

# **Research on carbon information disclosure of Chinese power company Datang International—under the context of carbon neutrality**

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**ABSTRACT:** *The direct cause of global warming lies in the massive emission of carbon dioxide, and the abnormal climate will further affect the production and life of society, and even completely change the climate of a place. In the face of global warming, energy conservation and emission reduction have actually been reached in all countries and international organizations, and gradually formed the concept of sustainable development and low-carbon economic development. Based on the need to quantify carbon emissions, carbon accounting emerged. The basis of carbon accounting is the disclosure of carbon information. The disclosure of carbon information can not only provide feedback on the actual completion of carbon emission reduction in a low-carbon economy, but also provide certain data reference for the users and stakeholders of carbon information. As a high energy consumption enterprise, the traditional thermal power industry belongs to the typical industry type that needs to control and discharge. In this context, this paper took Datang International carbon information disclosure as a case study, combined with the social responsibility report published by the enterprise, deeply explored the motivation, content and disclosure method of carbon information disclosure of the case enterprise, as well as a series of existing problems. Attribution analysis is made from three perspectives: government, enterprise and society. Finally, in view of the causes of the problems, it is proposed to promote the legislation of carbon accounting information disclosure and strengthen the supervision of carbon information disclosure at the government level, to standardize the way and content of enterprise carbon accounting information disclosure and to strengthen the training of composite carbon accounting professionals at the enterprise level. At the social level, suggestions are put forward to guide and strengthen stakeholders' demand for carbon accounting information and strengthen the construction of third-party carbon accounting information audit system, providing optimization ideas for Datang International carbon accounting information disclosure and reasonable and feasible suggestions for China's overall carbon accounting information disclosure.*

**KEYWORDS-** *Carbon accounting; Electric power industry; Datang International; Carbon accounting information disclosure.*

## **I. INTRODUCTION**

Under the traditional economic development model, the consumption of fossil fuels has actually had a serious impact on the development of human society through the reaction of the environment. The threat of global sea level rise to low-lying countries and the frequent occurrence of abnormal weather in many parts of the world are the most direct portrayals of global warming. In order to slow down or even solve the problem of global warming, a series of concepts such as "low-carbon economy", "low-carbon development", "green development" and "sustainable development" have been proposed and applied one after another. As far as my country is concerned, it is necessary to implement the dual-carbon goal of "carbon neutrality and carbon peaking". In September 2020, during the general debate of the 75th United Nations General Assembly, the term "carbon neutrality" was highlighted. General Secretary Xi Jinping even proposed to adopt more active and effective policies to fully promote China to achieve peak carbon dioxide emissions by 2030 and complete carbon neutrality by 2060. At the National People's Congress and the National People's Congress in 2021, Premier Li Keqiang further summarized Xi Jinping's carbon concept as "carbon neutrality and carbon peaking" and deployed a series of carbon governance measures. Whether it is carbon governance or carbon emission, it must be implemented in the disclosure of carbon emission information in carbon accounting. Full disclosure of carbon accounting information can most truly reflect the relationship between social and economic development and environmental protection. In fact, the full disclosure of carbon accounting information and incorporating it into enterprise development planning and accounting can minimize the destructive effect of economic and environmental development on the ecological environment. With the opening of the national carbon emission trading system in 2017, the carbon emission reduction share has actually become more commercially valuable. As the first batch of companies to be included in the carbon information disclosure list, the power industry is not

only a test for the power industry, but also a foundation for its smooth transformation. Datang International (stock code 601991), as a well-known power company in China, has achieved remarkable results in implementing the carbon neutrality goal. Its relevant information is also disclosed in its "Social Responsibility Report - Environmental, Social and Governance Report" (also known as ESG Report).

## **II. Carbon Information Disclosure Theoretical Basis and Literature Review**

### **2.1 Theoretical Basis of Carbon Information Disclosure**

#### **2.2.1 Information Asymmetry Theory**

Joseph Stiglitz, George Akerlof and Michael Spence explained the phenomenon of information asymmetry from three aspects: financial market, labor market and commodity trading, respectively, and then put forward the theory of information asymmetry. The theory of information asymmetry refers to the fact that in the process of market economic activities, various participants have differences in the quantity and quality of information obtained due to their different identities and positions. Among them, the party with relatively more information will gain the information advantage. And this information advantage can often help it achieve business advantages. For the other party with a relative disadvantage, it needs to pay a higher cost of obtaining and distinguishing the authenticity of information, resulting in unfair transactions. In economic activities, information asymmetry usually leads directly to moral hazard and adverse selection risk.

#### **2.2.2 Stakeholder Theory**

Freeman pointed out that stakeholders mainly refer to those organizations or individuals who may achieve or be affected by the business objectives of the enterprise. Among them, mainly including business owners, investors and creditors, employees, industry chain participants and consumers in the final link, all belong to stakeholders. The stakeholder theory holds that one of the conditions for maximizing benefits is that the demands of stakeholders are satisfied at the same time. This requires enterprises to balance the rights and interests of different stakeholders and meet their needs as much as possible. At the same time, the demands of different stakeholders are also different, and should be treated differently in the process of meeting their differentiated needs.

### **2.2 The Default Process of Evergrande Group**

Kolk (2020) studies the concept of greenhouse gas as a similar concept to the concept of carbon accounting information, and believes that carbon information disclosure reflects the specific actions of enterprises. Therefore, carbon information disclosure is actually a way of comprehensive carbon governance.

Nor (2020) directly uses the data of the top 100 listed companies in Malaysia by market capitalization in 2020 as research samples to analyze their carbon information disclosure willingness and disclosure impact. Although the government does not have mandatory requirements on the disclosure of relevant carbon information. But companies that proactively disclose tend to have better corporate reputations and positive reviews.

Noumion (2021) takes the top 50 companies listed on Nasdaq as the research object, and compares the differences and similarities in the way and content of carbon information disclosure in different industries. It is suggested that listed companies should disclose in a more intuitive way, such as a more efficient carbon profit statement and carbon balance sheet.

Ysalin (2021) believes that climate change-related factors actually have a deep connection with the formulation of business strategies and profitability of enterprises. Therefore, the issue of accounting information disclosure should be regarded as an important supplementary report of corporate financial information disclosure, including the risks, opportunities and related carbon emission information of carbon information disclosure.

Depoers (2021) takes the annual reports of French listed companies and the Carbon Information Disclosure Project (CDP) as the research object, and studies the differences between the two disclosure methods in the process of greenhouse gas emissions. It is believed that when the difference between the information disclosed by the two is too large, the company is more inclined to reduce the consistency of the data in the annual report, which is easy to cause market distrust.

Rahman (2022) clearly pointed out that carbon information disclosure is aimed at energy conservation and carbon reduction, helping stakeholders to identify carbon projects and carbon risks, and to enhance the efficiency of resource allocation and investment and financing. Then, taking China's A-share listed companies as the research object, it analyzes the problems existing in the process of China's carbon information disclosure by constructing a carbon information disclosure index. It is believed that the main problems of Chinese listed companies in carbon information disclosure are that the disclosure structure is scattered, the disclosure content is mainly qualitative information, lack of quantitative information, large differences in disclosure among industries, and strong subjective arbitrariness.

Wang Panna (2020) analyzed the carbon information disclosure index and disclosure projects of 230 Chinese listed companies in a qualitative way, which also proved that high energy-consuming enterprises are more inclined to actively disclose carbon accounting information.

Cui Yeguang and Su Jingyan (2021) believed in the research on carbon emission trading rights that the carbon information disclosure of enterprises can be divided into two categories, namely on-table disclosure and note disclosure. Among them, on-balance sheet disclosure mainly refers to adding carbon information to the original balance sheet, cash flow statement and income statement; while note disclosure refers to special disclosure in off-balance sheet notes, mainly involving the flow of funds for carbon emissions and the performance of contracts. Information that cannot be disclosed in the table, such as situation and project overview.

Liu Lang (2021) also believes that the method of carbon information disclosure should combine on-balance sheet disclosure with off-balance sheet disclosure. Among them, on-balance sheet information mainly includes quantifiable accounting information such as carbon acquisition, negotiation confirmation, carbon record and carbon accounting; off-balance sheet information mainly includes non-accounting information that is difficult to quantify, such as carbon emission strategy, carbon emission target, and carbon operation risk.

After analyzing the quality of carbon information disclosure in the seven existing carbon emission trading markets in China, Xu Ailing (2022) believes that the inconsistency between disclosure form and disclosure content is the most important reason affecting the quality of carbon information disclosure. Subsequently, suggestions for improvement were put forward in terms of the form and content of carbon information disclosure, audit and platform.

### III. Status Quo of Datang International Carbon Information Disclosure

#### 3.1the Basic Profile of Dakang International Company

Datang International was established in 1994 and listed on the Shenzhen Main Board in December 2006 with stock code 601991. As a Sino-foreign joint venture, it is also the largest independent power operation enterprise in China. Its main business is thermal power generation, and it is widely involved in Coal-based recycling business. In recent years, in response to the call of the state, Datang International has actively adjusted the structure of generator sets, gradually replaced them with environmentally friendly generator sets, and increased the proportion of social responsibility fulfillment. In 2018, the task of ensuring power supply for the G20 summit was successfully completed, and in 2019, it completed the task of ensuring power supply during the "two sessions" and the "Belt and Road" summit forum, fulfilling its responsibility for the convening of the 19th National Congress of the Communist Party of China.

As a large-scale integrated power company in China, Datang International has also extensively participated in clean energy businesses such as hydropower, wind power and photovoltaic power generation in addition to thermal power operations. Datang International's 2018-2020 "Social Responsibility Report - Environmental, Social and Governance Report" shows that its power generation and sales structure are shown in Figure 3-1 and Figure 3-2:

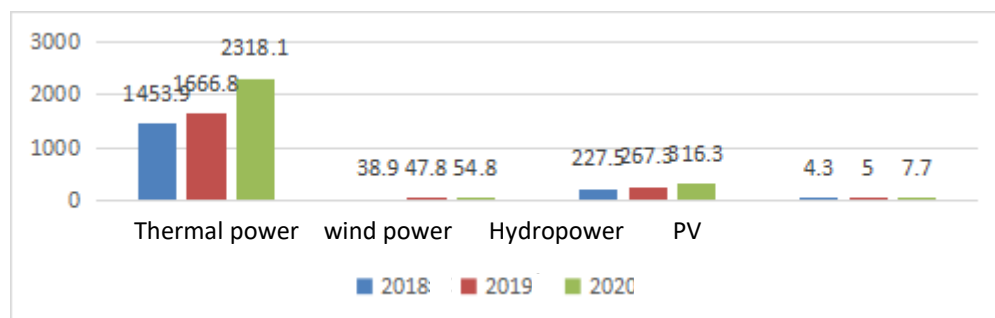


Figure 3-1 Datang International's 2018-2020 Electricity Sales Volume (100 million kWh)

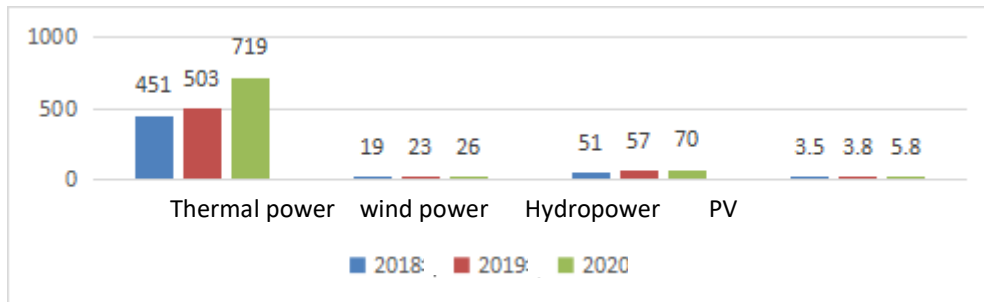


Figure 3-2 Datang International's 2018-2020 electricity revenue (0.1 billion yuan ¥)

As can be seen from Figure 3-1, Datang International basically maintains the main form of thermal power in the power generation structure. However, in recent years, its wind power, hydropower and photovoltaic power generation, especially the increase of hydropower, is relatively considerable. In general, the state of full production and full sales has been maintained. In terms of electricity revenue structure of Datang International, thermal power revenue accounts for a relatively high proportion. In 2020, its thermal power revenue reached a scale of 71.9 billion. Therefore, as a typical high-energy-consuming industry dominated by thermal power, it is also a key target enterprise for carbon emission reduction.

### 3.2 Datang International Carbon Information Disclosure Content

According to the standard of whether it can be measured in currency, the content of carbon information disclosure can be divided into two categories: monetary carbon accounting information and non-monetary carbon accounting information.

#### 3.2.1 Monetary carbon information disclosure

In the content involving monetary carbon accounting information, it mainly includes financial information on environmental protection subsidies, greening fees and environmental protection fees. The monetary carbon accounting information disclosed by Datang International from 2018 to 2020 is shown in Table 3-1.

Table 3-1 Datang International's Carbon Financial Information Specific Content Unit: 10,000 ¥RMB

Year	Environmental subsidy	Greening fee	Environmental protection fee
2018	undisclosed	2416	209303
2019	9230	3161	3161
2020	29143	41	308448

Data sources: Datang International Annual Report, Social Responsibility Report, Sustainability Report, Health, Safety and Environment Report

As shown in the table above, Datang International's annual investment in greening costs is increasing year by year; environmental protection costs also show a large scale. However, it is also noted that the details of the relevant payments and government subsidies have not been disclosed. At the same time, the Environmental Protection Tax Law officially promulgated by my country in January 2020 includes environmental protection tax. However, Datang International has rarely mentioned the payment of environmental protection tax. At the same time, Datang International only has these three items of monetary carbon information involved, and the remaining financial data has not been disclosed. Therefore, its carbon information is relatively limited in monetary information disclosure

#### 3.2.2 Non-monetary carbon information disclosure

In terms of non-monetary carbon information, Datang International mainly discloses related matters including low-carbon development strategies and commitments, carbon emission reduction and energy-saving measures, and low-carbon goals and achievements.

##### 3.2.2.1 Low-carbon development strategy and commitment

Datang International's 2018-2020 low-carbon development strategies and commitments are shown in Table 3-2.

Table 3-2 Datang International's 2018-2020 Low-Carbon Development Strategy and Commitments

Year	Disclosure content
2018	Adhere to green production and build a resource-saving and environment-friendly enterprise; Adhere to green transformation and increase the proportion of clean energy and renewable energy installed capacity; Regularly publish social responsibility reports and proactively disclose operational information.
2019	Take value, green, rule of law, innovation, and responsibility as the strategic goals of the company; Take value thinking and benefit orientation as the core concept; Write social responsibility reports, proactively disclose operational information, and establish and improve the closed-loop management process for social responsibility.
2020	Vigorously develop renewable energy, actively develop large and medium-sized hydropower stations, and prioritize the development of gas turbines; Actively carry out thermal sales business and speed up the process of internationalization; Actively enter the field of electricity distribution and sales, and actively participate in the construction of the carbon trading market; Actively disclose operational information and establish and improve the closed-loop management process of social responsibility.

3.2.2.2 Carbon emission reduction and energy saving measures

Table 3-5 Datang International's carbon emission reduction and energy conservation measures in 2018-2020

Year	Disclosure content
2018	Promote deep emission reduction and complete the ultra-low emission transformation of 28 units; Develop clean energy, insist on paying equal attention to both scenery and land and sea; Conserve resources, strengthen whole-process conservation management, reduce resource consumption intensity, and improve resource utilization efficiency.
2019	Promote deep emission reduction and complete ultra-low emission transformation of 7 units; A total of 66 units of thermal power units in service have been retrofitted with ultra-low emissions, with a retrofit completion rate of 95.1%; Develop clean energy and vigorously develop renewable energy such as wind power and photovoltaic; Save resources, actively carry out energy-saving technological transformation, and reduce energy consumption and material consumption.
2020	Promoting in-depth emission reduction, a total of 68 thermal power units in service have been retrofitted with ultra-low emissions, and the retrofit completion rate is 97%; Develop clean energy and continue to invest in the development of renewable energy such as wind power and photovoltaics; Exploit energy-saving potential and take water conservation as a sustainable development goal.

As shown in the table, Datang International's firm fulfillment of its carbon emission reduction responsibilities is mainly achieved by adopting three approaches of transforming units, developing clean energy and saving resources. Among them, focusing on the transformation of generator sets, the results are shown in Figure 3-3:

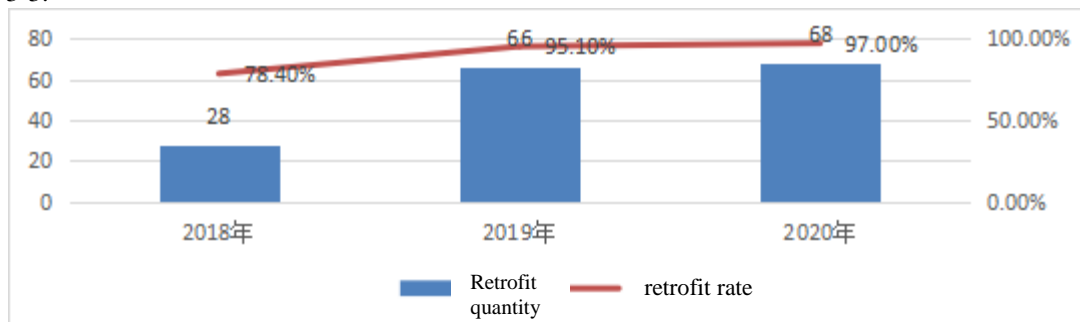


Figure 3-3 Datang International's 2018-2020 Carbon Reduction Unit Reconstruction

In order to meet the requirements of carbon emission reduction, Datang International carried out systematic transformation of thermal power generating units.

Overall, the disclosure content and quality of Datang International's carbon emission reduction and energy-saving measures have been improving year by year, which shows the importance Datang International attaches to energy conservation, emission reduction and environmental protection work, and this is also conducive to improving the quality of carbon emission reduction and energy-saving measures. Tang International Carbon Information Disclosure and Promotion of Low-Carbon Development. Although there is some quantitative information in the disclosure of carbon emission reduction and energy conservation measures, more data support is still needed in the disclosure of carbon emission reduction and energy conservation measures.

### 3.2.2.3 Low-carbon goals and achievements

On the issue of carbon information disclosure based on the table 3-6, Datang International has disclosed relevant data in combination with pictures and texts since 2018. Among them, energy saving and emission reduction are the key points. The disclosed items are relatively detailed. However, it can also be seen that Datang International lacks a long-term low-carbon emission reduction strategy in carbon information work. In addition, the energy structure and the degree of development and utilization in different regions of the country are different, it is actually difficult to have a relatively accurate judgment on Datang International's energy conservation and emission reduction work.

Table 3-6 Datang International's 2018-2020 low-carbon goals and achievements

Year	low-carbon goals and achievements
2018	The coal consumption for power supply decreased by 5.05 g/kWh year-on-year; the electricity consumption rate of power plants decreased by 0.35% year-on-year; The commissioning rate of desulfurization equipment and the overall desulfurization efficiency are 100% and 97.91%, and the overall efficiency is 99.% and 85.6%. Clean energy and renewable energy accounted for 25.71% of the company's total installed capacity; A total of 2,041.34 tons of fly ash, slag, etc., with a comprehensive utilization rate of 85.5%.
2019	The coal consumption for power supply decreased by 0.03 g/kWh year-on-year; the electricity consumption rate of power plants increased by 0.05% year-on-year; The rate of dust removal, desulfurization and denitration equipment for thermal power units has reached 100%; Operation rate of desulfurization is 100%, operation rate of denitrification is 99.86%; Clean and renewable energy accounts for 30% of the company's total installed capacity.
2020	The coal consumption for power supply decreased by 0.94 g/kWh year-on-year; the completion rate of electricity consumption of power plants increased by 0.1% year-on-year; Operation rate of desulfurization is 100%, operation rate of denitrification is 99.76%; Clean energy and renewable energy accounted for 26.55% and 5.28% of the company's total installed capacity; The recycling rate of circulating cooling water is 99%.

## IV. Problems Existing in Datang International's Carbon Information Disclosure

### 4.1 Problems existing in the way of carbon information disclosure

In terms of Datang International's carbon information disclosure method, the main problems include two aspects, namely, the lack of centralized disclosure method can easily lead to dispersion, and quantitative disclosure is less than qualitative information.

#### 4.1.1 Inconsistent disclosure methods can easily lead to decentralization

During the investigation, it was found that Datang International's annual report, social responsibility report, sustainable development report, and health, safety and environment report all involved the issue of carbon information disclosure. However, as carbon emission reduction has become an important social responsibility of thermal power generation companies, the existing disclosure methods should be integrated. But in fact, in addition to the relatively comprehensive description in the "Social Responsibility Report - Environmental, Social and Governance Report", a series of monetary carbon information is still scattered in the notes to the annual report. In addition, the lack of necessary indexes has greatly increased the difficulty and intensity of carbon information collection. ]. Even in the "Social Responsibility Report - Environmental, Social and Governance Report", there is no special design for carbon accounting information, the information is scattered and unsystematic, and it is highly arbitrary, which reduces the efficiency of carbon information use.

**4.1.2 Disclosure of quantitative information about currency is too small**

In the process of accounting information disclosure, not only qualitative information, but also quantitative information is needed to enhance the credibility and effectiveness of carbon information disclosure reports. But in fact, Datang International, like other domestic companies, still focuses on simple overview and introduction in carbon information disclosure, and lacks too much quantitative information support.

**4.2 Problems existing in the content of carbon information disclosure**

In terms of the content of carbon information disclosure by Datang International, the main problems include three aspects, namely, more disclosure of carbon management information but less disclosure of carbon performance information, more disclosure of non-monetary content but less disclosure of monetary content, and more disclosure of favorable information but less disclosure of unfavorable information. Disclosure of unfavorable information is less. That is to say, there is obvious bias disclosure.

**4.2.1 More carbon management information disclosure but less carbon performance information disclosure**

Generally speaking, carbon information quantification mainly involves carbon performance information. However, looking at the financial and non-financial reports of various types of carbon information of Datang International from 2018 to 2020, the content disclosed is mainly qualitative carbon management information, and relatively little carbon performance information. For details, please refer to Table 4-1.

Table 4-1 Carbon management and carbon performance information disclosed by Datang International

NO.	Carbon Management Information	Carbon Performance Information
1	Climate Change Risk Management	Greenhouse Gas Emission Reduction
2	Greenhouse Gas Emissions Management	carbon dioxide capture
3	Energy efficiency management	Methane recovery
4	Carbon Capture and Utilization Management	Carbon trading volume
5	Methane Recovery and Emission Reduction Management	-
6	develop renewable energy	-
7	Environmental Risk and Response Management	-
total	7 items	4 items

**4.2.2 More favorable information is disclosed but less unfavorable information is disclosed**

Similarly, no matter in the notes to the annual audit report or in the "Social Responsibility Report-Environmental, Social and Governance Report", it is rare to find negative news about carbon information. In the process of inquiring data, this article focuses on the punitive penalties disclosed by the national environmental protection monitoring platform to collect and sort out the major environmental protection accidents and undisclosed information of Datang International in 2018-2020, as shown in Table 4-2

Table 4-2 Datang International's major environmental protection accidents

Year	accident situation	Disclosure
2018	The sewage from oil and gas wells of Qinghai Branch was directly discharged into Erike Zhuoer Lake in violation of regulations, resulting in lake pollution.	undisclosed
2019	Jiangsu branch directly discharges untreated wastewater, phenols and PH2.5 seriously exceed the standard	undisclosed
2020	Gas leak at Shijiazhuang Coal Coking Company, causing air pollution	undisclosed

Data source: Environmental protection monitoring platforms in various regions of China and administrative penalty cases of environmental protection departments

As shown in the table, Datang International disclosed less negative news about its own carbon emission reduction work. In terms of related compensation, after investigation, the amount of compensation appeared in the "contingent liabilities" item in the annual report. In this way, the objectivity and comprehensiveness of the carbon information disclosed by Datang International will be affected, and the quality of its disclosure report will be reduced.

### **4.3 Problems existing in the supervision of carbon information disclosure**

In terms of carbon information disclosure supervision, there are two main problems: the interweaving with the government's interest chain reduces the effectiveness of supervision, and the carbon information data calculation and social auditing are difficult.

#### **4.3.1 Intertwining with the government's interest chain reduces the effectiveness of supervision**

The development of enterprises cannot be separated from the support of local governments. In particular, large-scale public utility-type enterprises play an active role in solving local employment problems and contributing to local fiscal revenue. In addition, the China Securities Regulatory Commission does not have clear regulations on the disclosure of carbon information by listed companies, which makes the local government less strict in supervision of some deviations and omissions in carbon emission reduction of enterprises, and lighter penalties. In this way, under the interweaving of the interest chain of local governments, the supervision of large enterprises such as Datang International has also been reduced.

#### **4.3.2 Carbon information data calculation and social auditing are difficult**

Another major reason for the low effectiveness of administrative supervision is that the relevant regulatory authorities lack a complete set of relatively complete regulatory systems and regulatory frameworks. Especially in terms of carbon information-related audit business, there is a lack of corresponding operating standard documents. In the high energy consumption field, the relevant accounting information of carbon accounting information needs to be included in the green processing technology and green electricity used in the procurement, processing and use of raw materials. The relevant links are complex and diverse, and statistics are difficult. As a branch of traditional accounting, carbon accounting often needs to convert different data into the same quantitative index used to calculate carbon dioxide emission reduction or emission in its analysis and statistics. Levels often fail to unfold smoothly.

## **V. Countermeasures for the existing problems in carbon information disclosure of Datang International**

### **5.1 Improvement measures at the government level**

As mentioned above, there are two main administrative reasons for the low quality of carbon information. One is that the relevant laws and regulations are imperfect, which makes disclosure less mandatory, and the other is that government supervision is decentralized, which makes supervision inefficient. Therefore, in terms of improvement, relevant suggestions should also be made from the perspective of perfecting legislation and supervision. In order to stimulate the participation of enterprises in carbon information disclosure, local governments should issue relevant administrative regulations and encouraging policies, and comprehensively take measures such as tax incentives, financial subsidies, financial incentives, and investment and trade incentives to actively guide enterprises to participate in carbon information disclosure. .

### **5.2 Improvement measures at the enterprise level**

At the enterprise level, the main reasons affecting the quality of carbon information disclosure include the unstable profitability of energy conservation and emission reduction work and the extreme lack of carbon accounting professionals. Therefore, it should be improved from the perspective of improving the professionalism of carbon information disclosure, actively exposing the unstable factors affecting profitability, and increasing the training of professional accounting talents.

Based on the above analysis, Datang International's carbon information disclosure method is mainly disclosed in the form of audit annual report notes and social responsibility report. However, in the process of disclosure, they tend to disclose less on-balance sheet information that affects earnings. However, as a listed company, stakeholders, especially investors, focus on the future value-added space, and deliberate concealment will lead to market speculation. Therefore, it is necessary to actively adopt a standardized carbon information disclosure method, combine on-balance sheet and off-balance sheet businesses, comprehensively and accurately disclose information including carbon assets and carbon liabilities, and improve the professionalism of carbon information disclosure.

The sample carbon accounting information disclosure form required by the carbon emission trading right can play a certain guiding role for companies such as Datang International that are included in the energy saving and reduction list. At the same time, the disclosure of the monetary information involved in carbon information will also help to improve the credibility of the disclosed carbon information report, balance the moral hazard and adverse selection risk caused by information imbalance, and improve the attractiveness of market investors.

### **5.3 Improvement measures at the social level**

With the transformation and upgrading of the country's low-carbon economy, the concept of carbon neutrality and carbon peaking has actually begun to slowly make the low-carbon economic development model have a certain commercial value. At the same time, with the acceptance and recognition of low-carbon life by



residents, a potential low-carbon economic life demand has also been created virtually. Therefore, both at the national policy level and at the level of residents' low-carbon living needs, the overall low-carbon and carbon-reduction work is in the ascendant and has far-reaching commercial value. Therefore, high-energy-consumption enterprises like Datang International actively participate in the publicity of social low-carbon emission reduction activities in the process of transformation and upgrading. By guiding and strengthening the carbon accounting information needs of stakeholders, it can further create new profit growth points for enterprises, obtain more long-term value investment, and promote the transformation and development of enterprises.

## VI. CONCLUSION

With the increasing impact of global warming on economic and social life, the world has a high consensus on carbon emission reduction. Among them, low-carbon transformation has become the main path of economic transformation. My country has been actively taking measures to reduce emissions since its strategic goal of carbon neutrality and carbon peaking has been clarified. The focus is on energy conservation and emission reduction in high-energy-consuming enterprises. The comprehensive and timely disclosure of the energy conservation and emission reduction work of enterprises involves the audit and disclosure of carbon accounting information. However, at present, my country is still in a blank state in the design of carbon information disclosure system, which needs to be improved urgently. Based on the related concepts of corporate carbon information disclosure in the context of carbon neutrality, this paper discusses related concepts including carbon neutrality, carbon information, the concept of carbon information disclosure, the method of carbon information disclosure, and the content of carbon information disclosure. In this way, the listed company Datang International, a high-energy-consuming enterprise, was selected as the case study object to conduct a comprehensive analysis of the current status of its carbon information disclosure, and to conduct an all-round exploration of the problems and causes of its carbon information disclosure work, and then corresponding countermeasures and suggestions are put forward to help the establishment and improvement of my country's carbon information disclosure system.

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