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Coupling relationship between low carbon economy and core competitiveness of manufacturing industry and countermeasure analysis

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ABSTRACT

This paper puts forward some targeted countermeasures through exploring the coupling relationship between the low carbon economy and promotion of the core competitiveness of manufacturing industry. Especially, it lays stress on analyzing from the coupling relationship, the cultivation of the core competitiveness of manufacturing industry and the influencing factors (such as four factors involving resources, technology, environment and management) in the context of the low carbon economy. Meanwhile, it proposes that it is necessary to take great pains to carry forward in three levels of government, industry and enterprise, in addition to cultivating the favorable external support environment and perfecting the relevant policies in the context of the low carbon economy. It not only plays an important role in solving the global warming, enhancing the resource use efficiency and improving the ecological environment, but also is conducive to promoting the core competitiveness of manufacturing industry.

KEYWORDS

Low carbon economy; Core competitiveness of manufacturing industry; Coupling relationship.



INTRODUCTION

In order to cope with the global climate change, energy saving and emission reduction, the low carbon economy emerges as the times require, which is the only way to advocating the transformation from high carbon production method and life style to low carbon production method and life style and realizing the green development^[1]. Due to the influence of the traditional industrialization mainly depending on the resource and energy consumption with pollution and then governance, the manufacturing industry should combine its own advantages, develop the new product, new technology and new process adapting to the low carbon economic development, provide the technical support for the popularization of the low carbon economy, promote the core competitiveness of manufacturing industry constantly, and achieve the harmonious development of the resource environment and economic benefit^[2].

The core competitiveness is the ability of utilizing the specific resources (such as patent, intellectual property, technology and talents etc.) and forming the unique knowledge that can not be compiled into the classics or inexpressible knowledge, institutional knowledge, internal knowledge, and sharing or hiding of the members in the given environment. Generally the connotation of the core competitiveness of manufacturing industry mainly includes the contents of the basic resource view, dynamic organization view, process technology view and new type knowledge-based view. Then, this paper discusses mainly from the coupling relationship between the low carbon economy and the core competitiveness of manufacturing industry, cultivation of the core competitiveness of manufacturing industry and the influencing factors in the context of the low carbon economy, as well as the countermeasures of cultivating the core competitiveness of manufacturing industry.

COUPLING RELATIONSHIP BETWEEN LOW CARBON ECONOMY AND CORE COMPETITIVENESS OF MANUFACTURING INDUSTRY

Coupling relationship generally means the phenomenon that two or more systems or motion modes influence each other and even join up through all kinds of mutual effects, which is the dynamic association relationship with correlative dependence, intercoordination and mutual promotion under the benign interaction among various factors. Similarly, the phenomenon of mutual effects and influences arising out of the core competitiveness of manufacturing industry and the low carbon economy by their respective coupling elements can be defined as the coupling of low carbon economy and the core competitiveness of manufacturing industry.

Influence of core competence of manufacturing industry on low carbon economy

The core competence of manufacturing industry is mainly embodied in the aspects of resources, technology and performance. As the footstone of the core competitiveness, the resources grasped by the manufacturing industry are mainly reflected in the factors controlled or owned by the enterprise. The human resources of science and technology, expenditure resources of science and technology, total machine power of total product output value per unit, and power consumption of total product output value per unit, as the resources of the manufacturing industry, are of great significance for promoting the core competitiveness of manufacturing industry. The manufacturing industry regards the production process technology, equipment maintenance technology, financial management technology, production and operation management skills what it has as the core of the production run, and it plays an obvious role in the formation of the core competitiveness. The performance of the manufacturing industry, as the index of measuring the core competitiveness of the enterprise, directly reflects the strong and weak core competitiveness of manufacturing industry. For their relationship, the resource is beneficial to promoting the development of the low carbon economy, the technology is beneficial to reducing the output of the low carbon economy, and the performance is beneficial to enhancing the management of the low carbon economy.

Influence of low carbon economy on core competitiveness of manufacturing industry

The low carbon economy requires the low carbonization of the low carbon economic activities, reducing the influence of the low carbon development on the carbon cycle of the ecological system, and maintaining the carbon balance of the biological group circle. In order to develop the low carbon economy efficiently and boost the energy saving and emission reduction and the cyclic utilization of the resources continuously, it is necessary to combine the economic development and ecological environmental protection scientifically, reduce the adverse impact of the economic activities on the ecological environment to the greatest extent, and form the virtuous cycle^[3]. The low carbon economy relevant to the core competitiveness of manufacturing industry is mainly embodied in the low carbon output and low carbon management. For the concrete manifestation, the low carbon output is beneficial to measuring the core competitiveness of manufacturing industry, the low carbon management is beneficial to cultivating the core competitiveness of manufacturing industry, and the low carbon technology is beneficial to promoting the core competitiveness of manufacturing industry.

CULTIVATION OF CORE COMPETITIVENESS OF MANUFACTURING INDUSTRY AND INFLUENCING FACTORS IN THE CONTEXT OF LOW CARBON ECONOMY

The cultivation mechanism for the core competitiveness of manufacturing industry in the context of the low carbon economy can analyze from three aspects of the dynamic mechanism, learning mechanism, and constraint mechanism. The dynamic mechanism includes three aspects, such as cultural mechanism, technological innovation as well as transfer

mechanism, talent cultivation and introduction mechanism. The learning mechanism includes constructing the favorable learning competitive environment, establishing the learning organization, and setting up the learning platform. The constraint mechanism is the method of guaranteeing the effective operation of the dynamic mechanism and learning mechanism. However, the cultivation of these mechanisms needs fully considering the influences of the factors in the aspects of resources, management, technology and environment.

Resource factor

The resource factor of the manufacturing industry is the basic support and carrier of the core competitiveness. The status of the enterprise resources plays a decisive role in the operation of the enterprise, as well as the footstone of the competition among the enterprises. The core competitiveness of an enterprise not only depends on the holding quantity of an enterprise for the resources, but also depends on the utilization, development and recycling capacity of the enterprise for the resources. From the characteristic analysis on the enterprise core competitiveness of manufacturing industry, this paper deems that the resource factor mainly involves the talent resources, market resources, utilization of the renewable resources, information resources, and fund management capacity.

Technological factor

The innovation is an important way to promoting the core competitiveness of manufacturing industry in the context of the low carbon economy. The innovation capacity includes the technological innovation, research and development capacity, as well as proprietary technology. The technological innovation is the core of the manufacturing industry competition. The technological development is the inexhaustible motive force of the enterprise development of the manufacturing industry. The proprietary technology is the magic weapon of the manufacturing industry that the opponent can not imitate and surpass.

Environmental factor

The environmental factor of the enterprise means the sum total of all factors relevant to the enterprise production and operation. The environmental protection is the basic factor of promoting the core competitiveness of manufacturing industry, and the external environment is the objective factor of constituting the core competitiveness of manufacturing industry.

Management factor

The management ability is the key factor of the core competitiveness of manufacturing industry. It refers to the enterprise information transfer, internal system, and other aspects of contents. The management low carbonization is the guarantee of the core competitiveness of manufacturing industry. The enterprise culture is an important aspect of the core competitiveness of manufacturing industry.

COUNTERMEASURES OF CULTIVATING THE CORE COMPETITIVENESS OF MANUFACTURING INDUSTRY UNDER THE LOW CARBON ECONOMY

Cultivating the core competitiveness of manufacturing industry better under the low carbon economy should have the favorable external support environment and policy, so as to create good development conditions and space for the manufacturing enterprises, and guarantee the promotion of the core competitiveness of manufacturing industry. It is necessary to promote the core competitiveness of manufacturing industry in three levels of government, industry and enterprise.

Government aspect

User the foreign related experience for reference, perfect the laws and regulations as soon as possible, reinforce the execution, facilitate various layers to establish the laws and regulations suitable for the China's actual conditions, accelerate the entire economic activities to incorporate into the low carbon economy, and promote the development of the manufacturing industry. Construct the support platform of the fiscal taxation policy actively, adjust the fiscal subsidies nationwide, set up the special funds, provide the preferential capitals for the manufacturing industry of the low carbon production, urge the manufacturing industry to increase the input and technical transformation, supervise the manufacturing industry to carry out the low carbon production, and reduce the costs and risks of the manufacturing industry during the process of converting to the low carbon production mode from the traditional production mode. Optimize the low carbon economic development environment, create the favorable environment for the human resource development^[4], and build the supporting environment of the low carbon development (play the role of the social intermediary organization, enhance the public participation by virtue of various means, provide the policy-type financial service environment, and release the government procurement policy).

Industrial aspect

Formulate the scientific industrial development planning. All industries should research and formulate the overall industrial planning of developing the low carbon economy as soon as possible, design the macro economic objective reasonably, and conduct the strategic deployment timely. Define the industrial planning concept and purpose as well as the

key industry, and carry out the meticulous design in accordance with the imbalanced distribution of resources in various regions and the practical situations of various industries. Hold tightly that the innovation in policy is the engine for the formation of the new energy industry, select the major supporting field, strengthen the external guidance (it is achieved mainly through improving the needs of the global ecological environment, improving the needs of the economic development in our country, and the market demand), develop the low carbon technology and low carbon product through reinforcing the independent innovation capacity, and establish the scientific management system of the industry.

Enterprise aspect

Determine the key development capacity and product. The manufacturing enterprise should adjust the development capacity in accordance with the environmental change. Firstly, it is necessary to carefully divide the capacity that the enterprise possesses, and identify the matching core competence or capacity combination that can deeply develop and the capacity variation direction. Fully analyze the market demand and consumer psychology, define the key problems and to be solved and the specific path during the process of developing the new core competence in the enterprise upon analysis and research, select the critical factors of supporting the capacity from the enterprise resources, formulate the development planning and strategy of developing the capacity, put forth effort to cultivate, develop and promote, or transform the capacity into the production power through the cultivation mechanism function in the enterprise with the help of the external knowledge and technology, and produce the improving products or new products with the market competitive capacity^[5]. Meanwhile, increase the science and technology input, attach importance to the human capital input, and adjust the strategic and marketing mode of the enterprise.

In a word, cultivating the core competitiveness of manufacturing industry better under the low carbon economy should jointly carry forward in three levels of government, industry and enterprise, give full play to their synergism advantages, promote the core competitiveness of manufacturing industry continuously, and make the proper contributions to the energy saving and emission reduction in China constantly.

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