GREEN TRADE POLICY AND THE DEVELOPMENT OF ECO-INDUSTRIAL PARKS IN VIETNAM: LESSONS FROM THE EU-VIETNAM FREE TRADE AGREEMENT (EVFTA)

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Abstract: ***This study examines the EU-Vietnam Free Trade Agreement (EVFTA) and its role in promoting eco-industrial park (EIP) development in Vietnam through Trade and Sustainable Development (TSD) provisions. Drawing on policy analysis and secondary data, it explores how EVFTA commitments create regulatory pressure, support institutional reform, and shape conditions for sustainable industrial upgrading. The study argues that the EVFTA may contribute to EIP development by strengthening environmental governance and encouraging more sustainability-oriented investment, although the available evidence does not allow a definitive causal claim.***

• Keywords: *eco-industrial parks, EVFTA, green trade policy, sustainable production, Vietnam, trade and sustainable development (TSD).*

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1. General Overview

Vietnam's industrialization has generated strong economic growth, but it has also created environmental pressures such as pollution, resource depletion, and higher vulnerability to climate change. In this context, eco-industrial parks (EIPs) have emerged as an important model for improving environmental, economic, and resource efficiency while supporting more sustainable industrial development. EIPs are communities of businesses that cooperate to reduce waste, share resources, and enhance collective value creation.

At the same time, the global trade landscape is changing as new-generation free trade agreements increasingly incorporate non-trade provisions, especially Trade and Sustainable Development (TSD) chapters. These provisions are designed to ensure that trade liberalization does not weaken environmental governance or labor standards. The EVFTA, which entered into force in August 2020, is a representative example of this trend and places stronger sustainability-related expectations on Vietnam.

Research Gap and Contribution: While existing literature has examined the EVFTA's trade effects, regulatory reform implications, and broader sustainable development outcomes in Vietnam, relatively few studies have focused on the specific link between EVFTA environmental commitments and EIP development. Prior research often discusses environmental governance at the national level or treats TSD provisions in general terms, but does not fully explain how trade policy may support industrial transformation through the EIP model. In addition, the relationship between EVFTA-related compliance pressure, investment signaling, and institutional change has not been sufficiently connected to EIP outcomes. This study addresses these gaps by analyzing how EVFTA TSD provisions may support EIP development in Vietnam through market access incentives, regulatory upgrading, and institutional reform. It also clarifies the mechanisms through which green trade policy may shape sustainable industrial development in the Vietnamese context.

Research Question: What mechanisms does the EVFTA employ to support eco-industrial park development in Vietnam? To address this question, the paper adopts a policy analysis approach and examines key provisions of the EVFTA alongside secondary data on trade, investment, and EIP development in Vietnam. By clarifying the relationship between green trade policy and sustainable industrial transformation, this research offers policy-relevant insights for Vietnam.

2. Theoretical Overview and Conceptual Framework

2.1. Eco-Industrial Parks

The concept of EIPs is grounded in industrial symbiosis, a model inspired by natural ecosystems. As defined by Chertow (2000), industrial symbiosis involves collaborative arrangements where the waste or by-products of one company are used as inputs by another, creating a closed-loop system that reduces waste and enhances resource efficiency. However, modern EIPs have evolved beyond this basic framework, becoming integrated development models that balance

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environmental, economic, and social goals. According to the International Framework for EIPs, developed by UNIDO, the World Bank, and GIZ, an industrial park can only be recognized as an EIP if it meets performance criteria across four core dimensions.

Firstly, industrial park management requires a professional governance structure capable of creating and enforcing regulations that support industrial symbiosis, with the management unit playing a key role in facilitating collaboration among firms and optimizing the park's overall performance. Environmental performance is another critical aspect, involving the optimization of resource use such as energy, water, and materials through strategies like closed-loop water recycling, renewable energy adoption, and centralized waste management, aiming to minimize greenhouse gas emissions and other environmental impacts. EIPs also emphasize social responsibility, ensuring a safe working environment, adequate employee welfare, compliance with international labor standards, and fostering positive relationships with local communities. Lastly, economic performance is essential, as EIPs must deliver tangible benefits to participating businesses. By sharing resources, firms can reduce costs, enhance competitiveness, and attract quality investment, creating a sustainable business ecosystem where economic, environmental, and social objectives are aligned.

Ultimately, a modern EIP should not be viewed merely as a collection of production facilities, but as a systematically governed, sustainable ecosystem that meets stringent environmental, social, and economic standards, enabling businesses to pursue sustainable development while integrating into global value chains.

2.2. Green Trade Policy and TSD Chapters in FTAs

Green trade policy refers to trade-related measures aimed at achieving environmental objectives. For decades, the relationship between trade and the environment has been a subject of intense academic and policy debate, particularly in the context of the pollution haven hypothesis and the Environmental Kuznets Curve (Copeland & Taylor, 2004). However, new-generation free trade agreements (FTAs) especially those negotiated by the European Union have increasingly incorporated Trade and Sustainable Development (TSD) chapters as a means to reconcile trade liberalization with environmental protection. TSD chapters typically include commitments to effectively implement Multilateral Environmental Agreements (MEAs), conserve biodiversity, combat climate change, and promote trade in sustainable products (Harrison et al., 2021). While the enforcement mechanisms of TSD chapters are often weaker than those of core trade provisions, they nonetheless establish an institutional framework for dialogue and monitoring. This creates substantial reputational and political pressure on the parties involved.

2.3. Conceptual Framework

This study draws on institutional theory and industrial symbiosis theory to explain how EVFTA may shape EIP development in Vietnam. At the macro level, EVFTA acts as an external institutional force that raises environmental standards and compliance pressure. At the meso level, industrial park governance responds by upgrading environmental infrastructure and monitoring systems. At the micro level, firms adjust production through cleaner technologies, resource efficiency, waste exchange, and collaboration. Through these channels, trade policy can facilitate the transition from conventional industrial parks to eco-industrial parks.

3. Research Methodology

This study adopts a qualitative case study approach, focusing on the relationship between the European Union-Vietnam Free Trade Agreement and sustainable development in Vietnam. This methodological choice allows for an in-depth and context-specific analysis of a complex phenomenon. The research design comprises two core components:

Policy Analysis: A central component of the study involves a detailed examination of Chapter 13 of the EVFTA, which addresses Trade and Sustainable Development (TSD). The analysis focuses on identifying and interpreting the specific commitments, legal obligations, and guiding principles related to environmental protection, natural resource management, and the promotion of sustainable production that Vietnam is required to fulfill. The aim is to clarify the mechanisms through which the EVFTA influences the formulation and implementation of environmental policies at the national level.

Secondary Data Analysis: To provide empirical grounding and support theoretical arguments, the study collects and analyzes secondary data from authoritative and reliable sources. The data used include:

- *Trade Data:* Bilateral trade flow data between the EU and Vietnam, extracted from international databases such as UN Comtrade and Eurostat, are analyzed to assess trends and structural shifts in trade following the entry into force of the EVFTA.

- *Investment Data:* Information on foreign direct investment (FDI) inflows from the EU to Vietnam is collected from reports by the United Nations Conference on Trade and Development (UNCTAD) and the General Statistics Office of Vietnam.

- *Eco-Industrial Park (EIP) Data:* Reports and datasets from international organizations such as UNIDO, along with national agencies such as Vietnam's Ministry of Planning and Investment, are utilized to evaluate the current status and development trajectory of EIPs in Vietnam.

All datasets are systematically compiled, analyzed, and visualized through tabular presentations and

graphical representations to facilitate a clear and comparative assessment of key trends, with particular emphasis on the shifts observed before and after the enforcement of the EVFTA.

4. Case Analysis: EVFTA and the Development of EIPs in Vietnam

4.1. Core Environmental Commitments under the EVFTA

The Trade and Sustainable Development (TSD) Chapter in free trade agreements exhibits distinct characteristics compared to traditional trade chapters. While its dispute settlement mechanism may differ, the TSD chapter remains legally binding and forms an integral part of the agreement text. This chapter establishes a Joint Committee on Trade and Sustainable Development and domestic advisory groups, thereby providing an institutionalized channel for dialogue, implementation review, and stakeholder input.

A critical feature of the TSD chapter is its requirement that Vietnam both adhere to and domestically institutionalize the international environmental and labor conventions to which it is a party—most notably the Paris Agreement on climate change and the core conventions of the International Labour Organization (ILO). These commitments present not only compliance challenges but also serve as catalytic incentives for strengthening Vietnam's governance capacity and reforming its environmental and labor policy frameworks, thus fostering a more inclusive and sustainable development paradigm.

Importantly, the TSD provisions transcend rhetorical commitments by establishing a binding legal architecture that mandates the translation of agreed principles into actionable policies. Their significance lies in the creation of reciprocal oversight mechanisms, which ensure that the advantages of market access are matched by corresponding obligations in the social and environmental domains. Fundamentally, this framework aims to deter a "race to the bottom" in which states might otherwise dilute regulatory standards to gain short-term competitive advantages.

The specific obligations under the TSD Chapter are summarized in Table 1.

The environmental commitments enshrined in the EVFTA are not merely declarative provisions on paper but constitute a binding international legal framework that requires Vietnam to undertake a comprehensive upgrade of its environmental governance system. This framework facilitates a shift from a traditional, reactive model of environmental management to a more modern and effective regulatory approach. Compliance with these commitments necessitates a range of systemic reforms in Vietnam, including legal framework enhancement, enforcement capacity building, and transparency promotion.

Table 1: Key Environmental Commitments under the EVFTA TSD Chapter

Policy Area	Key Commitments	Relevant Provisions
General Governance	- Refrain from weakening or failing to enforce environmental laws to attract trade or investment. - Promote public and civil society participation.	Articles 13.3, 13.14
Climate Change	Effectively implement the UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.	Article 13.5
Biodiversity	- Effectively implement the Convention on Biological Diversity (CBD). - Combat illegal wildlife trafficking and trade.	Article 13.6
Sustainable Forestry	- Promote sustainable forest management and combat illegal logging. - Implement the VPA/FLEGT Agreement.	Article 13.7
Sustainable Fisheries	- Apply a precautionary and ecosystem-based approach. - Combat IUU (illegal, unreported, and unregulated) fishing.	Article 13.8
Trade Promotion	- Encourage trade and investment in environmental goods and services. - Promote eco-labeling and fair trade initiatives.	Article 13.4

Source: Compiled from the EVFTA Agreement Document (European Commission, 2019).

These systemic reforms have immediate and far-reaching implications for concentrated production zones, particularly industrial parks. Enterprises of all sizes can no longer operate under lax environmental standards. Compliance pressures are mounting from two directions: legal obligations and market expectations. Industrial parks and factories must adhere to stricter regulations on waste treatment, resource recycling, and pollution control to avoid sanctions. Simultaneously, to maintain access to the European Union one of the most demanding markets in terms of sustainability standards Vietnamese enterprises must meet stringent requirements related to sustainable production.

This dual pressure creates powerful incentives for firms to invest in green technologies and improve their production processes. Within this context, transitioning to the EIPs model is no longer a voluntary initiative, but a strategic imperative. EIPs provide a viable solution for industrial zones to simultaneously fulfill the legal requirements set forth by the EVFTA and meet international market expectations, thereby ensuring long-term sustainability and competitiveness.

4.2. The Impact of the EVFTA on the Development Drivers of Eco-Industrial Parks

The EVFTA influences the development of EIPs in Vietnam through three main mechanisms, as outlined below:

a. Pressure from EU Market Standards

In the context of deep international economic integration particularly following the enforcement of the EVFTA-Vietnamese enterprises are increasingly confronted with more stringent requirements from international markets. Among these, the pressure to comply with EU market standards acts as a powerful driver for the transition toward sustainable production models. The European Union, known as one of the strictest markets globally in terms of sustainability requirements, has demonstrated its strong commitment through ambitious policies such as the European Green Deal. These policies extend beyond the EU's internal boundaries, directly affecting its trading partners.

One notable example is the Carbon Border Adjustment Mechanism (CBAM), a policy tool designed to impose carbon tariffs on imported products. This mechanism exerts significant pressure on Vietnamese exporters, particularly those in key sectors such as textiles, footwear, furniture, and agriculture. To gain and retain access to this demanding market, Vietnamese firms must adapt their production methods to comply with environmental protection standards, enhance energy efficiency, and adopt responsible chemical management practices.

In this context, the eco-industrial park model emerges as a strategic solution. With infrastructure designed to support cleaner production and specialized services for environmental and resource management, EIPs offer an ideal platform for enterprises to address these challenges. Firms operating within EIPs are better positioned to meet the EU's strict standards, reduce production costs, improve competitiveness, and cultivate a sustainable brand image in the eyes of global consumers.

b. Attraction of Foreign Direct Investment

The EVFTA, through its strong commitments to transparency and sustainable development, has contributed to improving Vietnam's investment environment. This may reinforce investor confidence and create more favorable conditions for sustainability-oriented capital flows, including those from Europe.

Figure 1: Implemented Foreign Direct Investment in the first 7 months of 2021-2025 (Billion USD)

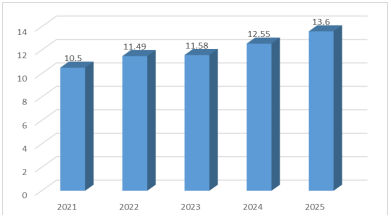

Figure 1 illustrates the trend of implemented foreign direct investment in Vietnam over the first seven months of 2021–2025. The figure suggests that Vietnam has continued to attract substantial FDI inflows, though the available data do not by themselves isolate the direct effect of the EVFTA on the volume or composition of European investment.

Central Institute for Economic Management, 2025

Table 2 provides a breakdown of newly licensed investment by country and territory in YTD 2025. The table shows that the largest sources of newly licensed investment are Singapore, China, and Sweden, among others, indicating that Vietnam continues to receive diversified FDI from both regional and non-regional partners. Among European investors, Sweden appears in the list, but the dataset does not allow a definitive conclusion that EVFTA has generated a broad-based surge in EU-origin FDI.

Table 2: Newly Licensed Investment by Country & Territory (YTD 2025)

Country / Territory	Registered Capital (Billion USD)	Share (%)
Singapore	2.84	28.30%
China	2.27	22.60%
Sweden	1	10.00%
Japan	0.87	8.60%
Taiwan	0.74	7.30%
Hong Kong (China)	0.72	7.20%
British Virgin Islands	0.32	3.20%

Central Institute for Economic Management, 2025

According to data from the Central Institute for Economic Management (2025), the Manufacturing and Processing sector remains the dominant contributor to registered FDI, attracting a total of 12.12 billion USD, which accounts for 60.60% of the total registered capital. The Real Estate Business sector ranks second, with 4.95 billion USD, representing 24.70% of the total FDI. The Other Sectors category accounted for 2.94 billion USD, or 14.70% of the total. This distribution underscores the continued dominance of the manufacturing sector in Vietnam's FDI landscape, while other industries, despite showing growth, still constitute a relatively smaller share of the total investment.

The available data also show that Vietnam continues to attract investment from a range of countries and territories. Among European investors, Sweden appears in the list of newly licensed investment sources, suggesting that European capital is present, although the dataset does not allow a definitive conclusion that EVFTA has generated a broad-based surge in EU-origin FDI.

The EVFTA, with its strong emphasis on transparency and sustainable development, may contribute to improving Vietnam's broader investment climate. This, in turn, can support investment in sectors relevant to eco-industrial development. However, the current data do not directly confirm that the incoming capital is uniformly "high-quality" or "green," so such claims should be stated cautiously or supported by additional evidence.

c. Strengthening Institutional and National Governance Capacity

To meet the stringent requirements set forth in the EVFTA, the Vietnamese government has undertaken an important institutional reform agenda. These reforms extend beyond trade-related provisions to encompass the legal and regulatory frameworks governing environmental protection. In particular, the EVFTA has contributed to the review and amendment of several domestic legal documents. The most notable outcome of this process is the Law on Environmental Protection 2020, which, for the first time, formally incorporated the concept of the circular economy into Vietnam's legal system thereby laying a legal foundation for the development of sustainable production models.

Furthermore, to ensure transparency and accountability in the implementation of Trade and

Sustainable Development (TSD) commitments, the EVFTA mandates the establishment of a Domestic Advisory Group (DAG). This group comprises representatives from civil society organizations, business associations, and research institutions. The formation of the DAG has institutionalized a formal channel through which stakeholders can participate in the monitoring and evaluation of environmental policies, thereby enhancing the effectiveness and substantive quality of environmental governance.

These institutional developments are significant for EIP promotion because they strengthen the regulatory and coordination environment in which industrial parks operate. More coherent environmental rules, greater policy transparency, and participatory oversight create stronger incentives for industrial zones and firms to comply with environmental standards and to adopt cooperative resource management practices. In this sense, EVFTA does not directly create EIPs, but it helps establish the governance conditions under which EIPs are more likely to emerge and scale up.

d. EVFTA and the Development of Eco-Industrial Parks

The EVFTA's commitments particularly those aimed at raising environmental standards and encouraging more sustainable investment have created a growing demand for modern and environmentally friendly production zones. As a result, models such as EIPs are increasingly seen as important options for maintaining and enhancing industrial competitiveness. These dynamics enable Vietnam to leverage FTAs more effectively in supporting its transition toward a green and sustainable economy.

Institutional reforms have laid a solid foundation for scaling up sustainable development initiatives such as EIPs. As of 2024, Vietnam has launched five pilot EIPs under a joint project with the United Nations Industrial Development Organization (UNIDO) and the Ministry of Planning and Investment (UNIDO & MPI, 2023). The country's long-term goal is to replicate the EIP model nationwide in accordance with the National Strategy for Eco-Industrial Park Development (Prime Minister of Vietnam, 2021). The EVFTA can be understood as one policy factor supporting this transformation by reinforcing the domestic policy environment for sustainable industrial upgrading.

Taken together, the EVFTA influences EIP development in Vietnam through a combination of external market pressure, institutional reform, and investment signaling. However, the extent of this influence should be interpreted cautiously, as the available data are primarily indicative and do not isolate the agreement's direct causal effect on EIP outcomes.

5. Discussion and Conclusion

Policy Implications for Vietnam: Drawing on Vietnam's implementation of the EVFTA, several policy implications emerge for advancing sustainable industrial development:

Implication 1: Leverage TSD chapters

The EVFTA's TSD provisions, including Domestic Advisory Groups (DAGs), help create compliance pressure and strengthen sustainability commitments. Vietnam should institutionalize these mechanisms to improve environmental enforcement and support EIP governance.

Implication 2: Use trade liberalization to upgrade standards

Access to EU markets can turn stringent environmental requirements into developmental benchmarks. Vietnam can position EIPs as practical platforms for meeting EU Green Deal requirements, including CBAM-related pressures.

Implication 3: Shift FDI policy toward quality

European investment associated with the EVFTA may support technology spillovers and better management practices. Vietnam should develop ESG screening criteria and promote EIPs to investors with stronger sustainability preferences, while recognizing that stronger project-level evidence is still needed to assess FDI quality directly.

Implication 4: Institutionalize stakeholder participation

DAGs can enhance transparency and accountability in the implementation of sustainability commitments. Vietnam should therefore expand multi-stakeholder oversight to strengthen EIP monitoring and policy coordination.

Conclusion: The EVFTA may support Vietnam's transition toward sustainable industrial models like EIPs through market pressure, investment signaling, and institutional modernization. This Vietnam-focused case study highlights trade policy's potential role in supporting green industrial transformation and addresses the limited literature linking TSD commitments to EIP outcomes. By embedding sustainability in trade strategies, Vietnam may strengthen its transition toward a more competitive green economy.

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