government audit. Secondly, we can give full play to the complementary role of social audit, make use of its independence, learn from its relevant suggestions, and

improve the carbon emission reduction environmental audit of enterprises. Finally, for the consideration of its own long-term interests, the internal audit department of an enterprise should pay close attention to and supervise various types of information such as corporate carbon emission and carbon management, strengthen the training of carbon emission reduction personnel, improve the internal knowledge reserve and knowledge complementarity of the enterprise, strengthen the effectiveness of internal audit, promote the smooth implementation of carbon emission reduction environmental audit, and avoid the situation of single business knowledge. Provide assistance to third party agencies for carbon reduction environmental audits through internal assessments. When the technical capacity is insufficient, the help of government audit and social audit can be sought. The three coordinated development, mutual communication, can effectively save manpower, material and financial resources.

4.2. Improve the information disclosure of carbon emission reduction environmental audit

Accelerate the establishment of carbon emission reduction environmental audit quality control system, comprehensively supervise the implementation quality of enterprise carbon emission reduction environmental audit projects, standardize the carbon emission reduction environmental audit work, and control the audit quality. In order to ensure the real implementation of control measures, it is necessary to strengthen the transmission of information between enterprises, the government and the public, integrate the audit information of various departments through the details of various work, and realize the information communication of audit, so as to objectively evaluate the quality of audit work. Audit informatization can promote full coverage of audit, help information users to better summarize and retrieve information, and thus more convenient supervision and control of audit quality. Therefore, the establishment of carbon emission reduction environmental audit quality control system should be accelerated to improve the implementation quality of carbon emission reduction environmental audit.

Chemical enterprises can improve the quality of information disclosure in the following ways: [5]First, establish relevant information disclosure system from the institutional level, standardize the content and degree of information disclosure, so that enterprises have rules to follow and laws to follow. Secondly, the public should be encouraged to actively play the role of third-party supervision, always pay attention to corporate carbon information disclosure activities, evaluate the quality of corporate information disclosure, and give enterprises a satisfaction feedback from time to time. Finally, chemical enterprises should optimize themselves, actively protect their reliability and authenticity while disclosing information, and avoid the disclosure of false information.

4.3. Ensure the follow-up supervision of carbon emission reduction environmental audit

Audit results are usually presented in the form of audit

reports, which need to comprehensively sort out and analyze the data in the audit process, and select a node to supplement the audit after the audit is completed. The subsequent supplementary audit is conducive to evaluating the carbon emission results of enterprises, predicting the long-term impact of their production activities on the climate environment, and providing directions for the adjustment of enterprises' future development strategies.

Protecting the environment is not only the responsibility of enterprises, the public as a member of the environment, the same responsibility, need to make a small contribution to the development of low-carbon economy. When improving carbon emission reduction environmental audit, chemical enterprises can fully mobilize the public's awareness of ecological protection, actively encourage the public to participate in economic supervision, and always pay attention to the carbon emission reduction environmental audit results published by the enterprise and monitor the results of carbon emission reduction environmental audit.

5. Conclusion

Carbon emission reduction environmental audit not only promotes enterprises to carry out low-carbon governance. In order to truly supervise and guide enterprises to do a good job in carbon emission management, it is necessary to establish a set of carbon emission reduction environmental audit evaluation standards, standardize the carbon emission reduction environmental audit system, and improve the carbon emission reduction environmental audit from the institutional and legislative levels. In the face of the lack of professional ability, we must actively use the help of professionals from all walks of life; Raise the public and management departments' attention to carbon emissions, increase the publicity of government departments on low-carbon environmental protection, improve the public's awareness of low-carbon environmental protection, let more citizens participate in the support work of carbon emission reduction environmental audit, and create good conditions for the development of carbon emission reduction environmental audit.

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