

INSTITUTIONAL FRAMEWORKS AND PRACTICES OF "ECO-INDUSTRIAL PARK" AND "ECO-ENTERPRISE" IN VIETNAM

Entering the Era of Eco-Industrial Parks in Viet Nam

To promote the sustainable development of Viet Nam's industrial parks, the legal framework for Eco-Industrial Parks (EIPs) has been gradually established since 2018 and was formally institutionalized in 2022. Environmental initiatives that have already been considered or implemented by stakeholders in industrial parks and factories are now positioned within a national framework, enabling broader and more structured promotion of environmental efforts.

This article introduces an overview of Viet Nam's EIP framework along with practical examples.

Nippon Koei has long been involved in the planning, design, and construction supervision of industrial parks across ASEAN. In Vietnam, we have designed major IPs including Thang Long Industrial Park (in 1998), Hoa Lac Hi-Tech Park, Long Duc Industrial Park, and Phu My 3 Specialized Industrial Park. More recently, reflecting the growing emphasis on environmental and social considerations, Nippon Koei has increasingly integrated eco-smart concepts into master plans, and we are also supporting the transformation of existing industrial parks into eco-smart industrial parks.

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Articles:

- Using Smart Technologies (Autonomous driving and MaaS) to promote TOD in Binh Duong New City, Viet Nam, Shintoshin magazine, Issue 77, 2023 (Co-author)
- Young project managers at Nippon Koei aiming to create from zero across various fields – Nikkei x TECH, November 2024



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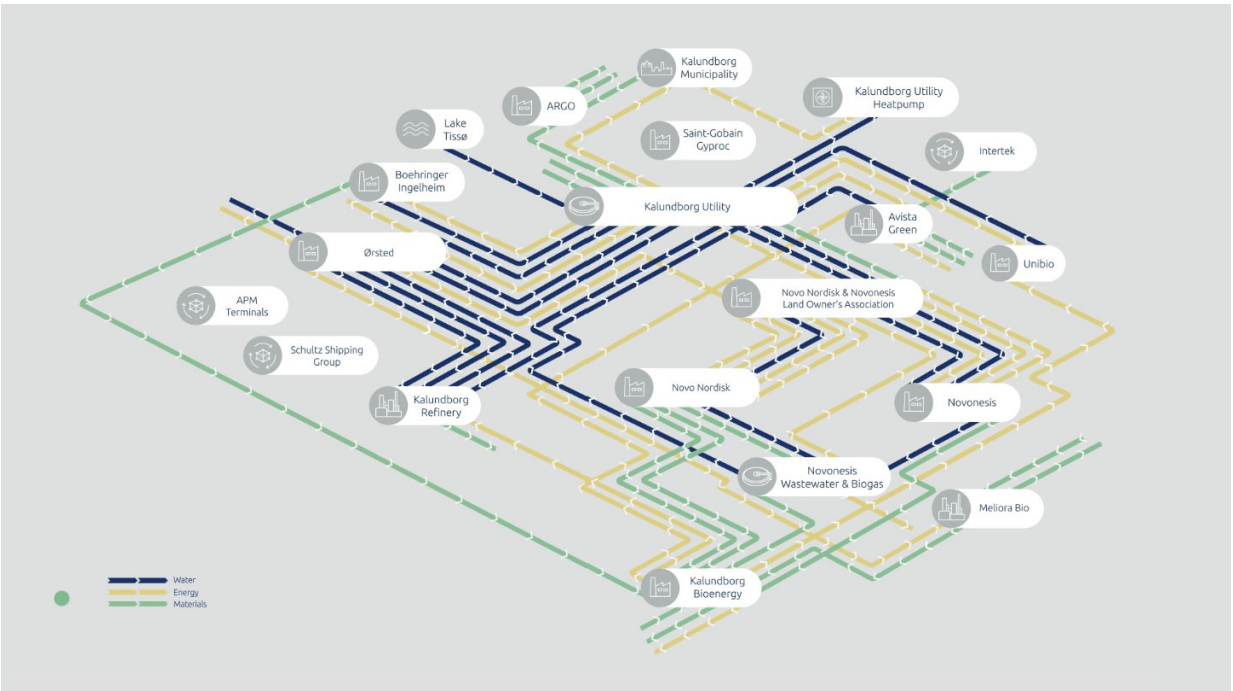
Main areas of work:

- Environmental management
- Climate change response
- Collaboration with local governments
- Supporting overseas expansion of environmental technologies

Global Framework of Eco-Industrial Parks

The concept of EIP traces back to the 1960s with the Kalundborg Industrial Park in Denmark, where the world’s first industrial symbiosis was realized. Known as the "Kalundborg Symbiosis," this model saw 16 companies collaborate to exchange by-products and waste materials as valuable inputs—such as raw materials or energy—for other firms within the park. This pioneering initiative simultaneously reduced costs and minimized waste, delivering both environmental and economic benefits.

Since the 2000s, both academic research and practical applications of EIPs have advanced significantly. In 2017, UNIDO (United Nations Industrial Development Organization), the World Bank, and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) jointly published the “International Framework for Eco-Industrial Parks,” establishing a globally recognized structure for EIP development.



World's First Eco-Industrial Park Model (Kalundborg)

Source: Kalundborg Symbiosis

Institutionalization in Viet Nam

Since 2018, UNIDO has led the Global EIPs Programme, providing technical assistance across seven countries, including Viet Nam. Through continuous collaboration with Viet Nam’s former Ministry of Planning and Investment (MPI), the legal foundation for EIPs was initially introduced under Decree No.81 in 2018. This framework was further revised in 2022 with the enactment of Decree No.35/2022/ND-CP, followed by the issuance of Circular No. 5/2025/TT-BKHDT in January 2025, which outlines specific implementation procedures.

These legal instruments define "Eco-Industrial Parks" and "Eco-Enterprises" within the regulations governing industrial parks and economic zones. Accompanying guidelines offer a pathway for local governments to begin the official certification process.

Thus, Viet Nam’s EIP system has been aligned with global movements, establishing a robust institutional foundation for future development.

What are “Eco-Industrial Parks” and “Eco-Enterprises”?

According to UNIDO’s international framework, an EIP is defined as “a dedicated area for industrial use at a suitable site that supports sustainability through the integration of social, economic, and environmental quality aspects into its siting, planning, management and operations.”

The framework specifies 4 performance pillars — “Park management,” “Environment,” “Social,” and “Economic” — with clearly defined, measurable indicators for each.

- Key benefits of EIPs include:
- Reduced use of raw materials, water and energy
 - Reduction of Greenhouse Gas (GHG) emissions
 - Proper management of chemicals
 - Reduced waste through resource circularity
 - Shared recycling facilities
 - Improved competitiveness and profitability of businesses
 - Creation of good-quality jobs and Improved workers health and safety
 - Increased quality of life for communities
 - Better access to new technologies and green finances

PARK MANAGEMENT PERFORMANCE	ENVIRONMENT PERFORMANCE	SOCIAL PERFORMANCE	ECONOMIC PERFORMANCE
• Park management service • Monitoring • Planning and zoning	• Environmental management and monitoring • Energy management • Water management • Waste and material use • Natural environment and climate resilience	• Social management and monitoring • Social infrastructure • Community outreach and dialogue	• Employment generation • Local business and SME promotion • Economic value creation
7 pre-requisites 2 performance indicators	15 pre-requisites 15 performance indicators	2 pre-requisites 12 performance indicators	7 pre-requisites 4 performance indicators

The Four Categories of an EIP

Source: An International Framework for Eco-Industrial Parks

Under Viet Nam’s framework, certification is granted based on 4 performance indicators and industrial symbiosis initiatives. The definitions are as follows:

- **Eco-Industrial Park:** An industrial park where tenant companies implement cleaner production practices and engage in industrial symbiosis for efficient resource use.
- **Eco-Enterprise:** A company within the EIP actively engaging in the above practices.

Certified industrial parks and enterprises become eligible for various incentives, including access to environmental protection funds, preferential green finance such as green loans and green bonds, technical support programs, and industrial symbiosis networks.

Practice in Ba Ria-Vung Tau Province (JICA's Technical Cooperation)

A notable case is the JICA's cooperation project launched in October 2023: "Technical Cooperation Project for the Development of Guidelines for Model IPs – Smart IPs towards Eco Orientation and Application of Information Technology in Management and Administration in Ba Ria-Vung Tau Province, Viet Nam". This project is being implemented in collaboration with the Industrial Parks Management Authority of Ba Ria-Vung Tau Province (now part of Ho Chi Minh City), where the promotion of environmentally friendly and IT-enabled industrial parks is encouraged. Through practical implementation in two model industrial parks, the project aims to concretely develop and promote eco-industrial park initiatives using a bottom-up approach. As part of technical



Joint Coordination Committee chaired by Vice Chairman of the Ba Ria-Vung Tau People's Committee (April 2024)

cooperation, Japan's Kitakyushu Eco-Town model—an example of public-private environmental collaboration—is also being introduced. We at Nippon Koei are also involved in the project as the implementation consultant—Takeda as Deputy Project Manager and Gyotoku as Smart technology integration lead.

Practice at Phu My 3 Specialized Industrial Park

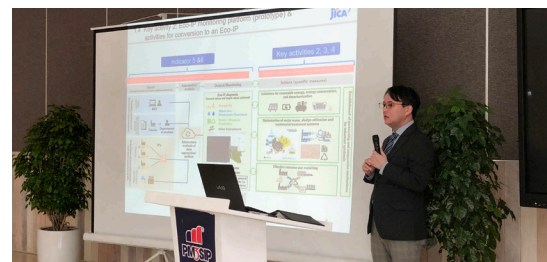
At Phu My 3 Specialized Industrial Park (PM3SIP), one of the model industrial parks, analysis of EIP indicators and pilot demonstration projects are underway.

Analysis of EIP is doing a baseline assessment following the Viet Nam's standard, organizing data from the industrial park and its tenant companies through workshops and surveys, and identifying needs and challenges. A real-time monitoring system, including smart meters and EIP monitoring dashboards, is installed to visualize current conditions and progress.

Simultaneously, pilot projects are being developed in collaboration with the Industrial Park's management company and tenants.

The proposed eco-solutions for EIPs include:

- Shared/reused surplus heat, steam, and waste
- Deployment of renewable energy such as solar, wind and biomass energy
- Energy-saving equipment and EMS (Energy Management Systems)
- Water recycling and waste valorization



Workshops and seminars held at Phu My 3 Specialized Industrial Park

Through this dual approach—"baseline monitoring" and "pilot demonstration"—practical EIP implementation is moving forward. Challenges such as regulatory hurdles, tenant needs, and the need for cooperation with local authorities and utilities are gradually being identified.

References

- An International Framework for Eco-Industrial Parks, Version 2.0, UNIDO, World Bank Group, GIZ, 2021
- ODA Website (Japan International Cooperation Agency - JICA): "Technical Cooperation Project for the Development of Guidelines for Model IPs – Smart IPs towards Eco Orientation and Application of Information Technology in Management and Administration in Ba Ria-Vung Tau Province, Vietnam"

Future Outlook for EIPs

Insights gained from the model industrial parks are being compiled into local EIP guidelines, with the aim of institutionalizing them in Ba Ria-Vung Tau Province (which has now been merged with Ho Chi Minh City). The EIP guidelines are expected to be adapted to other industrial parks nationwide in Viet Nam. We are also proposing improvements to incentive structures for EIP to encourage greater business participation.

Through collaboration with the Ministry of Finance (formerly MPI) and UNIDO, this initiative is expected to contribute to the broader dissemination of EIPs across Viet Nam.

In conclusion, EIPs are not merely about infrastructure—they represent a model of sustainable development involving collaboration among local governments, industrial park developers, tenant firms, and the surrounding local communities. Among Southeast Asian countries, Viet Nam has made notable progress in EIP.

For Japanese companies, many existing environmental initiatives may already align with EIP and Eco-enterprise principles. We encourage you to pay attention to EIPs, both in light of global and Vietnamese trends. If you have any questions or need further information, please do not hesitate to contact us.



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