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# Research on the Selection of Industrial Organization Pattern in Western Regions under Low-carbon Economy Background

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## Abstract

An enterprise benefit model is built up in this paper on the basis of economic and technical elements as well as ecological resource elements to study the enterprise benefit issue of two industrial production and organization patterns, the cluster production and circulatory production from the double perspectives of economic benefit and ecological benefit. The results suggest that the economic benefit of traditional cluster production is notably superior to that of circulatory production and the ecological benefit of circulatory production is in turn notably superior to that of the traditional cluster production. Based on the respective strong points of the abovementioned industrial production and organization patterns, a new industrial organization pattern, i.e. circulatory industrial cluster pattern enabling the uniform optimization of economic and ecological benefits is brought forth in this paper. Under the background of low-carbon economy, this pattern is the best approach to the construction of green growth pole in western regions.

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*Keywords:* low-carbon economy; industrial organization pattern; industrial cluster; circulatory production; circulatory industrial cluster

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## 1. Introduction

Industrial organization pattern is the sum of the specific formation pattern and operation pattern of industrial system based on the production organization, market organization and management organization of industry. It includes size distribution of an enterprise, coordination mechanism of relations among enterprises as well as connection mode and intensity. Industrial organization pattern is of great significance to the running performance of industry. Reasonable industrial organization pattern can promote the effective competitions and cooperation among enterprises in industrial organization and

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improve the productivity, innovation rate and competitive power of industry, while unreasonable industrial organization pattern will affect the development of industry. Industrial production and organization patterns under low-carbon economy background have become an extremely important and crucial factor influencing the benefits of industry (including economic benefit and ecological benefit). Cluster production and circulatory production are the two industrial production and organization patterns imposing the greatest impact on the development pattern of industrial economy in today's world, but each of them has its advantages and disadvantages and they can neither achieve the optimal combination of economic and ecological benefits separately and thus cannot sufficiently meet the sound and fast as well as sounder and faster industrial development demands under low-carbon economy background. To that end, the exploration of a new industrial organization pattern excellent both in economic benefit and ecological benefit is necessary in order to realize the rapid and sustainable economic development in western regions.

## **2. Main Characteristics and Limitations of the Two Industrial Production Organization Patterns**

### *2.1. Main characteristics and limitations of cluster production organization pattern*

Cluster production organization pattern is reflected in the manner of industrial cluster. Traditional industrial cluster refers to the agglomeration of enterprises, their subsidiaries and underlings manufacturing products of the same kind as well as the advantage of forming sustainable competitions. As an efficient, stable and fast industrial organization pattern, industrial cluster has comparatively higher production efficiency, economic benefit, greater innovation capacity and competitive edge and plays a very important role in driving the rapid growth of regional economy. On today's world economic map, all regions and industries with great competitive edge and sound development momentum have something to do with industrial cluster. American economist Michael Porter regards traditional industrial cluster as a spatial organization form with potential efficiency and benefits as well as competitive edge in terms of flexibility. He holds that the agglomeration effect of traditional industrial cluster will make labor division more specialized and intensive and specialized job market and sales market will play down the dealing cost of enterprises in the cluster, promote knowledge innovation and overflow of enterprises and enhance the competitive edge of enterprises so as to improve the productivity and economic benefits of enterprises and even the cluster as a whole. <sup>[1]</sup>

Although industrial cluster has its unique economic benefit advantages, a good many of problems are discovered in its development process, of which, the most noticeable and common ones are related to resources, environment and ecology. For the time being, many traditional industrial clusters in China are established on the basis of natural resource endowment and huge consumption of resources. The consequential problems such as resource scarcity, environmental pollution and ecological deterioration increasingly loom large and eventually become the barrier standing in the way of economic development in western regions. Hence, traditional industrial cluster pattern is not enough to solve problems of resources, ecology and environment and unable to undertake the important task of sustainable and harmonious development of economy in western regions.

### *2.2. Main characteristics and limitations of circulatory production organization pattern*

Circulatory economy integrates the comprehensive utilization of resources, cleaner production, ecological design and sustainable consumption under the guidance of ecology laws and adopts ecological economy planning to plan social and economic activities and reconstruct industrial economic system to enable industrial symbiosis combination for resource sharing and by-products exchange among different enterprises to be developed, to take the wastes of the upstream as the raw materials of downstream and to

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