

The Transformation Policy of Energy Enterprises under the "Double Carbon" Policy and the Causes and Risks of the Green Premium

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Abstract: When the climate problem is becoming more and more serious, and the impact of climate change factors on financial markets is becoming more and more significant, Chinese President Xi Jinping has put forward the 3060 "double carbon target." In order to respond positively to national policies, most energy enterprises have responded to obtain a green premium. This paper gives an example of the "green" measures taken by two different types of enterprises: the limited liability company and the joint stock limited company. It analyzes why they get the green premium. While bringing benefits, the green premium also brings macro and micro risks. This paper puts forward some solutions that these energy enterprises can use to deal with the risks posed by the green premium: ESG rating system is used to disclose the risk of energy enterprises, as well as the use of various means to disclose the possible behavior of the government to protect the risk and guide investors to invest rationally. It is hoped that through this paper, various energy enterprises can pay attention to the potential risks and remind investors to invest rationally in energy enterprises.

Keywords: "double carbon", green premium, "green" policies, risks, ESG

1. Introduction

For a long time, climate issues have attracted much attention all over the world. In recent years, extreme climate, "el Niño phenomenon," and the "Greenhouse Effect" have become more serious. Inevitably, climate change "gray rhinoceros" has emerged in financial markets. "Black swan" refers to a significant, rare event that is unlikely to be predicted. However, it changes everything unexpectedly, while "gray rhinoceros" refers to a risk so common that people are used to it, a metaphor for a potential crisis with high probability and significant impact. In fact, by contrast, "gray rhinoceros" is scarier and more noteworthy than "black swan." In the context of a worldwide consensus to deal with climate change, climate change is no longer a rare "black swan" but a "gray rhinoceros" that lurks directly around human society and has a clear outline, with the start of the countdown slowly approaching. Climate change, a systemic risk sufficient to substantially impact the global financial system, is indeed coming and will be directly related to global carbon neutralization [1].

In order to protect their common homeland, countries have taken action. On 12 October 2021, at the 15th Summit of leaders of the Conference of the parties to the Convention on Biological Diversity, China, as a developing country, President Xi Jinping said: "I have officially announced that China will strive to achieve carbon peaks by 2030 and carbon neutralization by 2060. This is an important strategic decision made by China based on the inherent requirements of promoting the responsibility of building a community with a shared future for humanity and achieving sustainable development. China's commitment to reaching carbon peaks to achieve carbon neutralization is much shorter than that taken by developed countries and requires hard work by the Chinese side. "

As an essential measure to deal with the Greenhouse Effect and global warming, the "low-carbon economy" plays an important role. Green finance plays a vital role in promoting the realization of the "double carbon" goal. It refers to economic activities that support environmental improvement, deal with climate change and save and use resources efficiently, that is, environmental protection, energy conservation, Clean energy, green transportation, green building and other fields of project investment and financing, project operation, risk management, and other financial services. It gives rise to another concept, the green premium, which refers to the price difference between new products that can achieve carbon neutralization and those that still generate carbon emissions while meeting the exact utility of consumers.

However, among all industries, the high carbon emissions and less environmentally friendly behavior in the energy industry are the most obvious, so this paper is divided into limited liability companies and joint stock companies for energy enterprises; this paper makes a series of reforms on how to deal with the "double carbon" policy and puts forward some relevant environmental protection measures. Finally, taking "green" as the theme, combined with the equity transaction in the financial market, the case analysis is carried out by qualitative means; some risks caused by green bargaining are put forward, and the importance of effectively using ESG ratings to reduce risk.

2. Literature Review

He Wujie, Chen Hanhua, and Wang Zhuo concluded regression analysis based on the VAR model. As a result, it is concluded that the development level of green finance in China has improved significantly in recent years. Furthermore, developing and using green finance and renewable energy can effectively inhibit carbon dioxide emissions per unit. Therefore, in the short term, the development of green finance and using renewable energy to inhibit carbon dioxide emissions per unit have a certain degree of sustainability [2].

Han Guowen and Fan Chengheng of Wuhan University based on the Construction of the CMD portfolio and CAPM, FF3, FF4, FF5, and other models, the FamaMacBeth regression test of single factor and multiple factors is carried out. To determine whether green incentives or carbon risk premiums exist for enterprises with different carbon emissions in the Chinese stock market by quantitative means [3].

Liu Chuanheng, Luan Wei, and Guo Genyan of Jiangsu University put forward that green finance started late in our country's present, and the related investment and projects were mainly concentrated in the field of public utilities. The private enterprises dabbled less [4].

Zeng Qing pointed out that the impact of carbon emission right price on the stock price of energy companies has been paid more and more attention, and through the establishment of the VECM model to analyze the impact of carbon emission right price on the stock price of traditional energy companies and new energy companies: On the one hand, in the long run, there is a negative correlation between the price of carbon emissions and the share price of traditional energy companies, but its impact on the stock price of new energy companies is not significant enough. On the other hand, in the short term, there is a positive correlation between the price of carbon emission rights and the share price of traditional energy companies. In contrast, the relationship between the

price of carbon emission rights and the stock price of new energy companies changes from an initial negative to a positive correlation. The latter relationship is gradually weakened [5].

Therefore, this paper believes that it is necessary to understand the current situation of relevant energy enterprises, understand the possible risks, and put forward enlightenment.

3. Case Analysis

According to the provisions of the Company Law of China, the company belongs to the legal person organization. The main types of legal person companies include the limited liability company and the joint stock limited company. Therefore, the case of this paper is analyzed from these two types of companies. Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar:

3.1. "Green" Policy of Limited Liability Company - Ningxia Coal Industry Co., Ltd., National Energy Group

Ningxia Coal Industry Co., Ltd., a national energy group, covers coal washing and processing, coal sales, coal products and deep processing, import and export business, foreign economic cooperation, chemical building materials, material supply, and marketing, house leasing, agricultural and forestry development and so on.

After the double carbon goal, 3060 was put forward, in the face of the new situation of strengthening the construction of ecological civilization and energy saving and carbon reduction, Ningxia Coal Industry Co., Ltd., the national energy group, actively constructed a new development pattern, accelerated industrial transformation and upgrading, vigorously promoted energy saving action and low carbon and efficient production mode, and persisted in green, clean, low carbon and high quality.

According to the low-carbon development route, the company is actively developing new energy power generation. Its coal mines have been used to arrange photovoltaic projects for their use. According to Xinhua Network collation: "the company has built 11 photovoltaic projects, a total of 106.8 megawatts of installed machines, a total of 53000 tons of standard coal, carbon dioxide reduction of 60, 000 tons. The 4*5.98 MW distributed photovoltaic coal project to the oil and chemical industry and the first phase of Ningdong renewable hydrogen and carbon emission reduction demonstration project are being implemented. After completion, 253000 tons of standard coal can be saved, and 520000 tons of carbon dioxide will be reduced. "

In addition, in production management, the company actively promotes the transformation of energy-saving technology, energy-saving management innovation, and the introduction and promotion of energy-saving measures. Strengthen the control of the use and production process of all kinds of fuels and raw materials and strictly set energy consumption standards; for example, the total energy consumption, energy conversion efficiency, and water consumption per unit product of the coal oil plant have reached the first-class level in China. Moreover, actively practice the concept of green development, such as water saving and power saving activities in the mine, through technical upgrading to build an intelligent water platform and intelligent water saving system, at the same time to transform the water pipe network, improve work efficiency and production energy efficiency; based on the source to save electricity and create efficiency, to achieve a double reduction of mine electricity load and consumption.

To summarize, Ningxia Coal Industry Co., Ltd., a national energy group, insists on "energy consumption double control to help reduce cost and increase efficiency, green and low carbon lead to innovation and development." Not only the production source of transformation, from the original coal and other traditional, non-renewable energy for thermal power generation, to slowly change to

the use of solar energy and other clean energy power generation; and the use of technological innovation to reduce energy consumption, the improvement of science and technology into production, to save energy and reduce carbon emissions.

3.2. Joint Stock Limited Company - Inner Mongolia Electric Investment Energy Co., Ltd

The main business of Inner Mongolia Electric Power Co., Ltd. is that coal products are mainly sold to coal-fired enterprises in Inner Mongolia, Jilin, Liaoning, and other areas, which are used in thermal power generation, coal chemical industry, local heating, and so on. Power products are mainly sold to the Northeast Division of the State Power Grid, which is used for power and thermal sales. The production and sales of aluminum products mainly include aluminum liquid and aluminum ingot. Among them, the aluminum liquid is mainly sold to the surrounding aluminum processing enterprises; aluminum ingots are mainly sold to Northeast and North China.

3.2.1. "Green" Policies Implemented

In order to implement the "3060" goal and respond to the national strategy of vigorously developing the renewable energy industry, Inner Mongolia Electric Investment Energy Co., Ltd. actively promotes the adjustment, transformation, and upgrading of the industrial structure of the company and the promotion of efficiency. Implementation of the policy from traditional energy power generation to green power conversion. What is green electricity? Green electricity means that in producing electricity, its carbon dioxide emissions are zero or close to zero. Compared with other methods (such as thermal power), the electricity produced by other methods has a lower impact on the environment. Its primary sources are solar energy, wind energy, biomass energy, geothermal energy, etc. China is dominated by solar energy and wind power.

Green electricity continues to promote production and sales growth at a high rate. According to the Oriental Wealth Research report: "according to the company's March announcement, the company intends to invest in three new energy projects, with a total installed capacity of 1.5GW: To Liaoning 1 million kilowatt wind power delivery project, Shanghai Temple to Shandong ultra-high pressure delivery channel Alashan base 400MW wind power project, Jinzhong Yuci District 100MW roof distributed photovoltaic project. According to previous announcements, the first two were approved at the end of 2019. So far, about 1.55GW of new energy units have been connected to the network, and the installed capacity of projects under construction has been approved. The planned project of 2.08GW is to be approved, totaling 5.98GW. Considering the short construction cycle of green electric installation machines, the grid-connected capacity is expected to increase centrally in 2022. As of April 2022, the company already has green electricity in the transport of 1.6Gw. In addition, the company still has 1675.3MW photovoltaic, 3065.5MW wind power, and 626MW scenery projects in construction and planning, the total amount of 5366.8MW under construction and planning, the increase is as high as 335.4%, the growth potential is enormous. The company plans to install new energy to more than 7000MW by the end of the 14th five-year Plan. It is expected that the proportion of new energy installed in the company will continue to improve, and the transformation and upgrading will continue to advance. "

3.2.2. "Green Premium" and Its Causes

Under the double carbon target, the new energy installation project of Inner Mongolia Electric Investment Energy Co., Ltd. continues to be launched, and the transformation of green electricity is also accelerating. As a result, it is believed that "slow cattle are about to start."

In the recent stock market, Inner Mongolia Electric Investment Energy Co., Ltd., referred to as "002128.SZ", its shares have been used as the leading stock in the coal industry, up 9.99%. The

following table (TABLE I) is the data and ranking of the total market value, net assets, net profit, and the "investment energy" and the coal industry.

Table 1: Data of "investment energy".

	total market value	net assets	net Profit	P/E ratio	PB	gross profit rate	net profit ratio	ROE
Electric energy source	31.53 billion	25.56 billion	1.512 billion	5.21	1.50	41.27%	26.81%	7.13%
Coal industry (industry average)	50.43 billion	36.96 billion	1.879 billion	4.30	2.51	32.92%	14.45%	5.27%
Industry ranking	11 34	10 34	10 34	9 34	18 34	15 34	7 34	11 34
Quartile attribute	Higher	Higher	Higher	Higher	Lower	Higher	Higher	Higher

Source: Eastmoney Choice Data

According to the table of changes in the company's share price for each quarter from 2020 to 2022 (FIGURE 1), as shown in the chart, the company's unit share price rose significantly by "more than 10" on September 30, 2021.

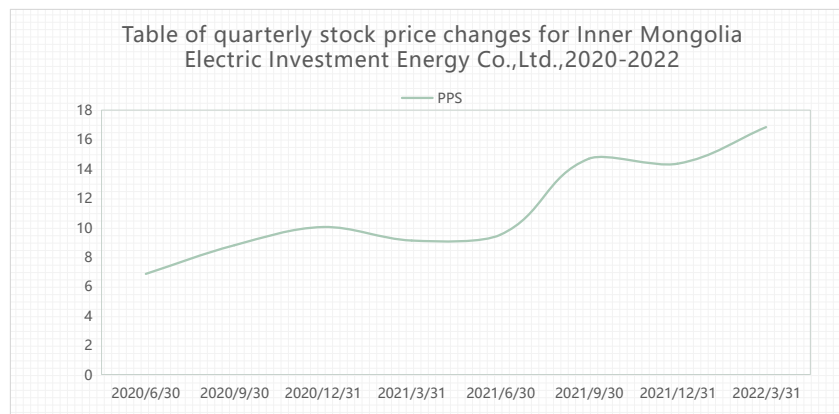


Figure 1: Quarterly stock price changes for Inner Mongolia Electric Investment Energy Co., Ltd.,2020-2022.

So why did the double-carbon policy come up with a green premium for the company's shares in September 2020, but it was delayed by a whole year? First, it takes time for the state to perfect the policy and promulgate the other supporting policies. It also takes time for enterprises to respond to the national policy according to their actual situation, which is likely to lag. Moreover, as seen from the company's 2021 annual report, in 2021, the company's board of directors decided to pass several photovoltaic and wind power projects.

At the same time, it is inevitable to transform low consumption and low carbon. In order to adapt to the current situation, investors will gradually withdraw their funds from companies that are seriously polluted, less environmentally friendly, and contrary to green development and switch to low carbon and low energy consumption "green" enterprises. When investors find that "investment

energy" is in response to the national call for "double carbon" and implement a series of relevant green policies, they will think that "investment energy" has a more fantastic future and room for future development and is more willing to invest its money in it, to obtain a higher return on investment in the future.

Therefore, it is reasonable to infer that the more significant premium for stocks from June 30, 2021, to September 30, 2021, is a green premium, which is likely to be due to: First, under the background of the double carbon target, the current energy reform is in a critical period, the planning and transformation of traditional energy enterprises have become the general trend of the times. Second, the company relies on the new energy installation leading central enterprise SPIC group, the transformation direction is clear, takes the lead in the layout green electricity transformation and already has the first start scale superiority, is expected to form the high barrier core competitiveness in the medium and long term. Third, the company attaches importance to the "double carbon goal," actively participates in the development of new energy projects, constantly increases the intensity of new energy development, and puts green power development in an important position. Investors are bullish on the long-term performance driving force of the company's green power transformation, turning the investment intention into action, which makes the stock price of Inner Mongolia Electric Investment Energy Co., Ltd rise.

4. Risks

To sum up, it can be proved that energy enterprises comply with the "double carbon goal" policy and implement a green policy, making investors more inclined to flow funds into such enterprises. Therefore, the risk of favoritism and fraud is not ruled out. This paper starts from the macro and micro angles.

4.1. From a Macro Point of View

The transition from high energy consumption to low energy consumption is an inevitable trend. However, suppose we want to give full play to the leading role of green finance in the equity market. In that case, it is vulnerable to two aspects: First, if the traditional energy enterprises want to transform and upgrade, the "green" principle will run through the enterprise policy in an all-round way, which needs the support of science and technology. However, the development of environmental protection technology is currently limited, and the R & D process takes a long time. Second, there is a trend of investors' capital inflow from high-energy-consuming enterprises to low-energy-consuming enterprises in the stock exchange market. However, high-energy-consuming enterprises want to compete with low-energy-consuming enterprises if they want to transform further, and raising funds will not be easy.

4.2. From the Micro Point of View

It can be divided into three angles: enterprise, government, and investor.

4.2.1. From the Perspective of Enterprises

In order to get the funds of investors, enhance the market value of enterprises or obtain a stock premium, the strategy makers of some energy enterprises will put forward the policies related to transformation or participate in some new energy projects in the foreign announcement, package yourself as a "green" enterprise. However, in essence, it still carries on the production activity such as power generation in the way of traditional pollution and high energy consumption. Alternatively, you can exaggerate the effort and effectiveness of environmental protection issues, purchase inferior

machines and materials for new energy projects, and in extreme cases, do not even purchase the implementation of "in the name of environmental protection to save operating costs," that is, "Green-washing" risk [6]. They confuse investors by shaping a strong "green" appearance, allowing them to invest in them, thereby generating additional returns.

In order to raise additional funds, it may also buy some stakeholders to give funds, abet them to buy stocks in the image of market investors, form the illusion of rising stock prices, and guide other investors to buy to obtain equity financing.

In order to enjoy policy preferences and meet the requirements, decision-makers may lie about pollution data, for example, false reporting of carbon emissions or stealing carbon dioxide emissions, when corporate finance personnel are vulnerable to oppression by senior managers or volunteered to help enterprises make false accounts, to help enterprises win tax cuts, get kickbacks and other preferential policies.

4.2.2. From the Point of View of the Government

In order to profit economically, some government officials may accept bribes from these energy enterprises and use public power or position to help enterprises engage in malpractices for personal gain. For example, in the distribution of carbon emissions is unfair to bribe enterprises to reduce the standard of carbon emissions; for bribing enterprises that steal carbon dioxide, ignore their illegal and illegal behavior; what is more, give bribing enterprises excessive preferential policies to seek more significant economic benefits and enrich their private pockets.

4.2.3. From the Perspective of Investors

In the circulation market, all investors appear as the main body of consumption, and almost all consumer materials and information need to be obtained through operators and other consumers, so in the face of fraud, deceit, carelessness, and malicious behavior of operators, consumers will often become vulnerable groups, bearing huge risks and possible damage. Therefore, once the information between investors (consumers) and operators in the same transaction does not match and is asymmetrical, investors will be misled and make the wrong investment decisions. Besides, the public psychology of investors will lead them to believe the advice of their family or friends around them, like to follow suit, through the heads of others, save their groping process, to buy some so-called "green" enterprise stocks.

5. Solution

First of all, in the thesis "Research on the Development of Green Financial Policy in China," the problem of "lack of enforcement of environmental information disclosure" in the development of green finance, this paper believes that through the information provided by ESG rating to the market to convey the energy enterprise in E(environment), S(society), G(governance) three dimensions of indicators and situations can effectively avoid some potential problems [7].

Table 2: ESG evaluation index system of MSCI.

3 pillars	10 themes	37 key issues
E	Climate change	Carbon emissions; product carbon footprint; climate impact financing; climate change vulnerability
	Natural resources	Water resources pressure; biodiversity and land use; raw material procurement

Table 2: (Continued).

E	Pollution & Waste	Toxic emissions and wastes; packaging materials and wastes; electronic waste
	Environmental opportunities	Clean technology opportunity; green building opportunity; renewable energy opportunity
S	Human capital	Labor Force Management; Human Capital Development; Health and Safety; supply chain Labor Standards
	Product responsibility	Product safety and quality; chemical safety; financial product safety; privacy and data security; responsible investment; health and population risks
	Stakeholder opposition	Controversial procurement
	Social opportunities	Accessible communication; access to finance; access to health care; health and nutrition opportunities
G	Corporate governance	Board diversity; executive compensation; ownership and control; accounting
	Corporate behavior	Business Ethics; Anti-competitive practices; tax Transparency; Corruption and instability; instability of the Financial system

Source: MSCI website

As seen from the above table, this paper believes that the environmental dimension of ESG rating plays a significant role in evaluating whether an energy enterprise is "green." It audits and inspects from many aspects and judges whether the environmental protection measures of enterprises are in place through the summary of relevant data. Moreover, the governance dimension in ESG rating also controls some potential problems at the level of corporate governance and corporate behavior to a large extent. With the improvement of the models used and the continuous comparison with the actual data, most rating agencies' weights and rating systems are constantly being optimized. This can better help investors to understand the "true face" of the enterprise.

Moreover, rated companies are usually compared with their peers rather than all the companies worldwide, making the ranking results more fair and comparable. For example, an oil and gas company has a high ESG rating, which could mean that it is a fossil fuel producer, refiner, transporter, and retailer and is an industry leader in terms of how to deal with environmental, social, and governance risks. Moreover, as a third-party organization, ESG evaluation institutions can evaluate energy enterprises from a more objective, fair, and impartial point of view. Enterprise information is disclosed to the public through the enterprise itself and multi-output, making this information more authentic and reliable. Therefore, this paper holds that energy enterprises must carry out ESG evaluation, which can not only effectively avoid the potential problems existing within the company but also provide a robust and reasonable basis for publicity and will also significantly reduce the risk of government and enterprises seeking favoritism and fraud together [8].

In addition, if the government handles the protection of bad people and bad things and actively broadens the channels of public opinion response, it is necessary to give full play to public supervision and media supervision and call on the masses to make legitimate complaints or to report reports from relevant departments and to report evidence to report reports. If they have the evidence to report reports, they may implement a reward system for reporting truthfully.

For investors themselves, to make themselves accept the diversification of information channels, to maintain their ordinary heart, more study, more observation, more thinking, friends and experts can learn from the opinions of reference, but do not blindly listen to; do not sit back and wait for returns, free time to understand the market situation, grasp the market dynamics.

6. Conclusion

This article carries on the case analysis from the limited liability company and the joint stock limited company, respectively, thus sums up the energy enterprise will deal with the climate question related environmental protection measure under the double carbon target policy and can obtain the green premium by implementing the environmental protection measure. However, in obtaining a green bargaining price, there will also be risks and hidden problems. Therefore, this paper suggests solving the problem from the direction of ESG rating or effectively avoiding the risk.

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