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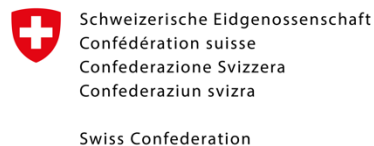
GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME

**2024**

# National Eco-Industrial Park Standards

**Best Practice Series**





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# INTRODUCTION AND STATE OF PLAY

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In recent decades, industrial parks have emerged as a strategic method to consolidate industrial operations with commercial and infrastructure services. This approach has been hailed for its efficiency in fostering economic growth.

However, industrial parks can carry both benefits and drawbacks. On the positive side, they stimulate economic development, but they also tend to concentrate on adverse environmental and social consequences. These include increased greenhouse gas emissions, pollution, resource depletion, substandard labour conditions, and complaints from impacted communities.

This development creates a valuable opportunity to design and manage industrial parks that align with economic, social, and environmental goals. As a result, the concept of Eco-Industrial Parks (EIPs) has emerged as a strategy for fostering inclusive and sustainable industrial development in accordance with the Sustainable Development Goals (SDGs).

The development and adoption of Eco-Industrial Parks (EIPs) approaches have become central to sustainable industrial activities. These approaches aim to enhance economic viability, environmental sustainability, and social inclusivity within industrial zones.

The concept of EIPs has matured, as marked by the publication of the International Eco-Industrial Park (EIP) Framework<sup>1</sup>. This framework provides objectives and benchmarks to guide industrial parks and relevant authorities worldwide,

This framework, published by the United Nations Industrial Development Organization (UNIDO), the World Bank Group, and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), is intended to serve as a cornerstone for advancing EIP initiatives in partner countries.

## State of Play

Funded by Switzerland through its State Secretariat for Economic Affairs (SECO), UNIDO is actively disseminating the EIP approach through the Global Eco-Industrial Parks Programme (GEIPP) in various countries. It has led to significant progress in Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, and Viet Nam.

The International EIP Framework has effectively guided the development and improvement of industrial parks in these countries. It has also facilitated the integration of environmental, economic, and social sustainability into industrial operations.

However, some challenges have been identified in regions with less favourable or imperfect regulatory frameworks to achieve broader Eco-Industrial Park (EIP) adoption. These circumstances can hinder the full realization of EIP benefits.

Hence, developing approaches to foster wider acceptance and implementation of EIP principles in challenging regulatory landscapes becomes necessary. One suggested measure is establishing a recognition scheme based on the EIP criteria outlined in the International EIP Framework.

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<sup>1</sup> An International Framework for Eco-Industrial Parks version 2.0. [Weblink](#)

Also, industrial parks embarking on the EIP transition desire recognition of their progress and improved performance.

A formal recognition based on benchmarks would enable the governments to better direct incentives towards industrial parks to adopt and adhere to EIP principles and promote broader adoption. The same applies for financing entities, both national and international, commercial and public.

Further, a formal recognition would provide a benchmark for assessing the performance and sustainability of industrial parks, facilitating continuous improvement and innovation in the field.

### **National and International EIP Standard**

Setting national standards is crucial for ensuring consistent benchmarks for all industrial parks within a country and potentially creating incentives to advance towards the defined EIP status. National EIP standards can also level the playing field for all industrial parks within a country. They can be expected to raise the bar across industrial parks in the country.

Significant progress is being made in establishing national EIP standards and associated certifications in some countries. Colombia and Viet Nam have already taken significant steps in this direction.

While these country-specific initiatives represent a positive move towards

enhancing the sustainability of industrial parks, they will inevitably lead to varying EIP standards, each differing in scope and detail.

This highlights the need for an international Eco-Industrial Park (EIP) standard. Such a standard would uphold the principles of the International EIP Framework and ensure clear communication throughout value chains. It will further facilitate global comparability of park performance across different countries.

### **This Best Practice Publication**

This publication is a part of GEIPP Best Practice Series and highlights the progress made in establishing national EIP standards. The advancements vary, reflecting the alignment between standard development and the unique regulatory and policy frameworks of each country.

Focusing on fostering knowledge exchange, this publication provides insights into the approaches taken in developing recognition schemes. It explores the objectives behind creating national EIP standards, the processes involved, and the challenges encountered.

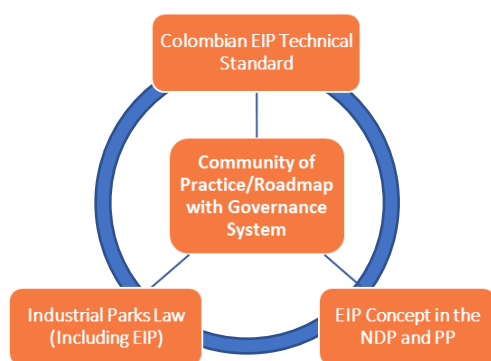
The content of this publication is based on an online workshop held in March 2024. During this time, EIP practitioners convened to discuss emerging trends in EIP standardization efforts.

# CASE STUDY 1: COLOMBIA-NATIONAL TECHNICAL STANDARD

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According to the Regulatory Impact Analysis (RIA) conducted by GEIPP Colombia in 2021, Colombia needs to establish regulatory basis to ensure the sustainability of EIP transformation.

This effort involved three main elements: incorporating concrete actions into the national development plan, enacting a law dedicated to Industrial Parks, and establishing a technical standard for certifying the compliance with EIP criteria in industrial parks as a form of recognition.



Policy instruments support on each other to secure the sustainability of EIP transformation in Colombia.

The EIP Technical Standard holds high relevance and is prioritized in the work plan of GEIPP Colombia. It serves as recognition of the work and effort put forth by those Industrial Parks and Free Zones in their transition process towards the Eco-Industrial Parks model.

To initiate the EIP Technical Standard process, a collaboration with Colombia's standardizing body, ICONTEC (Colombian Institute of Technical Standards and

Certification), was initiated. This effort has resulted in the establishment of a Temporary Technical Committee (T-619) chaired by ANDI (Association of Colombian Industries).

This committee convened to gather inputs for the development of the national standard. It included the participation of 41 individuals representing 12 different institutions, both public and private, 4 Industrial Parks, and 5 Free Zones.

During the approval process for the draft technical standard, a total of six plenary sessions for public consultation and three sub-committee sessions were conducted.

One of the challenges encountered in the process was the extensive heterogeneity among Colombia's Industrial Parks and Free Trade Zones in terms of size, number of tenant companies, and sector diversity. This led to extensive discussions regarding the verification of indicators and their measurement percentages at each level.

Despite of this challenges, all comments were addressed and resolved without compromising the close relationship between the Colombian standard and the international framework for EIPs.

After six months of discussion, the Technical Standard NTC 6720:2023 was unanimously approved by the T-619 committee.

## The Technical Standard NTC 6720:2023<sup>2</sup>

The Colombian EIP Technical Standard has been tailored to address the specific requirements of the Colombian industry

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<sup>2</sup> National Technical Standard-Colombia NTC6720:2023. [Weblink](#)

by adapting the International EIP Framework.

This adaptation primarily involves using the original 64 indicators and establishing a tiered system with three distinct compliance levels: "Transitioning," "Advanced," and "Expert" for each indicator and sub-indicator within the framework.



To communicate compliance levels effectively, various formats are employed, including checklists and percentage-based evaluations. Checklists allow parks to be categorized based on their compliance with specific the indicators.

Meanwhile, percentage-based evaluations classify parks according to the extent of implementation of certain practices. For instance, in indicator 5.2.4.4.3, a park will be marked as "transitioning" if 1% to 19.99% of tenant companies adopt circular economy and industrial symbiosis practices, "advanced" if 20% to 49.99% do so, and "expert" if 50% or more embrace these practices.

The final classification of the industrial park is based on whether or not the park

meets all the requirements and indicators. Each aspect evaluated contributes to determining its level of compliance and, therefore, its classification.

The overarching goal of establishing this tiered system is to incentivize the transition towards EIP and foster continuous performance improvement efforts.

### Looking Ahead

The development of a comprehensive verification manual for the established technical standards is essential. This manual will outline the methodology, parameters, and verification procedures. It will serve as a crucial resource for auditing companies. Its purpose is to ensure that practical applications conform to the established standard.

Certification holds significant value, serving as proof of EIP transition efforts. It can open doors to increased investment opportunities and incentive schemes for EIP adoption. However, achieving these hinges on raising awareness. Once the conformity verification guide is finalised, training sessions and awareness campaigns must be conducted.

Industrial parks and the recognized certification entity must thoroughly acquaint themselves with the standard and proactively initiate the certification preparation process.

Throughout 2024, these three pivotal activities will be conducted, culminating in the certification of the first industrial park by 2025.

# CASE STUDY 2: VIET NAM-DECREE 35 AND EIP INDICATORS

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The integration of EIP concepts into Vietnam's regulatory framework resulted from a technical collaboration between three entities. This collaboration took place from 2015 to 2019. The entities involved were the United Nations Industrial Development Organization (UNIDO), the Global Environment Facility (GEF), and the Swiss State Secretariat for Economic Affairs (SECO).

This partnership culminated in the issuance of Decree 82 by the Vietnamese government, formally embedding EIP principles within the national regulatory framework.

In 2020, Vietnam received further assistance from the Global Eco-Industrial Parks Programme (GEIPP). Building on the GEF-SECO EIP initiatives, GEIPP Vietnam refined national EIP criteria and created operational guidelines. These efforts led to the issuance of Decree 35 in 2022, formally replacing Decree 82 as the regulatory framework for industrial parks and economic zones.

Decree 35 establishes refined criteria for the designation, certification, and incentives for eco-industrial parks (EIP). Specifically, Article 40 (1) stipulates that *"an industrial park meeting the criteria outlined in Article 37 of this decree will be granted an eco-industrial park certificate by the Provincial People's Committee."*

Article 37 outlines nine criteria directed at park management entities and tenant companies. It specifies prerequisites for common infrastructure that a park must establish to be recognized as an Eco-Industrial Park. The detailed criteria are as follows:

## Park Management Entities

- » Maintain compliance with national laws and regulations for a minimum of three years.
- » Provide essential services to enterprises.
- » Share reports on environmental compliance and corporate social responsibility (CSR) with the local community.
- » Facilitate at least one industrial symbiosis (IS) initiative and ensure tenant companies adhere to ISO standards.
- » Ensure at least 20% of tenant companies engage in resource-efficient and cleaner production (RECP) practices, recycle resources, and utilize by-products.

## Tenant Companies

- » Ensure compliance with national environmental protection laws and regulations for a minimum of three years.

## Infrastructure Requirements

- » Allocate a minimum of 25% of industrial park land for greenery, traffic works, and public utilities.
- » Establish a coordination mechanism to monitor the inputs and outputs of raw materials, water, energy, and waste.
- » Implement solutions for providing housing, public services, and utilities for employees working within the industrial park.



Following the criteria outlined in Decree 35 for the certification process, it is deemed necessary to establish monitoring, reporting, and verification systems for industrial parks to ensure their continuous performance.

For this purpose, GEIPP Viet Nam has been developing a proposal comprising set of national indicators.

### National EIP Indicators and EIP Index<sup>3</sup>

The Vietnamese EIP Indicators are designed to establish the national standard for evaluating the performance of certified Eco-Industrial Parks (EIPs) and to specify the requirements outlined in Article 37 of Decree 35/2022/CP-ND.

The developed indicators comprise an array of indicators sourced from various references, including:

- » The EIP International Framework version 2.0
- » Decree 35/2022/ND-CP on Industrial Park and Economic Zones Management
- » Decision 681/QĐ-TTg/2019 outlining the roadmap for implementing Viet Nam's Sustainable Development Goals (SDGs) by 2030
- » "Eco-Industrial Parks Viet Nam – Social and Economic Indicators for Eco-Industrial Parks in Vietn Nam," a publication developed by UNIDO and Ministry of Planning and Investment (MPI).

Following the indicator identification, GEIPP Vietnam conducted survey research in four industrial parks where the pilot project is underway. This includes Deep C IP in Hai Phong, Amata IP in Dong Nai, Hiep Phuoc IP in HCMC, and Hoa Khanh IP in Da Nang.

The survey aimed to evaluate the relevance and applicability of indicators at the park level. It identified 23 indicators relevant to the Vietnamese context and categorized into two groups: prerequisites and performance indicators.

Prerequisite indicators are assigned a weight factor of 3, while performance indicators receive weights of either 1 or 2 based on their importance to the EIP concept. These weights contribute to the final EIP index score calculation.



For communication purposes, industrial parks will be categorized into three levels: Bronze, Silver, or Gold. The assignment of these categories is determined by the following criteria:

- » Gold EIP: Industrial Park meets all 23 prerequisite and performance indicators; EIP Index is 1.
- » Silver EIP: Industrial Park meets all 20 prerequisite indicators; EIP index is 0.83.

<sup>3</sup> National EIP Indicators and Index. [Weblink](#)

- » Bronze EIP: Industrial Park meets 14 prerequisite indicators; EIP index is 0.57.

### Looking Ahead

The entire process involves iterative procedures and multiple rounds of discussions with relevant stakeholders and policymakers.

Currently, these 23 indicators are under review. The formal utilization of these

indicators will be implemented upon the issuance of a guiding circular to operationalize Decree 35.

Further, these indicators will be used for the annual review of the performance of industrial parks certified as Eco-Industrial Park by the Provincial People's Committee—an administrative agency responsible for implementing constitutional and legal provisions.

# CASE STUDY 3: INITIAL PHASE OF STANDARD DEVELOPMENT IN INDONESIA AND UKRAINE

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Colombia and Vietnam have fully or partially developed EIP standards, whereas Indonesia and Ukraine are in the initial stages of development. These differences reflect country-specific regulatory landscapes and the formalization process of regulatory instruments.

## Indonesia

In Indonesia, the national EIP standard will primarily draw from the international EIP framework, with necessary adjustments to accommodate specific national requirements.

The development process involves three key channels: an Inter-ministerial Forum, stakeholder consultations, and direct engagement between the Indonesian Ministry of Industry, national certification institutions, and GEIPP Indonesia.

As a result of this collaborative effort, 69 relevant indicators for Eco-Industrial Park development have been identified. These indicators are derived from:

- » the International EIP Framework 2.0,
- » additional criteria from the Green Industry Standard, Environmental, Social, and Governance (ESG) principles,
- » Indonesia's Sustainable Finance Taxonomy,

- » the Indonesia Industry 4.0 Readiness Index (INDI 4.0).

Following the approval of this national framework, a ministerial regulation will be necessary to formally endorse it as the basis for developing the national EIP standard.

The certification process for the Industrial Park is envisioned to be conducted by a third-party organization in accordance with regulations set by the Ministry of Industry. Following this, accreditation will be provided by the National Professional Certification Board (BNSP).

## Ukraine

Following parliamentary discussions on the draft Eco-Industrial Park Law, Ukraine has seen a rising demand for an EIP recognition scheme from industrial parks across the country. This progress is also attributed to the inclusion of the Eco-Industrial Park approach in the national strategy until 2030.

To protect Eco-Industrial Park status and prevent unverified claims to attract investors and markets, Ukraine recognizes the need for legal protection and a formal EIP definition.

GEIPP Ukraine is currently assisting the Ukrainian government in developing a national EIP standard, which will later serve as the basis for park assessment and certification. The draft of the national EIP standard is expected to be published at the end of 2024.

# CONCLUSION

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EIP standards are a logical next step after the introduction of the International EIP Framework. National and international EIP standards serve somewhat different purposes and can converge over time.

The journey towards establishing national standards for Eco-Industrial Parks (EIPs) highlights the transformative potential of integrating environmental sustainability, economic viability, and social inclusivity into industrial development.

Countries such as Vietnam, Colombia, Indonesia, and Ukraine are making significant progress in developing and implementing Eco-Industrial Park (EIP) standards. These efforts are tailored to suit their unique regulatory landscapes and industrial contexts.

Colombia's experience underscores the importance of national regulatory frameworks and standards in driving the EIP agenda. By establishing a detailed technical standard through inclusive and collaborative processes, Colombia has set an example for other countries to consider.

Viet Nam has demonstrated a strong commitment to sustainable industrial practices by developing comprehensive regulatory frameworks. The issuance of Decree 35/2022/ND-CP on Eco-Industrial Park underlined Viet Nam's dedication to fostering the development of Eco-Industrial Parks in the country.

Indonesia and Ukraine are in the initial phases of standard development. This

highlights the challenges and opportunities inherent in aligning national regulations with the international EIP framework.

Indonesia's multi-channel approach and Ukraine's legislative measures reflect a growing recognition of the need for legally protected EIP certification schemes. This measure is essential to prevent unverified claims, greenwashing and ensure genuine sustainability efforts.

The International EIP Framework provides a robust foundation for the development of the EIP standards by setting consistent benchmarks.

Moving forward, the establishment of national and international standards for EIPs will play a pivotal role in shaping inclusive and sustainable industrial parks. UNIDO, GIZ, and the World Bank will collaborate on developing these international standards. Currently, discussions are focused on identifying the certification entity best suited for this purpose.

These standards not only provide clear guidelines and recognition mechanisms but also incentivize industrial parks to adopt best practices, driving continuous improvement and innovation.



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