

Study on the Mechanism of Action for Influence Factors on the Growth of Chinese New Energy Enterprises*

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Abstract—The development of new energy industry will be a long-term process, during which the growth of new energy enterprises will play a crucial role in the future development of new energy industry. From the perspective of economics and management, the author discusses the growth drivers of new energy enterprises, analyzes the influence factors on their growth, and explains the influence factors on their growth and the mechanism of action.

Keywords—new energy enterprises; growth drivers; influence factors; action of mechanism

I. INTRODUCTION

When there are many deficiencies in the application of traditional energy, people have turned their attention to the development and application of new energy. The development of new energy industry is not only conducive to getting rid of the shackles of limited resources of traditional energy, but also can effectively reduce environmental pollution, enhance people's welfare and ensure the sustainable development of society. However, it will be a long process for new energy to replace traditional energy. How new energy enterprises achieve sustainable profitability and what factors affect the growth of new energy enterprises are realistic problems to be solved by new energy enterprises today.

II. ANALYSIS ON THE GROWTH DRIVERS OF NEW ENERGY ENTERPRISES

Domestic and foreign scholars have relatively few studies on the influence factors on the growth of new energy enterprises, mainly focusing on the relevant issues of science and technology enterprises, manufacturing enterprises, innovative enterprises and small and micro enterprises. However, As new energy enterprises continue to develop, their proportion in the national economy is also growing. Influence factors on the growth of new energy enterprises in China have gradually been widely concerned by the academic community. This section mainly analyzes the growth drivers of new energy enterprises, and draws a conclusion that compared with

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ordinary enterprises, the cycle stages of new energy enterprises have more characteristics, and their growth drivers can be roughly discussed from internal and external aspects.

A. Internal Drivers of the Growth of New Energy Enterprises

New energy enterprises are defined as a kind of resource-intensive and technology-intensive enterprise, and their growth depends more on resource expansion. According to the economic theory by the scholar Ricardo, the part of capital compensation for resource owners that exceeds the maximum economic profits that resources can gain from other options belongs to excess earnings. Economic rent includes resource scarcity rent, market monopoly rent and innovative rent. In simple terms, the existence and development of new energy enterprises can be regarded in disguise as the process of obtaining economic rent and collecting excess earnings in the market environment. As energy developers and owners, new energy enterprises have the right to obtain the economic benefits brought by market monopoly based on the ownership of scarce resources and technological innovation ability as a springboard, which is also the potential driving force for investment and development of new energy enterprises.

Resource scarcity rent is the basic fund for the development of enterprises as well as the original motive force for the development and utilization of enterprise resources, but such rent cannot fully support the sustainable development of enterprises. Monopoly rents are obtained after new energy enterprises scale up and form a market comparative advantage. Such rent can further expand enterprises' advantages and form a benign promotion for the growth of enterprises. However, monopoly rent cannot be occupied for a long period of time, and it requires higher stability of technology and talents of enterprises. The biggest market disadvantage of new energy enterprises usually lies in scale and stability. Therefore, although monopoly rent can affect the sustainable development of enterprises, it cannot be obtained stably by new energy enterprises. Another economic rent is the innovative market rent, and such rent can be obtained from the innovative behavior that enterprises dig out their own potentials and cater to the market demand and change, and positively make an action. Such innovation behavior requires risk assessment and resource investment by enterprises, which

may fail, be imitated by peers or fail to stay ahead in technology for a long time. However, in spite of its strong instability, the innovative rent is an important internal driver for the growth of new energy enterprises.

B. External Drivers of the Growth of New Energy Enterprises

Most researchers hold that environments with dynamic and uncertain characteristics that are not internal to an enterprise, have an impact on the growth of the enterprise and can interact with the enterprise are called external environments. The uncertainty in the external environment is a common feature of the economic system as well as a prerequisite for enterprises' movement transformation and innovation activities. Different new energy enterprises have different understandings of the uncertainty of economic system. This cognitive difference determines the development ceiling of new energy enterprises.

The uncertainty of external environment comes from objective and subjective reasons of enterprises. The strength of uncertainty is closely related to the degree of information symmetry, the limited degree of rationality and the thought of opportunism. The information asymmetry between new energy enterprises and the environment may make it difficult for enterprises to correctly judge the market changes, and enterprises may make corresponding wrong changes due to the wrong judgment. Enterprises with more symmetrical information can easily win market competitive advantages. However, enterprises themselves can't really know the symmetric information capabilities of their competitors, which leads to the uncertainty of market transactions. Limited rationality refers to that an enterprise makes relevant behaviors from a rational perspective according to its own philosophy and tries to promote the growth of the enterprise through these behaviors. Thought of opportunism means that an enterprise considers strategic interests, and takes the initiative to make changes in the face of opportunities and challenges in order to obtain more economic benefits, which may bring profits or increase the growth risk of the enterprise. It can be seen that new energy enterprises can gain the momentum needed for growth under the changing external environment. In the meantime, environmental pressure brings difficulties to the survival of enterprises, and the process of actively seeking for changes may trigger more risks. These uncertainties make it necessary for new energy enterprises to increase the market value of products or services through technology introduction or innovation, and improve their ability to avoid risks and boost their market competitiveness by perfecting their internal management system.

III. INFLUENCE FACTORS ON THE GROWTH OF NEW ENERGY ENTERPRISES AND THEIR INTERACTIONS

This section mainly analyzes the influence factors on the growth of new energy enterprises and individual factors and their interactions, and then summarizes the mechanism of action for the influence factors on the growth of new energy enterprises.

A. Influence Factors on the Growth of New Energy Enterprises

Based on the internal and external factors in the growth of new energy enterprises, this paper believes that the growth of new energy enterprises has more characteristics than that of other enterprises. They are greatly influenced by national and local policies in their growth, and make higher demand on technological innovation. Besides, entrepreneurs' ability to judge and avoid risks, sufficient financial support and enterprise resources are important factors for the sustainable growth of new energy enterprises.

1) Industrial policies: The support of government policies is the prerequisite for the survival and development of new energy industry. Based on the market and cost advantages of traditional energy, many investors who invest in new energy construction will be unable to bear the industry risks if they do not get the preferential policies. Government's industrial support can help new energy enterprises go through the initial development stage of the industry, so that new energy enterprises can better lower operating costs and gain reasonable profits. At present, the industrial support policies mainly consist of central government's policies and local governments' policies, including financial policies, land policies, patent incentive policies, preferential tax policies and financing policies. The implementation of these policies can propel the growth and development of new energy enterprises.

2) Technological innovation: The improvement of innovation ability of new energy enterprises can encourage enterprises to create or digest advanced technologies, processes or patents, and form unique resources that are not easy to be imitated and copied, providing an advantage of market competitiveness. New energy enterprises make innovation on behaviors in the development process to avoid risks, relieve market pressure and gain growth space. Furthermore, the extension of the life cycle of new energy enterprises actually represents the continuous breakthrough of innovation behavior of enterprises, and also indicates that enterprises obtain economic benefits through innovation. On the contrary, the lack of technological innovation means the stagnation of enterprises. Only continuous innovation activities can help enterprises better adapt to the changing external environment.

3) Investment scale: The reason why the development of new energy enterprises is affected by investment scale is that new energy enterprises are highly dependent on capital. Beyond that, the quantity and use efficiency of capital are extremely important to the expansion of enterprise scale. The investment scale expansion of new energy enterprises mainly includes direct expansion and indirect expansion. Investment scale directly advances the growth of new energy enterprises, which means that under the premise that science and technology of the current enterprises is unchanged, enterprises can expand the scale and total production through increasing investment, so as to increase the number of products or services sold to the market through the increase of production

factors. Such direct investment can include land resources, capital resources, management level and marketing development, among which capital increase is the main driving force for the expansion of new energy enterprises. The indirect promotion of investment scale means that enterprises can improve their scientific and technological capabilities and take the initiative to conduct technological innovation activities by means of internal excavation and external introduction when they obtain capital investment, so as to boost their market core competitiveness through technological progress.

4) *Enterprise resources*: New energy enterprises, like other enterprises, are life-like organisms with a life cycle. They consist of enterprise resources internally and obtain the necessary nutrients for growth through the interaction and exchange between system and the external environment. Enterprise resources mainly include three aspects, namely, manpower, material resources and organization. New energy enterprises can propel their own steady development through the utilization and construction of existing human resources, equipment resources and organizational resources. For example, scientific and technological talents can help new energy enterprises better introduce, digest and innovate technical know-how, and can apply enterprises' science and technology into products or services. Moreover, talent resource structure, and scale and stability of new energy enterprises determine the top limit of the growth of enterprises. It can be seen that new energy enterprises lacking in enterprise resources will gradually decline due to the backward technology and development ability.

5) *Entrepreneur ability*: In the process of survival and development of new energy enterprises, entrepreneurs' ability is one of the important factors influencing the growth of enterprises. Entrepreneurs control the growth direction of enterprises through strategic planning, arrangement and implementation. Most of the decision-making power of new energy enterprises is in the hands of members of the board of directors and entrepreneurs themselves. The responsibilities of entrepreneurs and the board of directors intersect with each other, while the appointment and power of the board members are also influenced by entrepreneurs. It can be seen that the growth of new energy enterprises is closely related to the personal ability and quality of entrepreneurs. The ability of entrepreneurs is an important factor influencing the survival and development of new energy enterprises. The new energy market environment changes greatly, and market uncertainty and information asymmetry are very common, which requires entrepreneurs to identify opportunities in the market through good market judgment, and conduct all-round control and management of the development of enterprises. The ever-changing new energy market environment and the widespread market uncertainty and information asymmetry require entrepreneurs to identify the opportunities in the market through good market judgment, so as to comprehensively control and manage the development of enterprises.

B. The Mechanism of Action for the Influence Factors on the Growth of New Energy Enterprises

Based on the above research and practical experience on the influence factors on growth of new energy enterprises, it can draw a conclusion that its growth process is in essence a stage where entrepreneurs continuously apply relevant policies and corporate resources to pursue development opportunities. In this process, different new energy enterprises have different growth differences due to their different amount of resources and various abilities of employing resource opportunities. Among the important factors influencing the development of new energy enterprises, industrial policies reflect the objective external conditions for new energy enterprises to seek growth; while entrepreneurial capabilities, enterprise resources, technological innovation and investment scale reflect the subjective initiatives of new energy enterprises to seek growth. All in all, the growth process of new energy enterprises, in essence, is a process of organic integration of the company's external environment and its own capabilities, that is, the growth of new energy enterprises not only requires a strong development motivation — entrepreneur ability, but also the foundation that supports the growth of the company — enterprise resources. At the same time, it also needs some development capabilities — technical innovation and investment scale, and the good guarantee of the external environment — industrial policies. It is just the combined effect and interaction of multiple factors that promotes the continuous growth and development of new energy enterprises.

IV. CONCLUSION

Aiming at the discussion on the influence factors of the growth on new energy enterprises, this article combines the existing research achievements, studies the motivations and influence factors on its growth from the perspective of combining economics and management, and analyzes the mechanism of action of the influence factors. This result will be benefit new energy enterprises to allocate resources to key areas, and has important practical significance for enhancing the growth of new energy enterprises and even the future sustainable development of the new energy industry.

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