



Can “Ecological Signboards” Promote the High-Quality Development of Urban Industry?

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Abstract. China’s traditional industrial development model has caused a dilemma between industrial economic development and ecological environment protection. As a specific practice mode of the green development concept in the industrial field, eco industrial parks are an important way to solve the imbalance between ecological civilization and industrial civilization and improve the quality of urban industrial development. By constructing the theoretical framework of the impact of eco industrial parks on the high-quality development of urban industry, this paper puts forward suggestions: expand the pilot scope of eco industrial parks, improve their management mechanism, give full play to the green low-carbon demonstration effect, and contribute to promoting the high-quality development of urban industry and helping to achieve the “double carbon” goal.

Keywords: Eco industrial park · High quality industrial development · Double carbon · Conduction mechanism

1 Introduction

China’s economy has shifted from a stage of rapid growth to a stage of high-quality development. As a major energy consumer and polluter, the dilemma between economic growth and environmental protection is particularly prominent in the industrial sector. High quality industrial development with the connotation of scale upgrading, efficiency improvement, green development and innovation driven is the key to solving this dilemma. Industrial parks are an important carrier of industrial development and an engine for high-quality development of urban industries. Our government has always attached great importance to the green transformation of industrial parks, and has successively issued a series of policies. The construction of national ecological industrial demonstration parks (hereinafter referred to as ecological industrial parks) is a successful practice of transforming the mode of economic development. Eco industrial park is the third generation industrial park in China after economic and technological development zone and high-tech development zone. Compared with the previous two generations, the Eco Industrial Park mainly emphasizes the green, low-carbon and circular development model, which conforms to the connotation of high-quality development. So, does

this “national brand” ecological signboard effectively promote the high-quality development of urban industry? Are the effects of eco industrial parks at different stages different? What is the conduction mechanism? Scientific evaluation of the impact of eco industrial parks on the high-quality development of urban industry and its mechanism has an important guiding role and practical significance for improving the construction and management planning of eco industrial parks, improving the level of high-quality development of urban industry, and achieving the “3060” dual carbon goal.

2 Journals Reviewed

Combing the existing literature related to eco industrial parks and high-quality industrial development can be summarized into three categories: first, the mechanism and evaluation research of eco industrial parks, including the optimal design of eco industrial parks based on circular economy [1–3]; Comparison of development models of eco industrial parks [4–6]; Analysis on the industrial symbiosis relationship of eco industrial parks [7–9]; Research on the evaluation system of eco industrial parks [10–12]; Economic and ecological environment performance evaluation of eco industrial parks [13–15]. Second, research on high-quality industrial development. Some scholars have studied the definition of high-quality industrial development, focusing on innovation, green, efficiency, structure, industrial chain optimization, etc. [16–20]. The indicators are mainly single indicators, such as green economic efficiency [13] Total factor productivity [21]; Some scholars also pay attention to the influencing factors [22, 23] and the realization path [24–27] of the industrial park’s high-quality development. The third is the evaluation of the impact of industrial parks on the high-quality development of cities. It is believed that industrial parks, especially ecological industrial parks, play an important role in achieving high-quality development of regional industrial economy [20, 28, 29].

To sum up, although eco industrial parks are closely related to the high-quality development of urban industry, the existing literature pays less attention to the relationship between them, and the transmission mechanism framework of the impact of eco industrial parks on the high-quality development of urban industry has not been established, which provides an entry point for this study.

3 Theoretical Analysis

At present, China is in an important period of industrial transformation and upgrading. The establishment of eco industrial parks can provide a good development environment for enterprises in the parks, promote green development of manufacturing industry, and thus improve the level of high-quality development of urban industry [14], including four dimensions: scale development quality, input factor quality, green development quality, and scientific and technological innovation quality. Specifically, eco industrial parks can take leading enterprises as the core, drive the green agglomeration development of upstream and downstream enterprises [18], and improve the scale development quality of urban industrial economy through economic agglomeration. Eco industrial parks enjoy preferential policies in terms of capital, technology, human resources and other factor inputs. The agglomeration and selection effects generated can promote the improvement

of productivity [20], thereby improving the quality of factor inputs in the urban industrial economy [19]. The eco industrial park is built in accordance with the principles of green, low-carbon and recycling. By reasonably constructing the circular economy industry chain, cultivating the ecological industry network system, realizing resource sharing and industrial symbiosis, it promotes the transformation of the economic development mode from extensive to intensive, and improves the green development quality of urban industrial economy. The construction of eco industrial parks and the pressure of environmental protection assessment not only promote more strict environmental regulations to force enterprises to innovate, but also enable local governments to optimize soft environments such as science and technology education through fiscal preferential policies [14], and ultimately improve the quality of scientific and technological innovation of urban industrial economy.

Taking industrial ecology as the theoretical basis, eco industrial parks not only control environmental pollution from the source through environmental regulation, force enterprises to innovate technology and improve the quality of economic development, but also promote industrial green transformation through the scale effect and spillover effect generated by green economic agglomeration, so as to achieve high-quality development of urban industries. First, the design principles and evaluation indicators of the eco industrial park have clear standards for pollutant emission, energy consumption and utilization rate. In order to meet the assessment standards of the eco industrial park, the local government needs to implement more strict environmental regulations, not only producing “crowding out effect” for pollution intensive enterprises in the park, but also producing “environmental barriers” for enterprises to enter the park, Prevent the entry of highly polluting enterprises [21], form a mechanism of “internal exclusion and external hindrance”, and promote the park to achieve industrial green transformation, so as to achieve high-quality development of urban industry. Second, the government has the advantage of total amount information, which can play the “directional guidance” function of tendentious policies, and promote the high-quality development of urban industry through “rent creation” [23, 24]. The government will favor technological innovation enterprises with low pollution and high output value, give them more preferential policies such as tax reduction, R&D subsidies and land concessions, and encourage them to continue to strengthen R&D innovation and achieve leapfrog development [25]; The local government will also optimize the industrial system [21] by technological transformation of traditional pollution intensive industries to reduce energy consumption, improve resource utilization and reduce pollutant emissions, so as to provide support for the high-quality development of urban industry. Third, the establishment of eco industrial parks can form economic agglomeration [14], which will not only promote the generation of spillover effects and economies of scale, help improve the efficiency of factor use [26], but also alleviate the “pollution shelter” effect [27] to a certain extent. Therefore, the economic agglomeration formed by the eco industrial park can realize the high-quality development of urban industry.

4 Conclusions

Based on the above research conclusions, this paper draws the following three policy implications: First, expand the pilot scope of eco industrial parks. The qualified industrial parks are encouraged to actively apply for the construction approval qualification of eco industrial parks, and the approved eco industrial parks are required to speed up the construction of the parks and obtain the official name, so as to give full play to the demonstration effect of eco industrial parks in promoting the high-quality development of industrial economy. Second, we will continue to release the policy effects of eco industrial parks. Eco industrial parks need to further break the bottleneck of environmental resource constraints, promote the transformation of economic growth mode, build a gradual circular development model of “enterprise park society”, accelerate industrial transformation and upgrading and the linkage development with the service industry, promote the horizontal coupling between ecological industrial chains, realize resource sharing and industrial symbiosis, and improve the high-quality development level of urban industry with high environmental standards. Third, strengthen and apply the transmission path of the relationship between the two. On the one hand, research and formulate the list of key demonstration enterprises of green and low-carbon circular economy, further strictly control the enterprises inside and outside the park through “eliminating internal obstacles and external obstacles”, form high-quality industrial clusters, and improve the development scale and quality of industrial economy. On the other hand, through the “targeted guidance” of preferential policies, we will deeply implement the innovation driven strategy, continue to tap new development potential, comprehensively promote scientific and technological innovation, business type innovation and mode innovation, and enhance the internal driving force of high-quality industrial development.

Project Fund. Key projects of the National Social Science Foundation: “Research on Roll-up and Its Avoidance Mechanism in China’s Development Zones under the New Economic Situation” (19AJUY003);

National Social Science Foundation Project: “Research on the Measurement, Influencing Mechanism and Improvement Path of the Resilience of China’s Manufacturing Industry Chain” (21BYJ063).

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