

# Analysis of the Development Trend of Emerging Green Industries in Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta Regions

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**Abstract:** Based on the characteristics of emerging industries and green industries, this paper proposes the concept of emerging green industries, and takes 513 new green industry listed companies with new energy, new energy vehicles and energy-saving and environmental protection industries as the research's sample. The object is to build an emerging green industry development index from the three dimensions of development foundation, development environment and development capability. According to the results of the 2011-2017 Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta region emerging green industry development index, it is concluded that the development of emerging green industries in the Beijing-Tianjin-Hebei region is currently in a leading position in the three regions, respectively, the Yangtze River Delta and the Pearl River Delta faced with the problem of poor development environment and serious brain drain; Under the background of the government's weakening of the support of emerging green industries, the market-oriented, continuous improvement of its R&D and innovation capabilities, and the ability to transform scientific research results into economic benefits have been become an important way for the growth of the three regions to promote the further development of emerging green industries.

**Keywords:** emerging green industry; regional development index; innovation

## 1. Introduction

China's "13th Five-Year Plan" has designated seven major industries, such as new energy and new energy vehicles, as strategic emerging industries. It believes that emerging industries are key areas for nurturing new development momentum and gaining new competitive advantages in the future. The definition of green industry in traditional research tends to be defined in a broad sense as enterprises adopting low-energy, non-polluting technologies, and the products do not contain pollution and damage to the environment in the process of

production, use and recycling.

Pei Qingbing [1] pointed out that the narrow green industry in the new situation refers to the collection of enterprises that provide products and services that are conducive to resource conservation, environmental friendliness and good ecology.; Shen Junxi et al. (2019) [2] using the Tobit model found the capacity utilization rate of the manufacturing industry is much lower than that of the service industry. Government subsidies and financial support have a significant negative impact on capacity utilization; Zhang Xiaonan (2019) [3] uses evolutionary game theory to achieve rational allocation. Methods such as subsidizing resources and enriching government subsidies can encourage the government to establish a good relationship of mutual trust and mutual benefit with strategic emerging companies.

In summary, the existing research has almost no definition of emerging green industries. Therefore, this paper combines the characteristics of emerging and green industries, and believes that emerging green industries refer to the use of new ideas, new materials and new technologies to achieve high yields with less resources and higher investment in science while meeting the effective needs of society. Out and environmentally friendly industries. Such industries combine high-risk, high-return, instability, and strong social positive externalities to fill the gaps in existing research on emerging green industries. We will select new energy, new energy vehicles and energy conservation and environmental protection industries with industry characteristics as the research and analysis, and build an emerging green industry development index from the aspects of development foundation, development environment and development capability, taking into account Beijing-Tianjin-Hebei, Yangtze River Delta and Zhuhai. As the three important growth poles of China's regional economic development, the development of emerging green industries in the region plays a role in demonstrating and guiding the development of China's emerging green industries. According to the results of the emerging green industry development index in the above three regions, Compare and analyze the development

trend of emerging green industries in Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta regions, and provide reference for promoting the development of highly emerging green industries in the region.

**2. Constructing an Emerging Green Industry Development Index**

With reference to the previous results [4], this paper selects relevant indicators from the macroeconomic and industrial policies, the meso-market and the micro-enterprise to build an emerging green industry development indicator system. The developmental foundation and development capability of the primary indicators are used to measure the development conditions of the industry itself. The development environment is used to measure the impact of the external environment on industrial development; The secondary indicators are used to describe the performance of the primary indicators from different dimensions. The indicators are directly connected with the statistical data, and the secondary indicators are quantitatively expressed. The development index of this paper uses the ring method, through the three steps of data processing, index weighting and index synthesis, with the percentage production as the standard. The score greater than 100 indicates that the industry has a good development trend in the year; vice versa.

**3. Empirical Analysis**

**3.1. Sample Selection and Data Source**

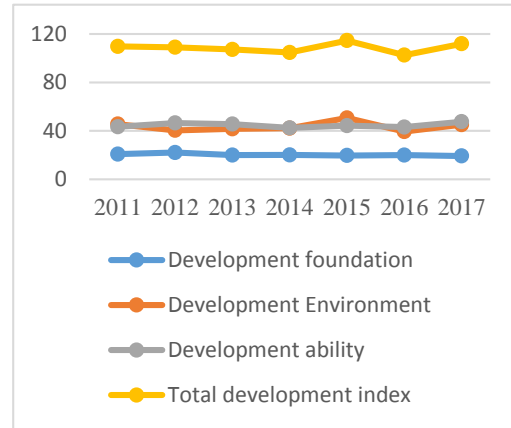
The listed company’s data is open and easy to obtain, which can reflect the development trend of China’s emerging green industry and restrict bottlenecks. Based on this, this paper selects 513 listed companies in the emerging green industry in mainland China as samples, including 189 new energy enterprises, 183 new energy vehicle companies, and 141 energy conservation and environmental protection enterprises, which quantitatively analyzes the development trend of China’s emerging green industries.

**3.2. Comparative Analysis of the Development Trend of Emerging Green Industry in Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta**

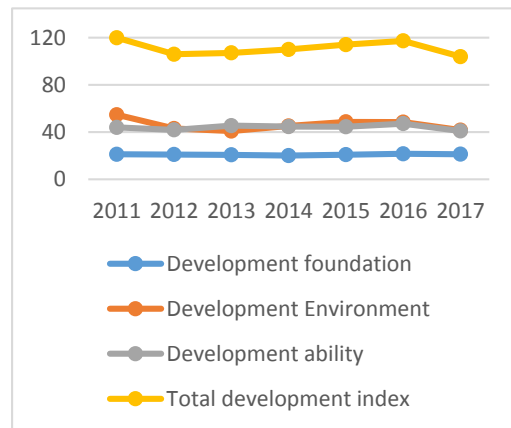
*3.1.1. Overall analysis of industrial development*

It can be seen from Figure 1, Figure 2 and Figure 3 that the development of emerging green industries in the Beijing-Tianjin-Hebei region and the Pearl River Delta region has shown a gradual upward trend, while the Yangtze River Delta region has shown a gradual downward trend. Specifically, the development foundations of the three regions have remained stable; the development capability and development index have shown a synchronous trend. For example, the peak of the Beijing-Tianjin-Hebei region in 2014 and the increasing index level can be confirmed; in addition, the development of the Yangtze River Delta region The starting point is higher, but the continuous improvement

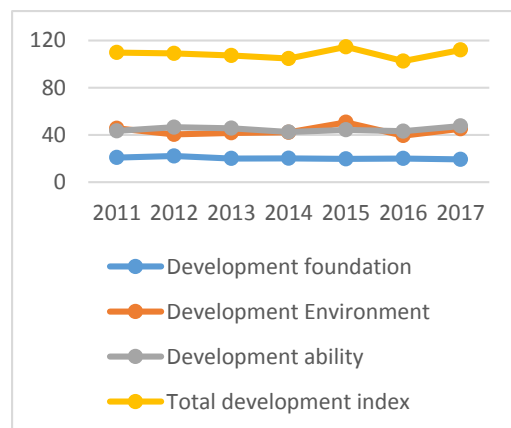
of the development environment in the other two regions has gradually narrowed the gap between regions. This shows that the development environment is highly correlated with the development degree of emerging green industries in the region, and improving the development environment to promote emerging green industries. The development effect is remarkable.



**Figure 1.** Beijing-Tianjin-Hebei development index.



**Figure 2.** Yangtze river delta development index.



**Figure 3.** Pearl river delta development index.

*3.1.2. Primary indicator analysis*

First of all, the development of the emerging green industries in Beijing, Tianjin and Hebei, the Yangtze River Delta and the Pearl River Delta is stable, and the main factor affecting the fluctuation of the development base is the industrial structure. The structural

transformation of emerging green enterprises in the Pearl River Delta region lags behind, and the market share is divided to make its industrial structure gradually deteriorate. Therefore, the improvement of the industrial structure should not be underestimated for the foundation of industrial development in the region.

Secondly, the development environment of the above three regions is fluctuating, the peaks and valleys are distinct, and the fluctuations and the changes in policy factors converge. The changes in policy factors have made the development environment in different regions different in the year. The peak in the Yangtze River Delta region is 2011, the Beijing-Tianjin-Hebei region is in 2014, and the Pearl River Delta region is in 2015. This shows that policy factors play an important role in maintaining the development of regional emerging green industries.

Finally, as can be seen from Figures 4, 5 and 6, the development capabilities of the emerging green industries in the Beijing-Tianjin-Hebei and Pearl River Delta regions have generally increased steadily, while the development capacity in the Yangtze River Delta region has gradually declined. Specifically, the indicators for the development of emerging green industries in the Beijing-Tianjin-Hebei region peaked in 2014, which was higher than the 12.34% in the Yangtze River Delta region and 17.92% in the Pearl River Delta region. The main reason for the gap in development capacity is the strength of technological innovation. Technological innovation has always been the internal driving force for promoting sustainable development of the industry. The growth of patent value of emerging green enterprises has a positive relationship with technological innovation. Therefore, improving the technological innovation capability of emerging green enterprises is an important means to enhance their core competitiveness.

#### 4. Conclusion

This paper analyzes the data of 513 emerging green industry listed companies in China from 2011 to 2017 by analyzing the evaluation index system, and analyzes the development capabilities of emerging green industries in

the three regions. The relevant conclusions are as follows:

(1) The overall development trend of the emerging green industry in the Beijing-Tianjin-Hebei region is the best, followed by the Pearl River Delta region, and the development gap between the weaker regions in the Yangtze River Delta is gradually narrowing;

(2) The problems encountered by various regions in the development process are also different. The Beijing-Tianjin-Hebei region and the Yangtze River Delta region are all due to the weakening of the development environment, that is, the decline in policy support has reduced the industry's ability to generate income, while the Pearl River Delta region has severely displaced its talents and made its development capacity lose important support.

Accordingly, Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta regions, as important economic growth poles of China, should establish themselves on a market-oriented development model, enhance technological innovation capabilities, form strong core competitiveness, and enhance emerging green industries. Development strength.

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