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Comparative Research Report on the Localized Performance Indicator Systems of the International Guidelines for Industrial Parks in China

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UNIDO Centre for South-South Industrial Cooperation

(UCSSIC China)

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Executive summary

In November 2019, the United Nations Industrial Development Organization (UNIDO) promulgated the International Guidelines for Industrial Parks (hereinafter referred to as "the Guidelines"). The Guidelines were prepared by the UNIDO Cross-Disciplinary Team on Industrial Parks (CDTIP), which combines UNIDO's technical experience and international best practices in the development and implementation of industrial park programmes and is consistent with the Sustainable Development Goals (SDGs). The Guidelines address the needs and challenges faced by developing countries and middle-income economies for the development of industrial parks. Their aim is to provide step-by-step guidance and duly substantiated suggestions on all aspects of industrial park planning, development and operational management for stakeholders in existing and new industrial parks in countries at different stages of development, and general guidance for the development of inclusive and sustainable industrial parks. At present, UNIDO has been advancing the cooperation with industrial parks in developing countries, promoting the implementation of the Guidelines in relevant countries, and contributing to the sustainable development of industrial parks. As a comprehensive framework for reference, the Guidelines cover existing and newly built industrial parks in different international environments. It is still necessary, however, to consider the specific development of the country and region where the Guidelines are to be applied.

The UNIDO Centre for South-South Industrial Cooperation, a collaborative venture with China and known as "UCSSIC China", will assist UNIDO headquarters in promoting the Guidelines in the industrial parks in China and countries along the Belt and Road Initiative. This will be achieved through the South-South cooperation platform, in particular, its application in the UNIDO Programme for Country Partnership (PCP).

During the promotion of the Guidelines and their application to China's industrial parks, certain problems have been revealed by a preliminary review. The index system is more comprehensive than the current index systems used in China for various parks. There are challenges such as the need to choose between evaluation dimensions, the need to quantify indicators as much as possible, and the need to adjust the weighting of certain indicators according to the actual conditions of China's industrial parks.

With the organization and coordination of UCSSIC China, experts from the Green Development League of National Economic and Technological Development Zones, the Chinese Research Academy of Environmental Sciences (CRAES) and the School of Architecture in Southeast University jointly carried out comparative research on the localized performance indicator systems within the framework of the Guidelines. As part of the research exercise, the expert team consulted a large number of documents, analysed and interpreted the policy documents related to the development of China's industrial parks, made field investigations to typical industrial parks in China, interviewed various stakeholders such as management and operation departments, enterprises and workers of industrial parks, compared the evaluation index system of the Guidelines and those related to the development of industrial parks in China across a number of dimensions, and reflected the opinions and suggestions of Chinese experts and scholars, government officials, industrial park operators and enterprise managers.

Before the comparative study, the research team briefly reviewed the development process, current development status, management mode and green development evaluation index system of China's industrial parks with a view to gaining a comprehensive understanding of the development of

China's industrial parks. Based on the comparative study, this report compares and analyses the performance indicator systems of the Guidelines and those used in various guiding documents for the industrial parks that are set up under a range of names in China, including "green industrial parks", "low-carbon industrial parks", "circular transformation industrial parks", "eco-industrial demonstration parks", "State-level economic and technological development zones" and "national high-tech industrial development zones".

Based on the research and analysis, the report summarizes and refines the key points of the localized performance indicator systems from the perspective of availability, applicability and special value of the relevant indicators. After screening, suggestions related to various localized indicators are put forward and these fall into three main categories: "can be directly applied", "can be used after adjustment", and "to be integrated or deleted".

In order to analyse the applicability of the localization index system to China's industrial parks, during the research process, the Tianjin Economic and Technological Development Zone, Hefei High-Tech Industrial Development Zone and Suzhou Industrial Park were selected for the conduct of local verification exercises from the three dimensions of economic, social and environmental performances. On that basis, the report makes recommendations on the Guidelines' adjusted performance indicator system and on those related to localized quantitative indicators for practical applications in China.

In addition, the research team made suggestions on how to promote the application and promotion of the localized indicator systems in China, and how to promote inclusive and sustainable development of China's industrial parks, so as to provide important reference for the follow-up research, pilot application and international cooperation of UNIDO and its projects.

Overview of industrial parks in China

As an important driving force for China's economic development and urbanization development, the development of industrial parks is an important element of the process of China's reform and opening-up, and also the vehicle for the practical implementation of China's industrial intensive and environmental development strategy. Since the launch of the reform and opening-up process, the rapid development of China's economy and industry has enabled many industrial parks to thrive, producing more than 50 per cent of the country's industrial output and making significant contributions to the development of a modern industrial system.

According to the China Development Zone Audit Announcement List (2018), there are 2,543 development zones in China, accounting for about half of the total number of special economic zones (parks) around the world. The development process of China's industrial parks can be divided into the initial and exploratory stage (1979–1991), the growth and rapid promotion stage (1992–2002), the adjustment and development stage (2003–2015), and the transformation and upgrading stage (2016 to date). The development model and concept of China's industrial parks also display different characteristics. The management modes for industrial parks in China are mainly of three types: government-owned, business-driven and mixed mode, with management by both government and the businesses involved.

While industrial parks in China are booming, they are facing a range of challenges, such as unbalanced development, insufficient innovation capability, pollution and greenhouse gas emissions, and intensive resource and energy consumption. Over the past 20 years, in response to the above challenges, the Chinese Government has been vigorously promoting the practice of green and sustainable development concepts in the field of industrial park development and constantly exploring new park development modes, and

remarkable achievements have been made.

At present, China has set in place top-down evaluation methods and systems for green and sustainable development performance of provinces, municipalities and autonomous regions. The industrial parks have some specific characteristics, however, in their administrative framework, functional structure and economic and environmental statistics system. Since the industrial parks clearly differ widely from the urban administrative districts in terms of their management function and management mode, it is impossible for them to evaluate the green development and the performance of various indicators at the administrative district level in accordance with the superordinate documents.

To solve this problem, competent ministries and commissions in China began to create demonstration pilots and establish evaluation systems for industrial parks from particular viewpoints for a green, low-carbon and circular economy. At present, evaluations on the comprehensive development level of national economic development zones and the establishment and evaluation of national eco-industry demonstration parks, recycling transformation demonstration pilot parks, pilot low-carbon industrial parks, green parks and other demonstration pilot parks are either separately or jointed promoted by the National Development and Reform Commission, Ministry of Commerce, Ministry of Ecology and Environment, Ministry of Industry and Information Technology and other ministries.

Comparative research on the localized performance indicator systems

To gain a systematic understanding of the relevant policies and regulations of development evaluation for China's industrial parks, the research team selected policy documents at different levels, from the national level to that of typical provinces, cities, parks and enterprises, and interpreted and analysed the selected documents from the dimensions of evaluation purpose, applicable objects, evaluation dimensions, indicator system structure, evaluation calculation method, evaluation comparison scope, data availability and constraints. The national-level policy documents included those on the comprehensive assessment of the development level of green parks, low-carbon parks, circular transformation parks, eco-industrial demonstration parks, national-level economic and technological development zones, national high-tech industrial development zones evaluation index system, and the social responsibility evaluation index system of Chinese industrial enterprises.

The policy documents of typical provinces and cities include the evaluation of Zhejiang's scenic industrial parks (development zones), the evaluation of Shaanxi's high-tech industrial development zones, and the comprehensive evaluations of Shanghai's development zones; the policy documents of typical parks include the comprehensive evaluation of the intensive use of industrial enterprise resources in Suzhou Industrial Park , and the Qingdao Sino-German Ecological Park Index System. At the same time, the research team analysed policy documents on the performance evaluation of industrial parks issued by international organizations and by certain developed and developing countries to understand the latest practices in related fields at the international level, aiming in this way to provide references for the localization of the Guidelines index system and the optimization of China's existing evaluation index system.

This study analyses the differences in administrative systems, industrial development stages and cultural customs of Chinese and foreign industrial parks, in order to understand the differences in management of Chinese and foreign industrial parks, and the major differences in the concepts, models, and content of the evaluation of the development of the parks. The management modes of industrial parks in China are not highly diversified at present and relies on top-down administrative management by government agencies. In the initial period of development, evaluation of the parks is also limited to the economic indicators, which are largely

associated with the evaluation of local political achievements. In recent years, in the pursuit of environmental awareness and high-quality development, a series of indicators related to these goals, including resource productivity, pollutant emission levels and scientific and technological innovation levels, have been incorporated into the evaluation system of industrial parks. The evaluation of industrial parks in China is growing more and more scientific and exerting a guiding influence on the operational management of the industrial parks.

China has promulgated and implemented evaluation index systems at different levels for seven types of industrial parks, namely, green parks, low-carbon parks, parks in transformation to the circular economy, eco-industrial demonstration parks, national economic and technological development zones, national high-tech industrial development zones, and socially responsible parks of Chinese industrial enterprises. The framework, implementation and assessment of these indicator systems have an important reference value for the incorporation in Chinese national frameworks of the Guidelines.

The present research exercise compares the Guidelines with the evaluation index system of China's seven types of industrial parks, with a view to identifying commonalities and differences in the evaluation practices. It mainly focuses on the evaluation purpose, applicable object, evaluation aspect, indicator system structure, evaluation calculation method, data availability and evaluation constraint, in order to identify differences between subject to horizontal comparison and are mostly used to evaluate the development zones above the provincial level, while the Guidelines imposes no requirements on the size of evaluation objects, so they have a complementary value for the evaluation of small and medium-sized industrial parks in China.

In terms of the evaluation system set-up and score calculation, the existing evaluation indicator system for industrial parks in China is relatively complex, and a scoring system has been employed in the Guidelines, so the evaluation method is more intuitive.

In terms of data availability, given the restrictions of the existing statistical coverage, most of the existing evaluation indicator systems for industrial parks in China require industrial parks to complete relevant data by themselves. Similar approaches will also be used to obtain data in the process of adaptation and promotion of the localized Guidelines.

In terms of incentives and penalties for the industrial parks in China, these are commonly practised in the existing evaluation indicator system by granting badges of honour to industrial parks or revoking such badges of honour from industrial parks in response to their evaluation, which may affect their access to financial resources.

In addition to the above, an index frequency analysis was carried out on the Guidelines and seven sets of evaluation indicator systems prepared for industrial parks in China to gain a better understanding of the differences in the evaluation index system. The results of this analysis also

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