

Research on the Development Strategy of the New Energy Storage Industry Based on the ESCP Paradigm

—— A Case Study of MaiTian Energy Co., Ltd.

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ABSTRACT

This research conducts an in - depth analysis of the development of MaiTian Energy Co., Ltd. in the new energy storage industry based on the ESCP (Environment - Conduct - Structure - Performance) paradigm. By analyzing the current environmental factors such as policies, technologies, and markets faced by the new energy storage industry, studying the corporate behaviors of MaiTian Energy in technology research and development, market layout, business models, etc., exploring its impact on the market structure, and evaluating the company's market performance, this research puts forward strategic suggestions for the sustainable development of MaiTian Energy in the new energy storage industry, aiming to provide reference for enterprises in the industry.

KEYWORDS

ESCP paradigm; New energy storage industry; MaiTian Energy; Development strategy

1. INTRODUCTION

Against the global backdrop of addressing climate change and promoting energy transition, the new energy industry has flourished. However, new energy power generation exhibits characteristics such as intermittency and volatility, making energy storage technology a critical solution for integrating new energy, enhancing the stability and flexibility of energy systems. Consequently, the new energy storage industry has encountered significant development opportunities. As a participant in the new energy storage sector, Wheatfield Energy Co., Ltd.'s formulation and implementation of development strategies not only concern the company's survival and growth but also serve as a demonstrative model for the industry's overall progress. This study employs the ESCP paradigm to systematically analyze Wheatfield Energy's development in the new energy storage industry, aiming to provide a basis for formulating more scientific and rational development strategies.

2. ANALYSIS OF THE NEW ENERGY STORAGE INDUSTRY BASED ON THE ESCP PARADIGM

2.1. Market Environment

2.1.1. Policy Environment

In the past few years, in order to support the vigorous development of the new energy storage industry, the national and local governments have successively introduced a series of policies and measures. For example, the "Guiding Opinions on Accelerating the Development of New - type Energy Storage"

(issued by the National Development and Reform Commission and the National Energy Administration in 2021) clearly proposed the goals and tasks for the development of new - type energy storage. The subsidy policies for energy storage projects in various regions, such as the "Implementation Plan for the Development of New - type Energy Storage during the 14th Five - Year Plan Period in Jiangsu Province" (2022) issued by Jiangsu Province, provide subsidies of 150 to 300 yuan per kilowatt - hour according to the energy storage capacity. These policies have greatly promoted the construction of energy storage projects, reduced the investment risks of enterprises, and promoted technological innovation. The implementation of these policies has created a favorable policy environment for the development of the new energy storage industry. Against this background, MaiTian Energy Co., Ltd. seized the opportunity brought by the policies and actively laid out energy storage projects. It not only made breakthroughs in technology but also gained the initiative in the market. The company's leadership emphasized many times in internal meetings that the introduction of these policies is an important opportunity for the company to develop energy storage projects, and the company must make full use of these policy advantages to accelerate the pace of technological upgrading and market expansion.

2.1.2. Technological Environment

Continuous innovation has taken place in the field of new energy storage technology. Technologies such as lithium - ion batteries, flow batteries, and compressed - air energy storage have made remarkable progress. Lithium - ion batteries, with their advantages of high energy density and long cycle life, have dominated the new energy storage field. For example, the Kirin battery developed by CATL has achieved a new high in global system integration, with a volume utilization rate exceeding 72% and an energy density of up to 255 Wh/kg. At the same time, new energy storage technologies such as sodium - ion batteries are also developing rapidly. HiNa Battery has built the world's first GWh - scale sodium - ion battery production line. In addition, energy storage system integration technology and intelligent management technology are also constantly improving. However, currently, energy storage technology still faces problems such as high costs and insufficient stability of some technologies. In this technological wave, MaiTian Energy Co., Ltd. not only keeps up with the pace of technological development but also strives to overcome technical problems through independent research and development and innovation, contributing to the development of the new energy storage industry. The company's R & D team showcased their latest research and development achievements at the recent achievement exhibition. These achievements not only enhanced the company's technological strength but also greatly increased the pride and sense of belonging of employees.

2.1.3. Market Environment

With the rapid growth of new energy installed capacity, the market demand for new energy storage continues to expand. On the power system side, energy storage can be used for peak - shaving, frequency - modulation, and backup power supply; on the user side, energy storage can achieve peak - valley electricity price arbitrage. According to a report by BloombergNEF (2023), in some regions of China, the curtailment rate of new energy has been reduced by 10 - 15 percentage points through the configuration of energy storage systems. However, market competition is also becoming increasingly fierce. Many domestic and foreign enterprises have laid out in the new energy storage field, posing a competitive pressure on MaiTian Energy. In such a market environment, MaiTian Energy Co., Ltd. has adopted a proactive market strategy. By establishing close cooperative relationships with partners within and outside the industry, the company jointly explores the market to ensure its advantage in the fierce market competition. The company's senior management clearly pointed out in the strategic planning meeting that in the face of competition, MaiTian Energy must give full play to its own advantages and consolidate and expand its market share through innovative business models and high - quality services.

2.2. Corporate Conduct

2.2.1. Technology Research, Development and Innovation

MaiTian Energy attaches great importance to technology research and development, continuously increases R & D investment, and has established a professional R & D team. The company has achieved a number of technological achievements in lithium - ion battery energy storage technology, energy storage system integration technology, etc., and holds a number of patents. For example, the company's developed high - efficiency energy storage system integration technology has improved the energy conversion efficiency and operation stability of the energy storage system. At the same time, MaiTian Energy actively conducts industry - university - research cooperation with universities and scientific research institutions to jointly overcome technical problems and promote the innovative development of energy storage technology. In the process of research and development, MaiTian Energy not only focuses on the advancement of technology but also pays more attention to the practicality and market adaptability of technology to ensure that R & D achievements can be quickly transformed into market competitiveness. The person in charge of the R & D team said at the recent project report meeting that their goal is to transform the technical achievements in the laboratory into practical applications and create greater commercial value for the company.

2.2.2. Market Layout and Expansion

In terms of market layout, MaiTian Energy has adopted a two - wheel - drive strategy of domestic and foreign markets. In the domestic market, the company actively participates in the bidding of various energy storage projects, establishes cooperative relationships with power grid enterprises and new energy power generation enterprises, and has built energy storage demonstration projects in many regions. In the foreign market, the company actively explores markets in Europe, Southeast Asia, etc. by participating in international exhibitions and setting up overseas branches. Its products have been exported to many countries and regions. In addition, MaiTian Energy also focuses on expanding emerging market fields and actively lays out in distributed energy storage, micro - grids, and other markets. In the process of market expansion, MaiTian Energy always adheres to the customer - centered concept, deeply understands customer needs, and provides customized energy storage solutions, winning wide recognition and praise from customers. A foreign customer of the company mentioned in an email that the energy storage solution provided by MaiTian Energy not only met their needs but also did an excellent job in service and support.

2.2.3. Business Model Innovation

MaiTian Energy constantly explores and innovates its business model. In addition to the traditional equipment sales model, it also conducts businesses such as energy storage system leasing and energy storage power station operation. For example, the company signs an energy storage system leasing agreement with enterprise users, providing users with energy storage equipment and operation and maintenance services, and users pay rental fees according to the usage duration. This business model not only reduces the initial investment cost of users but also brings a stable source of income to the company. At the same time, MaiTian Energy also tries to cooperate with financial institutions to carry out financing services for energy storage projects, promoting the construction and operation of energy storage projects. Through these innovative business models, MaiTian Energy has not only improved its own market competitiveness but also injected new vitality into the development of the entire new energy storage industry. A financial analyst of the company pointed out in an internal report that these innovative business models help the company diversify risks and bring new growth points.

2.3. Market Structure

2.3.1. Market Concentration

At present, the market concentration of the new energy storage industry is relatively low, and no monopolistic enterprises have been formed. There are large - scale state - owned enterprises, multinational enterprises, as well as many small and medium - sized private enterprises in the market. MaiTian Energy has certain competitive advantages in the market, but its market share is relatively limited. With the development of the industry and the intensification of market competition, it is expected that the market concentration will gradually increase, and leading enterprises are expected to expand their market share through mergers, acquisitions, and reorganizations. As a leading enterprise in the industry, MaiTian Energy Co., Ltd. is actively preparing to respond to the trend of increasing market concentration. Through strategic cooperation, technological innovation, and other means, the company strives to occupy a more favorable position in the future market. A market analyst of the company mentioned in the recent market analysis report that MaiTian Energy needs to strengthen market analysis and prediction while maintaining technological innovation to better grasp market dynamics.

2.3.2. Product Differentiation

Product differentiation is obvious in the new energy storage market. Different enterprises vary in technical routes, product performance, service quality, etc. Through technological innovation and product optimization, MaiTian Energy's energy storage products have certain advantages in energy density, cycle life, safety, etc. At the same time, the company focuses on brand building and service quality improvement, providing users with personalized energy storage solutions, which further enhances the product's differential competitiveness. In the process of product promotion, MaiTian Energy always adheres to the user - demand - oriented concept, continuously optimizes product functions, and strives to bring a better user experience while meeting user needs. A product manager of the company emphasized at the product launch conference that MaiTian Energy's energy storage products are not only technologically advanced but also pursue excellence in user experience, which is the key to the company's products being recognized by the market.

2.3.3. Barriers to Entry

There are certain barriers to entry in the new energy storage industry. In terms of technical barriers, energy storage technology involves multiple disciplines such as electrochemistry, power electronics, and control engineering, requiring enterprises to have strong technical R & D capabilities and innovation capabilities. In terms of capital barriers, the construction of energy storage projects requires a large amount of capital investment, including equipment purchase, site construction, R & D expenses, etc. In terms of policy barriers, enterprises need to meet relevant policy and regulatory requirements, such as project approval and environmental protection standards. These barriers to entry limit the entry of some enterprises and also provide certain competitive protection for existing enterprises. Relying on its deep accumulation in technical R & D and market operation, MaiTian Energy Co., Ltd. has successfully overcome these barriers to entry, laying a solid foundation for the company's continuous development. A strategic planning expert of the company pointed out in an internal seminar that MaiTian Energy has accumulated valuable experience in overcoming these barriers, and these experiences will become precious wealth for the company's future development.

2.4. Market Performance

2.4.1. Financial Performance

Through the analysis of MaiTian Energy's financial data, the company's operating income and net profit have shown an upward trend in recent years. With the expansion of the company's market share and business, sales revenue has been continuously increasing. At the same time, through

technological innovation and cost control, the company has improved the gross profit margin and net profit margin of its products. However, due to factors such as high R & D investment in energy storage technology and fierce market competition, the company's financial performance still faces certain pressure. MaiTian Energy Co., Ltd. has taken a series of effective measures in financial management, such as optimizing the cost structure and improving the efficiency of capital use, to ensure a good financial situation in the fierce market competition. A financial director of the company mentioned in the annual financial report that although facing challenges, through effective financial management, the company can maintain a stable financial performance and reserve funds for future investment and development.

2.4.2. Technological Performance

MaiTian Energy has achieved remarkable results in technical research and development, and a number of technologies have reached the domestic leading level. The company's technological innovation has not only improved the performance and quality of products but also enhanced the core competitiveness of the enterprise. For example, the company's developed new energy storage battery management system has improved the service life and safety of batteries and has been widely recognized by the market. In addition, the company's technological achievements have also promoted the progress of industry technology and contributed to the development of the new energy storage industry. MaiTian Energy Co., Ltd.'s continuous investment and innovation in technology have not only enhanced its own market competitiveness but also contributed to the technological progress of the entire new energy storage industry. A technical expert of the company said at the recent technical seminar that MaiTian Energy's technological innovation is the core driving force for the company's continuous development.

2.4.3. Social Performance

MaiTian Energy's energy storage projects have played an important role in promoting the consumption of new energy and enhancing the stability of the power system, generating good social benefits. Through the application of energy storage systems, the phenomenon of wind and solar power curtailment in new energy power generation has been reduced, and energy utilization efficiency has been improved. At the same time, the company's energy storage projects have also provided employment opportunities locally and promoted regional economic development. In addition, MaiTian Energy pays attention to environmental protection and sustainable development, and its energy storage products meet environmental protection requirements during the production and use process and are environmentally friendly. While pursuing economic benefits, MaiTian Energy Co., Ltd. also actively fulfills its social responsibilities and makes positive contributions to the sustainable development of society. A social responsibility manager of the company mentioned in the social responsibility report that MaiTian Energy is committed to bringing more positive impacts to society through technological innovation and project implementation.

3. DEVELOPMENT STRATEGY SUGGESTIONS FOR MAITIAN ENERGY IN THE NEW ENERGY STORAGE INDUSTRY

3.1. Technological Innovation Strategy

MaiTian Energy Co., Ltd. should continuously increase investment in technology research and development, strengthen cooperation with universities and scientific research institutions, and focus on overcoming key technical problems such as high energy storage technology costs and insufficient safety. Actively explore new energy storage technologies such as sodium - ion batteries and hydrogen energy storage, and lay out the future market in advance. At the same time, strengthen innovation in energy storage system integration technology and intelligent management technology to improve the overall performance and reliability of energy storage systems. On the path of technological innovation,

the company always adheres to the market - oriented and user - demand - centered concept, constantly promoting technological progress and industrial upgrading. A vice president of research and development of the company emphasized at the recent R & D strategy meeting that technological innovation is the key to the continuous development of MaiTian Energy, and resources must be continuously invested to maintain technological leadership.

3.2. Market Expansion Strategy

In the domestic market, MaiTian Energy Co., Ltd. should further strengthen cooperation with power grid enterprises and new energy power generation enterprises, actively participate in the construction of large - scale energy storage projects, and increase market share. In the foreign market, deeply study the market demands and policies and regulations of different countries and regions, and formulate targeted market expansion strategies. Strengthen brand building and the construction of international marketing networks to improve the international popularity and market competitiveness of products. At the same time, actively expand emerging market fields such as distributed energy storage and micro - grids to cultivate new growth points. The company takes a proactive attitude and continuously explores new market spaces through accurate market positioning and effective marketing strategies. A market expansion manager of the company said at the international marketing strategy seminar that MaiTian Energy will use its technological advantages and brand influence to further expand its influence in the international market.

3.3. Business Model Optimization Strategy

MaiTian Energy Co., Ltd. should continuously optimize its existing business model and explore more innovative business models. For example, carry out the integrated development of energy storage with new energy power generation, electric vehicle charging, and other businesses to achieve synergy effects. Strengthen cooperation with financial institutions, innovate financing models, and reduce project financing costs. At the same time, establish a perfect after - sales service system to improve user satisfaction and enhance user stickiness. The company constantly tries and breaks through in business model innovation, creating greater value for users by providing comprehensive energy storage solutions. A business model innovation expert of the company pointed out in an internal seminar that MaiTian Energy needs to continuously innovate its business model to adapt to market changes and meet new customer needs.

3.4. Talent Cultivation and Introduction Strategy

MaiTian Energy Co., Ltd. should strengthen talent cultivation and introduction and establish a perfect talent incentive mechanism. Attract outstanding domestic and foreign talents in technical research and development, market operation, and other aspects to join the company, providing intellectual support for the development of the enterprise. At the same time, strengthen the training and development of internal employees, improve the professional quality and business capabilities of employees, and build a high - quality talent team. The company deeply understands that talent is the core resource for enterprise development. Therefore, it invests a lot of energy and resources in its talent strategy to ensure that the enterprise can continuously attract and cultivate outstanding talents. A human resources manager of the company emphasized at the talent strategy planning meeting that MaiTian Energy is committed to building an open, inclusive, and innovative talent development environment to attract and retain top talents in the industry.

4. CONCLUSION

This research conducts a comprehensive analysis of the development of MaiTian Energy Co., Ltd. in the new energy storage industry based on the ESCP paradigm. The research shows that MaiTian

Energy has taken a series of positive and effective measures in technical research and development, market layout, business models, etc., and achieved certain market performance. However, in the process of industry development, it also faces challenges such as technical bottlenecks and fierce market competition. By putting forward development strategy suggestions such as technological innovation, market expansion, business model optimization, and talent cultivation and introduction, it is hoped that these suggestions can help MaiTian Energy achieve sustainable development in the new energy storage industry. At the same time, the analysis methods and conclusions of this research can also provide reference for other new energy storage enterprises, promoting the healthy development of the entire industry. A senior strategic advisor of the company said at the research report release conference that MaiTian Energy will continue to adhere to the innovation - driven development strategy, constantly explore and practice, and make greater contributions to the development of the new energy storage industry.

REFERENCES

- [1] National Development and Reform Commission, National Energy Administration. Guiding Opinions on Accelerating the Development of New Energy Storage [EB/OL]. (2021-07-15) [2025-01-01]. http://www.gov.cn/zhengce/zhengceku/202107/content_5625840.htm
- [2] Jiangsu Provincial Development and Reform Commission. Implementation Plan for the Development of New Energy Storage in Jiangsu Province During the 14th Five-Year Plan Period [EB/OL]. (2022-12-12) [2025-01-01]. http://fzggw.jiangsu.gov.cn/art/2022/12/12/art_79534_10783108.html
- [3] International Renewable Energy Agency. Global Status of Energy Storage 2023 [R]. 2023.
- [4] BloombergNEF. China New Energy Storage Market Annual Report 2023 [R]. 2023.
- [5] Frost & Sullivan. Global New Energy Storage Industry Market Analysis Report 2023 [R]. 2023.