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Research on investment strategy of new energy projects

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Abstract. The new energy industry is an important part of energy strategy. Investment growth in the new energy field is an inevitable trend, so it has strong research significance on the new energy investment strategy. However, as new energy projects are characterized by new technologies, high cost and low resource density, and many projects have difficulty in obtaining expected returns and even some losses. Based on the in-depth analysis of the technical and economic characteristics and operational investment characteristics of new energy projects, this paper analyses the main investors of new energy projects and makes some research on the investment strategies of new energy projects.

1. Introduction
New energy [1, 2], also known as unconventional energy, refers to a variety of forms of energy other than traditional energy sources. It has just begun to be developed or is being vigorously studied and has yet to be promoted. There are many kinds of new energy, and it is different from traditional thermal power and other energy sources. As the industry develops, new forms of energy are constantly being added. In addition to the well-known sources of wind, solar and biomass [3, 4], clean energy [5, 6], clean combustible fossil fuels, and small hydropower [7] are gradually being incorporated into the clean renewable energy category. With the development of the industry, more forms will enter the choice of new energy investors.

The new energy investment strategy [8] is to analyze the investment value of each new energy form under the external environment condition. It combines the internal cup characteristics of different investors, and sets a set of investment rules and methods with strong pertinence, new energy field, flexible and real time. For different investors, because of their internal environment, the competition, risk tolerance, and the advantages and disadvantages in different expectations of earnings, etc., in the face of the same or similar external investment opportunities, the strategy may be there is a big difference.
2. Technical and economic characteristics and operational investment characteristics of new energy project

2.1. As a new energy source, the new energy industry must have the characteristics of the new energy economy.

2.1.1. The energy issue is related to the economic security of the national society, and the new energy industry is a strategic industry that the country needs to push forward vigorously. The new energy industry is the basic industry of the future economy. In the industrial system, it provides the basic conditions for other industries and provides services for most industries, which is the basis and prerequisite for the development of other industries. In the case of insufficient conventional energy, only the development of new energy and the expansion of energy can ensure energy supply. The new energy industry is at the beginning of other industries, and its development restricts the development of other industries.

2.1.2. Compared with traditional energy, the new energy industry has the advantages of environmental protection, safety and cleanliness. The development of new energy sources can fundamentally solve the atmospheric pollution situation. The new energy industry is not only about solving energy problems, but also about its environmental value.

2.1.3. The growth model of the new energy industry is unique. The new energy company was invested in the early stage of its establishment, which was almost a loss. If it is divided into N stages, the loss gradually decreases after the first stage, and the profit will start to appear in the N phase. The unique growth model makes it necessary for new energy projects to invest in a large number of enterprises that are in the red. Therefore, it is necessary to keep the evaluation work forward.

2.1.4. The new energy industry is a comprehensive high-tech industry with high technology content, which is characterized by high risk and high input. New energy involves high technology such as biology, ocean, new materials, and electronics and so on. Its technology research and development requires huge capital investment to support it, and there are high research and development risks.

2.1.5. The new energy industry is a new and weak industry, requiring special government support policies. The new energy industry is still a nascent industry.

2.1.6. The new energy industry has a natural monopoly and has a high entry threshold. The natural monopoly of industry refers to the obvious economies of scale and high precipitation costs. The new energy industry has economies of scale, and production costs will gradually decrease with increasing scale.

3. The operation of new energy projects has the following characteristics.

3.2.1. High scores and high returns coexist. New energy projects rely on high technology, which has just started and is immature. The potential market of new technologies is uncertain and the risk of failure is high. Although the risks of technology, management, market and policy are very high, the project returns after success are very high, so they still attract a lot of capital investment.

3.2.2. Highly specialized. There are no guarantees or mortgages for new energy projects. And many of the founders are technical experts, often lacking management experience. This requires risk investors to actively participate in the management of investment companies and use their experience to help project companies grow and venture capital must be very knowledgeable about the technology of new energy projects. These requirements are highly professional for venture capital enterprise
project managers. The project selection requires highly specialized, well-organized, arrangement and selection to lock investment risk as far as possible.

3.2.3. **The new energy venture capital is mainly invested in the commercial growth stage of enterprise projects.** The life cycle of new energy projects includes seed period, introduction period, growth stage and maturity stage. Energy projects related to a fundamental state of the economy, in the first two stages is more of a government or a large enterprise group, and more should go into the new energy project risk investment commercial growth stage.

3. **Investment strategy for new energy projects.**

For different investors, because of their internal environment, the competition, risk tolerance, and the advantages and disadvantages in different expectations of earnings, etc., in the face of the same or similar external investment opportunities, the strategy may be there is a big difference. The investment strategy should guide investors to choose the investment portfolio in real time according to different earnings expectations and different risk tolerance. According to the principle of increasing the profit and reducing the risk, the investment characteristics of the new energy project should be analyzed in order to obtain higher yield and lower risk. Different investment subjects should adopt different investment strategies.

3.1. **Large integrated energy investment group.**

This company is large in size and can invest in assets and financing capacity. The company has a large number of corporate levels, and the agency relationship is obvious, with strong anti-risk ability, low investment income expectation, and the investment region is even developed overseas.

We should invest in low-risk and low-yielding projects, such as wind power and solar energy. Select biomass direct combustion to reduce the project's own risk, as the company's daily investment. The strategy focuses on high-yielding, low-risk nuclear fission, river hydropower and waste-power projects, as the company's core new energy investment. To strengthen the operation and management of high risk biomass direct combustion project as a key task in daily project management. To avoid project investment in biomass liquefaction and biomass gasification, Pay attention to the industry policy and the change of technology in this kind of project, and judge the change of the external environment in this form. Appropriate investment is currently in the new energy form of the development stage of the industry life cycle, so as to make early preparations for the early detection of high yield and low risk new energy forms.

3.2. **Local new energy Group Corporation.**

The company has a large scale and can invest in asset financing ability. The company has a large number of corporate level, and the agency relationship is obvious, with strong anti-risk ability, low investment income expectation, and one or several provincial-level regions in the investment region.

In combination with the advantages of regional project acquisition ability, it is the core asset of the company to invest in high-yielding and low-risk garbage power generation, etc. Reasonable portfolio of wind power, solar and biomass direct combustion projects, biomass solidification projects, to expand the company's new energy scale and revenue. To strengthen the operation and management of biomass direct combustion project and biomass solidification project, as the key work of daily project management. To avoid the project investment of biomass liquefaction and biomass gasification, and to focus on the investment status of quality project types in this region.

3.3. **Professional new energy Investment Company.**

The company has a large scale and strong investment assets and financing capacity. Company level is more, the principal-agent relationship is obvious, strong ability to resist risk, investment return expectations high, and investment region for the national development abroad, even a single investment in new energy application.
Actively looking for high-quality projects of this kind of new energy to invest quickly and expand the scale of people. To promote professional talents, deepen project operation and management, reduce risks and improve returns, we will actively explore the whole industry chain, promote technological progress and improve industrial efficiency. Promote the development of industry policies, improve the investment returns of the whole industry, and reduce the risk of investment in the whole industry. Develop alternative new forms of energy that are similar or similar to higher forms.

3.4. Joint venture new energy Investment Company.
The company has a small scale and limited ability to invest in assets and financing. The company has less hierarchy, the principal-agent relationship is more obvious, the anti-risk ability is weaker, and the expectation of investment income is higher.

We should give full play to the characteristics of foreign capital and invest in low-risk new energy forms. We should promote the advantages of international vision, introduce new forms of foreign countries into China, and expand pilot programs to achieve high returns.

3.5. Project new energy Investment Company.
The company has a small scale and limited ability to invest in assets and financing. The company has less hierarchy, less principal-agent relationship, less risk tolerance, higher investment income expectation, and less investment projects.

Such companies are usually small in size and usually have only one or two projects. They can choose a new form of energy with high risk and high yield. By strengthening management, they can reduce risks and gain more benefits.

3.6. Institutional new energy Investment Corporation.
Its institutional investors in the stock market. Unlike previous investments in new energy projects, institutional new energy investments are usually not directly involved in direct investment and management of new energy projects. It is mainly based on financial investment, compared with individual investors, and has strong financial resources, which has certain influence on the stock price.

Upstream equipment companies that invest in new energy projects need to focus on the industry policies of this new energy and project investment fever. The company's stock price changes a lot, the investment risk is higher, also has the possibility of higher yield. To invest in new energy operation enterprises need to pay attention to the cost of industry-wide operation and the change of product sales price. The stock price changes relatively stable, the investment risk is not big, and the yield is also lower. The benefits of the new energy sector and the sensitivity of macroeconomic policies and data seem to be higher than in most other industries.

3.7. Venture capital new energy Investment Company.
It is a professional venture capital firm in the new energy capital market. It has a better understanding of new energy projects in investment, less risk tolerance and high expectation of return on investment, usually in the form of holding a certain proportion of shares. It has some influence on project investment and investment management, between financial investors and project investors.

The early stage of the project of high-quality new energy projects involves investment, capital investment and loan guarantee, etc. After the project is put into operation, it can be sold according to the income situation, and it can obtain high investment questions and also take high risks.

3.8. Bank lending.
Banks are important stakeholders in new energy investments to participate in new energy investments by lending to new energy projects. The new energy investment approval manager in the bank is responsible for approving and approving the loan application in the process of lending, providing advice and management reference for the investment of new energy projects.
In addition to the new energy project itself mortgage, usually also requires joint and several liability guarantors.

4. Conclusion
New energy is a potential investment. In actual investment work, it is necessary to fully contact the project characteristics, and apply the scientific investment strategy to achieve greater benefits based on the practical basis.

References
[1] G Chen, LI Mingjie, XU Tao, M Liu, Study on Technical Bottleneck of New Energy Development. Proceedings of the Csee. 37 (2017) 20-26.
[2] Q Wang, Y Hang, L Sun, Z Zhao, Two-stage innovation efficiency of new energy enterprises in China: A non-radial DEA approach. Technological Forecasting & Social Change. 112 (2016) 254-261.
[3] A Giwa, A Alabi, A Yusuf, T Olukan, A comprehensive review on biomass and solar energy for sustainable energy generation in Nigeria. Renewable & Sustainable Energy Reviews. 69 (2017) 620-641.
[4] F Khalid, I Dincer, MA Rosen, Energy and exergy analyses of a solar-biomass integrated cycle for multigeneration. Solar Energy. 112(2015) 290-299.
[5] B Obama, The irreversible momentum of clean energy. Science. 355 (2017) 62-84.
[6] I Dincer, C Acar, A review on clean energy solutions for better sustainability. International Journal of Energy Research. 39 (2015) :585-606.
[7] H Nautiyal, SK Singal, Varun, A Sharma, Small hydropower for sustainable energy development in India. Renewable & Sustainable Energy Reviews. 15 (2011) 2021-2027.
[8] S Cho, J Kim, An optimization-based planning of investment strategies for a renewable energy supply system from biomass utilization. Korean Journal of Chemical Engineering. 33 (2016) 2808-2819.