

Innovation Research of Xiangyang New Energy Automobile Supply Chain

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ABSTRACT. *New energy vehicles have become the development trend of the future automobile industry. After being listed in the national strategic emerging industries, China's new energy vehicle industry has entered a period of rapid development. Taking Xiangyang, a central city in the Hanjiang river basin, as the research object, this paper focuses on the current situation and development trend of the supply chain of new energy vehicles in the central city of the Hanjiang river basin, and puts forward innovations in technology and supply chain standardization, supply chain finance mode, after-sales supply chain system and supply chain green and reverse logistics system.*

KEYWORDS: *new energy; supply chain ; innovation;*

1. Introduction

Around the construction of "China's new energy vehicles", Xiangyang insist for popularization and application of new energy vehicle driving the development of new energy vehicles industry, actively in urban public transport, sanitation is increased by afforestation, rental operations, and other areas of the public service to promote new energy vehicles, increase the new energy automobile finance subsidy policy propaganda, guide private purchases are encouraged to use the new style and promote actively integrate local energy cars and other new energy automobile industry development.

2. Current situation analysis of Xiangyang new energy automobile supply chain

At present, Xiangyang is engaged in the research and development and production of new energy vehicles in more than 30 enterprises and institutions, with

more than 200 patents and practical technology, the initial formation of new energy vehicles "two vertical and three horizontal" (pure electric vehicles, hybrid vehicles, power batteries, drive system, control system) industrial form. In addition, key components and auxiliary systems, including lithium iron phosphate battery, ternary material battery part of the material research and development production test, commercial vehicles and passenger vehicles drive system research and development and manufacturing, also formed the basic industrial chain.

In 2015, Xiangyang's total vehicle output of new energy vehicles accounted for nearly 4% of the national share, and the comprehensive strength of the new energy vehicle industry ranked top ten in China (including municipalities directly under the central government, cities under separate planning, cities at the sub-provincial level and provincial capitals). In 2016, Xiangyang's new energy vehicle production accounted for more than 70 percent of the total output of Hubei province, leading the share of similar cities in the country. Xiangyang new energy automobile industry new industrialization demonstration base was awarded at the national level to show the recognition. In 2017, Xiangyang's new energy vehicles grew by 105% year on year, with a total production of 32,300 units. More than 30 research, development and manufacturing institutions of new energy vehicles have gathered in Xiangyang. Production of Xiangyang new energy vehicles increased by 2.3 times in the first half of 2018. It is expected that the total vehicle production capacity will exceed 100,000 by the end of the year.

3. Research on innovation of Xiangyang new energy automobile supply chain

3.1 The industrialization of new energy vehicles requires the standardization and innovation of technology and supply chain

Standardization and innovation of technology and supply chain are the core issues in the development of new energy vehicles. No matter domestic or foreign, from the form a complete set of technical maturity and operation, new energy vehicles industrialization and mass production is still very far away, the electric car to be popular never alone a breakthrough of the two companies to do, but need the technology and the standardization of the supply chain as a support, through the industry collaboration to implement step by step.

In the new energy automobile manufacturing industry, the scope of technology is very wide, from product design and development, mold manufacturing, injection molding, automatic production, quality control and other processes, ERP computer technology, to the application in the product life cycle management system. On the other hand, the guidance of "three vertical and three horizontal" national new energy automotive research development direction, pure electric vehicles, plug-in hybrid electric vehicle and fuel cell vehicles as the "three vertical and", powertrain system, drive motor, power battery three key technologies for development layout of "three horizontal" is also a new energy automotive technology environment.

3.2 New energy automobile supply chain finance model innovation.

We will strengthen innovation in the supply chain finance model for new energy vehicles, carry out supply chain finance business, and promote open information sharing among local credit information sharing platforms, commercial Banks, and core enterprises in the supply chain. Encourage supply chain core enterprises, government procurement agencies, financial institutions and the people's bank of China credit information center to build accounts receivable financing service platform docking, the development of online accounts receivable financing and other supply chain finance model. Carry out special action on accounts receivable financing, guide accounts receivable enterprises to assist creditor enterprises to confirm accounts receivable through accounts receivable financing service platform, broaden financing channels for enterprises, expand the scale of accounts receivable financing, and promote the benign interaction and development between finance and the real economy. Incorporate the accounts receivable financing credit policy guidance effect assessment, local corporate financial institutions with good results in the business priority to give a little further credits, discount, such as monetary policy tools support, supervise and urge financial institutions development supply chain financing business, drive the core enterprise of supply chain, upstream and downstream enterprises to carry out the accounts receivable financing business.

3.3 New energy automobile after-sales supply chain system innovation

Improving and refining the after-sales service system will be the car enterprises

need to fill up the short board. First, the establishments of after-sales supply chain system. Focus on solving the following problems, how to establish the industrial chain of all links in the after-sales service system of cooperation mode? How to build an efficient and convenient supply chain of after-sales service parts? How to cultivate and establish a professional after-sales service personnel system for the new energy automobile industry? And the then we should set out to cultivate new energy vehicle after-sales technical service and management of highly skilled professionals and form a relatively complete after-sales supply chain system. Solve the reliability and versatility problems of new energy auto parts. Second, we should establish a reasonable after-sales legal system. Through the establishment of a reasonable new energy vehicle after-sales laws and regulations system, standard car enterprises after-sales treatment, support consumers legitimate rights and interests.

3.4 Green supply chain of new energy vehicles and innovation of reverse logistics system

New energy vehicles bring serious environmental pollution challenges and battery recycling problems. China's new energy vehicles actually produce 50 percent more greenhouse gas emissions during their manufacture than cars powered by internal combustion engines, according to research by a team from Tsinghua University published in the prestigious international journal applied energy in 2017. More serious environmental pollution challenges may also come from the new energy vehicle scrap battery pollution. Therefore, green supply chain of new energy vehicles and innovation of reverse logistics system are imperative. In 2016, the national development and reform commission took the lead in formulating the technical policy for the recovery and utilization of new energy vehicle power battery. In 2017, the national standard committee issued the technical specification for the recovery and utilization and disassembly of vehicle power battery. These policies and technical standards serve as a guiding document and can serve as a reference for key enterprises operating the standard. As the capital of new energy vehicles in China, Xiangyang has the obligation and ability to focus on green supply chain of new energy vehicles and innovation of reverse logistics system. Demonstrate green supply chain management. Green product lifecycle management will be promoted, and green supply chain management will be demonstrated in the supply chain of

new energy vehicles. Promote the formation of green manufacturing supply chain system. Actively promote green circulation. In the aspect of power battery recycling, strengthen the research and development of battery recycling technology to form an industrialized supply chain. Build an online market for waste and renewable resources. Encourage the establishment of waste resources recycling and utilization platform based on supply chain, vigorously develop waste recycling logistics, and establish waste disposal logistics system.

4. Summary and outlook

New energy vehicles have become the development trend of the future automobile industry. After being listed in the national strategic emerging industries, China's new energy vehicle industry has entered a period of rapid development. As the capital of China's new energy vehicles, Xiangyang has the obligation and ability to focus on the research and practice of supply chain innovation of new energy vehicles, and hopes to help the development of China's new energy vehicle industry through the above supply chain innovation program. The prospect of new energy vehicle supply chain is still positive. Electric vehicle related enterprises with strong research and development capacity will be the main promoter of the development of new energy vehicle industry. New energy vehicle production volume growth will be imperative, and will drive the rapid expansion of the upstream industry chain.

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