

Study on China's New Energy Vehicle Industry Clusters under the Background of "Double Carbon"

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Abstract: At the 75th United Nations Conference, China first proposed the concept of "Dual Carbon". In such an environment, the new energy vehicle industry has received widespread attention from the Chinese government and the public. The new energy vehicle industry has the characteristics of a long industrial chain, high degree of technological integration, clear division of labor in industrial clusters, and a significant role in driving the industry. The development of the new energy vehicle industry cluster is also a dynamic optimization process. The development of China's new energy vehicle industry cluster is a very meaningful research direction. In the context of "dual carbon", this article will first analyze the current development status of China's new energy vehicle industry cluster, sort out the problems in the current new energy vehicle industry, and finally propose optimization measures and opinions for the development of China's new energy industry cluster.

Keywords: Carbon Peaking; Carbon Neutral; New Energy Vehicles; Industrial Cluster Theory

1. Introduction

At the general debate of the 75th session of the United Nations General Assembly, President pointed out that China will enhance its national autonomous contribution and adopt more vigorous policies and measures: striving to peak carbon dioxide emissions by 2030 and striving to achieve carbon neutrality by 2060. In recent years, the new energy vehicle industry has entered an accelerated stage of development as countries around the world have increased their R&D and capital investment in the industry. The world's old and new car-making forces have entered the new energy automobile industry, BYD and Toyota also reached a cooperation to establish a pure electric vehicle research and development company; Mercedes-Benz BMW and other traditional car giants have also joined the production of new energy automobile industry. China's new energy automobile industry after years of development, in manufacturing and R & D technology significantly improved, while the new energy automobile industry clusters are also initially formed, the emergence of a large number of the Department of new energy automobile brands. After years of development, China's new energy vehicle industry from zero to start, from small to large, and gradually gained the recognition of the majority of consumers. In general, the future of electric instead of oil is the direction and trend of the transformation and upgrading of the automobile industry, China has the advantage of latecomer is seizing the high ground of the future industrial pattern.

2. Development of China's New Energy Vehicle Industry

In the 1990s, as the country attaches importance to new energy vehicles in alleviating energy problems and solving environmental protection problems, the country gradually formulated a plan to encourage the research and development of new energy vehicles. China's "Tenth Five-Year Plan" period to carry out scientific research, planning, "Eleventh Five-Year Plan" stage of industrialization; in the "Twelfth Five-Year Plan" period, through the new energy automobile industry to vigorously promote the new energy automobile industry, so that During the "12th Five-Year Plan" period, through the vigorous promotion of the new energy automobile industry, the new energy automobile industry ushered in a golden period of high-speed development of technology and industrial chain. Overall, China's new energy vehicle sales have shown explosive growth, from the sales point of view, China's new energy vehicle sales will increase from less than 10,000 units in 2010 to 3.3 million units in 2021, based on the 2021 sales, China's new energy vehicle sales will increase from less than 10,000 units to 3.3 million units in 2021. Based on the sales volume in 2021, the Chinese market is about twice as large as the European market and five times as large as the U.S. market, making it the largest new energy vehicle market in the world. Meanwhile, the penetration rate of new energy vehicles in China's sedan market has grown rapidly from 2.4% in 2017 to 16.0% in 2021, with new energy vehicles becoming increasingly popular among main-

stream mass consumers.

3. Problems of China's New Energy Vehicle Industry Cluster

3.1 Lack of basic infrastructure

Supporting infrastructure development is essential for product development and promotion. However, in the field of new energy vehicles, most small and medium-sized cities do not have enough charging equipment for cars, and most of the charging piles are located in bus stations, while there is no special equipment for private cars, which has become a very tricky thing. Cabs may have to wait in line for hours for a charge due to their operating costs, but this is extremely inconvenient for private cars, which is another major obstacle in the development of new energy vehicles.

3.2 Battery recycling issues

If the new energy battery is not properly handled, it will cause up to 50 years of pollution to the environment. In the future, as the application of new energy vehicles continue to expand the scope of promotion, in the automotive market share in the proportion of the rising annual generation of end-of-life power battery will increase exponentially, facing the difficulty of waste battery recycling and disposal will continue to increase, but the current market lacks a professional battery recycling company.

3.3 Sustainability issues after subsidies are withdrawn

Under the impetus of a series of subsidy policies, large and small new energy automobile enterprises have emerged like bamboo shoots, and the abundant subsidies in the early stage have made some enterprises form a strong dependence psychology, and take the government's subsidies as the fundamental profit of the enterprise, which has muddied the development of the new energy automobile industry chain. According to the 2021 new energy vehicle subsidy policy, the new energy vehicle subsidy standard will be reduced by 20% on the basis of 2020. When the policy subsidy is reduced or even canceled, some new energy vehicle manufacturers will withdraw from the market, which will have a considerable impact on the whole industry chain.

4. Policy innovations for the development of new energy industry clusters

4.1 Increase government support

4.1.1 Government co-ordinated planning layout

In the development process of the industry, the government should grasp the advantages of local enterprises, while making full use of regional and enterprise aggregation to create a competitive international industrial cluster of new energy vehicles. It is necessary to make full use of the resources of industrial clusters, formulate development plans, and focus on development based on the existing production capacity and existing production facilities to ensure that the key projects are standardized and carried out in an orderly manner. At the same time, mergers and reorganization of existing vehicle enterprises, optimization of backward enterprises, reduce ineffective production capacity, in the rectification process to highlight the key layout of vehicle enterprises, to build a rational layout, competitive and efficient operation of the new energy industry pattern.

4.1.2 Giving multi-dimensional policy support

In the process of policy implementation, it is important to stay close to the dual-carbon background, develop a comprehensive evaluation system for energy conservation, emission reduction, low-carbon and environmental protection, and provide tax incentives for new energy automobile industries that meet the requirements of the system. For talent cultivation, local enterprises should be given policy incentives tilted towards the introduction of high-level talents, local new energy automobile enterprises should be encouraged to cultivate their own talents, and subsidies should be given to support enterprises that upgrade the skills and expertise of their employees, while the talent cultivation

mechanism integrating production, learning and research should be set up in institutions of higher learning and the construction of school-enterprise integration demonstration projects should be supported.

4.1.3 Diversified Financial Support Means

Establish a financial platform for the new energy automobile industry, incorporate the capital of all social parties into the platform in order to meet the financial needs of new energy automobile enterprises, including funds, trusts, and a large amount of idle funds in the society in addition to banks can be incorporated into the platform, completely solving the problem of financing difficulties of private new energy automobile enterprises. Provide personalized financial services for enterprise listing, incubation, etc., and implement incentive policies for new energy automobile enterprises to be listed on the stock exchange to provide precise capital support. State-owned new energy automobile companies, on the other hand, should strengthen their ties with relevant industries and cooperation with the private sector to promote the development of the new energy automobile industry and strive for breakthroughs in important areas.

4.2 Creating new dynamics for industrial upgrading

4.2.1 Focus on core innovation capability

Government-led experts from universities dock with new energy automobile enterprises to provide “think tank” services and enterprise diagnostic services for private enterprises in production and operation, cost control, development strategy and transformation direction. Integration of university research teams and other teams with innovation capability and patent research and development with new energy automobile enterprises, to facilitate the sharing and transformation of innovation results in various fields, to meet the innovation needs of enterprises, and to promote the scientific research results for enterprises to bring practical benefits.

4.2.2 Active integration into the international market

In the process of new energy automobile cluster development, it is necessary to actively integrate into the international market. The government should guide the company to formulate an international development strategy, improve the company’s international competitiveness, strengthen the development of the worldwide market, and actively integrate into the world’s technology; in particular, the automobile newcomers have made a win-win deal with the world’s veteran automobile manufacturers, which will also be of great help in exploring the world’s development. At the same time, a market-oriented global industrial chain should be established to promote the management system and organizational control of Chengdu New Energy Automobile Company in the international value chain.

4.2.3 Deep integration of the digital economy

Increase the support for digital technology and give full play to its positive role in promoting digital technological innovation and the application of digital equipment. To apply industrial network technology to deeper areas in advanced manufacturing fields such as equipment manufacturing and electronic information. To promote carbon neutrality with digital technology, led by the state, to establish efficient, synergistic and mutually beneficial technical and commercial cooperation as soon as possible, to promote the in-depth integration of the digital economy and the real economy, and to drive the development of upstream and downstream industries in the new energy automobile industry.

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