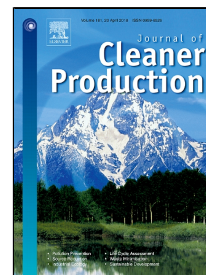


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Analysis of Low Carbon Industrial Pilot Parks in China: Classification and Case study

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Abstract

Industrial Parks (IP) have made tremendous contributions to China's national economic development. However the economic gains often come with increased environmental pollution and Green House Gas (GHG) emissions. These problems are compounded by the rapid growth of IPs in China. To promote the low carbon and sustainable development of IPs, the Ministry of Industry and Information Technology (MIIT) and the National Development and Reform Commission (NDRC) jointly launched the National Low Carbon Industrial Park Pilot Programme (LCIPPP) in 2013. As the largest pilot programme at the IP level in the world, 51 IPs which vary in location, size, and industrial mix were included. Based on the data of 51 pilot IPs, we applied cluster analysis to propose the 3 High (High carbon intensity, High ratio of coal in energy mix, and High proportion of six energy-intensive industries output), 3 Low (Low carbon intensity, Low ratio of coal in energy mix, and Low proportion of six energy-intensive industries output) and Mixed IP classifications. Then a representative IP was selected for case study in accordance with the classification. For each case, the achievements and practices, the drivers and success factors, pathways and models in low carbon development were collected and analyzed. Our findings reveal that 3H IPs should focus more on upgrading the traditional heavy industry. Meanwhile, technological innovation and enhancing carbon management are determined to be more efficient ways to realize the low carbon development of 3L IPs. As for Mixed IPs, optimizing the energy mix and adopting an "Industry + town" integrated development model will be most effective.

Key words: Low carbon industrial park; Carbon emission; Classification; Cluster Analysis;

1. Introduction

Industrial Parks (IP) in emerging and developing countries provide an institutional framework, modern services and a physical and often social infrastructure, which might not be available in the rest of the country. Successful IPs contribute to high growth regions and national economic

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