

Research on financial risk identification and response strategies of Jingneng Power under the dual carbon policy

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Abstract: Taking Beijing Jingneng Electric Power as a case, this paper discusses the impact of the dual carbon policy on the financial risk of enterprises through case analysis, literature research and inductive summary, and identifies and analyzes the causes of the financial risks existing in Jingneng Power. The study finds that the financial risk of Jingneng Power comes from policy risk, market risk and technology risk, among which the "dual carbon" policy is a significant risk factor faced by the company. This paper further analyzes the specific impact of the "dual carbon" policy on the financial risk of Jingneng Power, which is mainly manifested in the high financing cost and the increase in procurement cost. Finally, this paper proposes a countermeasure to the financial risks of Jingneng Power, including expanding diversified financing channels and reasonably controlling cost management, so that enterprises can pay more attention to and implement political, economic and social responsibilities, and provide solid support for promoting the country's clean and low-carbon development.

Keywords: dual carbon policy; Jingneng Power; Financial risk

1. Introduction

In the context of "carbon peaking and carbon neutrality", enterprises are facing challenges and opportunities, and some enterprises in various fields will be restricted. Enterprises should actively assume environmental responsibilities, adjust their development strategies and long-term development plans, accelerate the pace of industrial diversification, promote industrial restructuring, promote energy conservation and emission reduction, and build their green core competitiveness [1]. At the theoretical level, this paper can summarize the relevant theories more clearly by combing the research results of domestic and foreign scholars on financial risk identification and response, and form a system of financial risk early warning and prevention measures. At the practical level, energy-consuming enterprises are the top priority of national economic development, and the industries represented by electricity are closely related to people's daily life. With the continuous implementation of the "dual carbon" policy, power enterprises pay attention to environmental responsibility, consciously put forward clear internal regulations for the protection of the ecological environment, and at the same time, enterprises should pay attention to ecological environmental protection and future risk prevention, and incorporate them into financing, investment and capital operation management, so as to achieve the green development goals of low energy consumption, low pollution and low emissions.

2. Theories related to the "dual carbon" policy and financial risks

2.1. Relevant concepts of the dual carbon policy

At the 75th session of the United Nations General Assembly on September 22, 2020, China officially put forward the vision of "achieving carbon peak by 2030" and "achieving carbon neutrality by 2060", which have been emphasized on many important international occasions [2]. "Dual carbon" is the abbreviation of "carbon peak" and "carbon neutrality". "Carbon peaking" refers to carbon emissions reaching a historical peak, and then entering a continuous decline stage through the peak, which is a historic turning point for carbon emissions to fall from rising to falling, and is also an important symbol of the decoupling of carbon emissions from economic growth. "Carbon neutrality" refers to the direct or indirect carbon emissions generated by human activities in a region over a period of time, offsetting the carbon sink effect of the region, so as to achieve "net zero emissions" of carbon.

2.2. The development trend of carbon peaking and carbon neutrality

(1) "Double carbon" is long-term. Low-carbon transition is a long process, and in order to achieve energy conservation and emission reduction, technology updates, equipment iteration, and energy storage development all require a certain amount of development time and space. "Carbon peaking and carbon neutrality" is regarded as a long-term strategy for national economic development and an inevitable requirement for high-quality economic development.

(2) The short-term economic pain caused by "dual carbon" is inevitable. In the process of China's transformation from "high-speed" development to "high-quality" development, it will inevitably go through countless hurdles. At present, China is in a period of rising carbon emissions, therefore, compared with developed countries such as Europe and the United States, the road to "carbon neutrality" will be more rugged, and the industrial structure transformation brought about by "carbon peak" and "carbon neutrality" will also be more rapid and drastic. In the short term, the "dual carbon" goal has a significant impact on traditional energy-intensive industries, such as electric power, steel, aviation and automobiles, which are under greater pressure to "stabilize growth".

(3) Clean energy is the future development direction. It is inevitable to reduce the use of fossil energy and replace its development with clean energy. At present, coal-fired power generation is still the largest energy source for power generation in China, and excessive reliance on coal-fired power generation means that coal consumption will remain at a high level for a long time, resulting in higher carbon emissions. There is great potential for clean energy development in the future, especially photovoltaic, solar and wind energy. In the short term, all kinds of clean energy have more or less technical bottlenecks and uneconomical costs. Among them, two typical problems are: energy storage and green premium, and the current energy storage technology still needs to be broken through in terms of storage scale, cost, and safety.

(4) The carbon trading market is in its infancy, and its financial attributes are prominent. Carbon finance trading can internalize the external costs of carbon emissions, effectively alleviate the negative externalities of carbon emissions, and achieve the goal of reducing carbon emissions. In July 2021, the national carbon emission trading market was officially launched and traded. In the initial stage, only the power industry was covered, and the form of carbon trading was mainly quota trading [3], which was characterized by fewer trading categories, less information disclosure, and less industry coverage. In the future, we will actively and orderly develop green, ecological and low-carbon products and businesses, gradually form a carbon emission reduction support tool system that effectively reduces carbon emissions, provide continuous and stable investment and financing support for enterprises that achieve carbon peak and carbon neutrality, and establish and improve an effective operating mechanism for green finance.

2.3. Financial risks

2.3.1. The concept of financial risk

Financial risk refers to the possibility of loss due to some unforeseeable or uncontrollable factors in various financial activities, resulting in deviation between actual income and expected return. This article divides financial risk into broad financial risk and narrow financial risk. Financial risk in the narrow sense, also known as financing risk, refers to a risk that an enterprise makes mistakes in financing activities, resulting in an unreasonable financial structure or excessive debts, which in turn leads to a financial crisis in the enterprise. Broadly speaking, financial risk is not only the risk of financing, but also the risk of various financial activities such as investment, operation and income distribution.

2.3.2. Classification of financial risks

According to the financial risks generated by enterprises in different financial activities, they can be divided into four types: financing risk, investment risk, capital recovery risk and income distribution risk.

(1) Financing risk. Financing risk refers to the cost of capital required by a company to raise funds through debt, which in turn affects the changes in the profitability of the enterprise. Modern companies are mainly financed by equity financing or debt financing. Typically, the interest rate for debt financing is lower than the cost of equity capital, but it requires timely repayment of principal and interest, reducing the flexibility of funding. If a company becomes insolvent, then it will enter the bankruptcy

liquidation stage, in contrast to transferring the company's equity to another company, which can be avoided. The cost of debt financing is low, and it also has a certain effect on the value of the company. As a result, companies need to raise not only debt, but also equity. Between these two financing methods, how to distribute the proportion and how to determine a suitable capital structure has always been a major problem in the operation and management of enterprises.

(2) Investment risk. The so-called investment risk is the risk that the company's revenue is lower than the cost due to the low rate of return of the project invested by the company. When the rate of return on an investment project is less than the cost of capital rate, it will cause the company's investment loss, so that the company cannot obtain profits from continuing operations.

(3) Risk of capital recovery. A stable and healthy flow of capital can bring life and vitality to a company, from the procurement of raw materials, to the production and processing of goods or services, to the receipt of the return of funds, the process is full of uncertainties. Therefore, whether the funds can be recovered in a timely and full amount is of great significance to the continuous operation of the enterprise, which is the risk of capital recovery.

(4) Income distribution risk. The business activities of enterprises are also constrained by the distribution of their earnings. Profit distribution is an indispensable part of a company's financial activities, and its importance is self-evident. For listed companies, how to distribute dividends and retained earnings is still a major problem, which also contains financial risks.

3. Identification of financial risks and their causes under the "dual carbon" policy on Jingneng Power

3.1. Introduction to Jingneng Power

Beijing Jingneng Electric Power Co., Ltd. (hereinafter referred to as "Jingneng Power") is a subsidiary of Beijing Jingneng Group, the first listed power company in the capital, it has a long history, dating back to the century-old Shijingshan Power Plant, listed on the Shanghai Stock Exchange in 2002 (stock code: 600578). Since its listing, the scale of the company has been expanding, and its business involves thermal power generation, cogeneration, coal-power pooling, electricity sales operation, new energy power generation, comprehensive energy services, etc. At present, the company has 20 operating power stations, 3 thermal power projects under construction, 4 power sales companies, 4 integrated energy business companies, and the power companies controlled by it are located in 9 regions such as Hebei, Inner Mongolia, Shanxi, Henan, Jiangxi, Hubei, Ningxia, etc., mainly directly supplying the Beijing-Tianjin-Tangzhou region, and the direct transmission of electricity to Beijing exceeds 34% of the total electricity consumption in Beijing, and is responsible for ensuring the important task of power supply and heating in Beijing. In 2021, the company achieved 72.1 billion kilowatts of electricity generation and 180 million square meters of heat supply. The company continues to promote the "five fine management", implements the "Liu'an Project", makes every effort to build a smart power plant, actively carries out safety production work, and has achieved fruitful results in scientific and technological innovation. In the world, Xilin Power Generation is the first to research and apply the flue gas water lifting technology of 660MW thermal power units, and has also won the 2020-2021 National Quality Engineering Gold Award, and the headquarters and 12 enterprises have been certified as high-tech enterprises. The "Double Hundred Action" has made a new breakthrough, and the company's equity incentive system has been fully implemented, giving full play to the leadership and core role of the party committee, further strengthening the party building, and continuously improving the effectiveness and scientificity of decision-making.

The company is committed to providing customers with clean, safe and efficient energy products, and has been rated as a national AAA enterprise credit rating for many years, and has won the "China Golden Bull Award" and "Golden Bauhinia Best Listed Company". In order to achieve the "3060 dual carbon goal", we should change our concepts, strengthen management, seek development, and vigorously develop new energy, such as wind, solar, and fire bundled and delivered, wind, solar, and fire complementary integration, wind, solar, and hydrogen storage, develop smart microgrids, regional energy management, and comprehensive energy management, accelerate industrial transformation and upgrading, and promote high-quality development.

3.2. Identification of financial risks of Jingneng Power under the "dual carbon" policy

Financial statements are the information that listed companies must disclose to the outside world, and they are the first-hand materials for the audience to understand the operating conditions of the enterprise. Financial statements are composed of a balance sheet, a profit and loss statement, a cash flow statement, a statement of changes in owners' equity and notes, which can reflect the financial position of an enterprise on a specific date and the operating results and cash flow of the accounting period and other accounting information. Accordingly, investors and creditors can conduct credit evaluation through the information in the financial statements, understand the current business development of the enterprise, and make reasonable investment decisions for it. Profitability is the ability of an enterprise to obtain profits through the current production and operation activities, the essence of enterprise profitability analysis is to analyze the operational efficiency of various resources of the enterprise, the higher the efficiency, the higher the efficiency of the use of enterprise assets, and the main goal of enterprise operation is sustainable growth. Enterprise development capability refers to the continuous growth of assets and profits through its own production and business activities, and the judgment of future value ^[4]. From the perspective of financial analysis, this paper analyzes the indicators of the company's financial status and operating results, takes the balance sheet, income statement and cash flow statement as the main data sources, and analyzes the financial data indicators of the enterprise's solvency, profitability, operation ability and development ability to identify whether the enterprise has financial risks.

3.2.1. Solvency financial risk identification

The current ratio of Jingneng Power mainly showed a downward trend, from 0.578 in 2018 to 0.485 in 2019, and 0.491 in 2020 to 0.452 in 2021. During the same period, the overall decline in the quick ratio indicates that the short-term solvency of enterprises is insufficient, which is also a good verification of this. From 0.520 in 2018 to 0.424 in 2019, and 0.442 in 2020 to 0.389 in 2021, it indicates that the ability of enterprises to quickly liquidate is decreasing, and the pressure on enterprises to repay short-term debts through rapid realization is increasing. The current ratio fluctuates greatly, and once the cash flow is broken, the debt cannot be repaid in time, which is easy to cause a crisis of confidence in the company, which is not conducive to the company's long-term development.

3.2.2. Identification of operational capacity and financial risks

The accounts receivable turnover rate of Jingneng Power has shown a downward trend year by year. From 7.401 times in 2018 to 5.611 times in 2021, the accounts receivable turnover rate will increase to 6.763 times in 2022, and the amount of accounts receivable will also increase year by year, from 1.857 billion yuan in 2018 to 4.401 billion yuan in 2022.

3.2.3. Profitability financial risk identification

The profitability indicators of Jingneng Power fluctuated greatly from 2018 to 2022, and from 2018 to 2020, the profitability indicators of Jingneng Power showed an upward trend, but in 2021, affected by the "dual carbon" policy, thermal power generation enterprises encountered a cold winter, high coal prices, power generation and heating costs were inverted, and gross profit margin, net profit margin, return on total assets and return on net assets were all negative, of which the gross profit margin in 2021 was -8.00%, and the net profit margin was -17.44%, the return on total assets was -4.75%, and the return on equity was -14.30%, both of which were the lowest in five years. In 2022, various indicators will gradually turn positive, and in general, the profitability of Jingneng Power is not high, which means that the profitability of Jingneng Power has declined significantly, which indicates that it is facing obvious profit risks.

3.3. Analysis of the causes of financial risks

3.3.1. The financing cost is high and the financing channel is relatively single

Jingneng Power has poor liquidity and is unable to repay in a timely manner, which is easy to bring debt repayment risks to the company. The promotion of the "dual carbon" goal requires power companies to accelerate transformation and upgrading, and expand the scale of energy-saving equipment introduction. At present, the biggest challenge faced by China's power enterprises is the high financing cost of traditional power enterprises. Although financing channels such as self-owned funds, bank loans and local financial support can alleviate the shortage of funds, the power industry is a livelihood industry, and it is difficult for power income to balance the losses of enterprises with the

continuous increase in raw material costs. Financing has become the main means of meeting capital needs, however, because thermal power companies are polluting enterprises, the financing cost of obtaining credit from financial institutions is relatively high, leading to increased debt service risks. In addition, the financing channels of traditional thermal power enterprises are relatively single, and the enthusiasm for using the capital market is not high, especially the enthusiasm to participate in the national carbon market transactions is not high, resulting in a relatively single financing channel for enterprises.

3.3.2. Poor ability to realize accounts receivable

With the promotion of the "dual carbon" policy, the development trend of centralized and intensive new energy power stations in China is obvious, and the single scale of new energy power stations has increased significantly, which makes the average construction period of power stations longer and the speed of payment collection slowed down. The accounts receivable turnover rate of Jingneng Power is declining year by year, which is the embodiment of the poor realizability of accounts receivable, which shows that the average collection period of the enterprise is longer and the bad debt loss is more, which means that the cashability of accounts receivable is poor and faces certain operational risks, so attention should be paid to the company's accounts receivable realizability.

4. Financial risk response strategy of Jingneng Power under the "dual carbon" policy

4.1. Expand financing channels and reduce the risk of debt repayment

In order to cope with the high debt ratio of Jingneng Power, it is necessary for the company to fully rely on various preferential policies to continuously improve the operational efficiency of various assets and achieve the purpose of reducing the company's asset-liability ratio.

First, Jingneng Power should make full use of the policy to alleviate the company's financial pressure. Under the "dual carbon" goal, in order to cope with the new challenges, power companies must interpret relevant policies, understand the situation, strengthen data management, establish a carbon emission and carbon asset management system, strengthen the basic management of carbon emissions, do a good job in carbon emission detection, reporting and verification, and actively use existing preferential tax policies to reduce the tax burden and financial pressure on enterprises. At the same time, power enterprises must actively organize new energy development conferences, strengthen new energy research and training, comprehensively plan new energy projects, and strengthen capital investment in new energy research and development in accordance with the requirements of "double carbon", so as to occupy a certain advantage in market competition and reduce the tax burden of enterprises.

Second, Jingneng Power needs to accelerate transformation and upgrading and strengthen asset management. By analyzing the reasons for the high debt ratio of China's power enterprises, it is believed that the low asset utilization rate is the main reason for the high debt ratio of China's power enterprises. Especially in the context of "double carbon", the state has increased its support for the renewal and transformation of backward production capacity, which has caused serious idle problems in traditional old equipment. To this end, the company should improve the efficiency of asset management, timely repayment of debts to reduce the balance sheet, and continuously increase the proportion of shareholders' equity.

Third, Jingneng Power needs to improve the efficiency of carbon asset operation. Asset operation is an important way for power companies to achieve high-quality development. In the context of "dual carbon", power companies need to improve the efficiency of asset utilization. On the one hand, it is necessary to rationally arrange cash flow expenditure, and on the other hand, it is necessary to strengthen the management of carbon assets and recover all due funds in a timely manner, so as to improve the utilization efficiency of carbon assets.

4.2. Build diversified financing channels

Jingneng Power should make full use of its own resource advantages and optimize the comprehensive allocation of resources in all aspects to achieve the purpose of reducing financing costs. At the same time, the improvement of the financial system has also promoted the innovative and diversified development of financing methods in the power industry, optimized the financing structure of enterprises, reduced the financing costs of enterprises, and dispersed some capital risks. First of all,

power enterprises can rely on their own good credit advantages, based on raw material procurement, electricity bill settlement and other scenarios, to build a financial platform, relying on the power industry chain, so that financial services act on the industrial cycle, and then the industrial cycle reacts to financial services, effectively ensuring the healthy and sustainable development of the power industry chain. The second is to make full use of green finance, explore green credit, green bonds and green investment areas, expand new businesses, and flow part of the funds into start-ups such as clean energy technology, environmental protection, and energy conservation.

5. Conclusion

The need and importance of unlocking the potential of a low-carbon economy is reflected at both the domestic and international levels. At the international level, the current global trend of "carbon neutrality" will reshape the global political and economic landscape in the future. If China can occupy an absolute upper hand in the trend of "carbon neutrality", our international status and influence will be greatly enhanced, which will be a key part of our great national rejuvenation. At the domestic level, decarbonization is the only way for China's economic and social transformation and from extensive development to high-quality and sustainable development. Taking Jingneng Power as an example, this paper analyzes and studies the financial risks of enterprises, and provides theoretical support for enterprises to practice the concept of green environmental protection development with low energy consumption, low pollution and low emissions in terms of financing, investment, capital operation and management. This is of great significance for vigorously developing green and low-carbon industries, accelerating the cultivation of strategic emerging industries, and promoting the development of green and low-carbon industries empowered by emerging technologies such as the Internet. However, due to the limited level of its own, there are still many issues that need further research. Under the background of the dual carbon policy, the coping strategies of energy consuming enterprises are limited to fiscal and tax policies, environmental protection responsibilities and diversified financing channels, which are not very comprehensive and systematic. This paper only extracts the financial indicators from the four aspects of the enterprise's solvency, operating ability, profitability and development ability, which has certain limitations, and it is necessary to further refine the indicators and conduct more in-depth research in the future.

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