

# WIRARAJA INDONESIA'S STRATEGY IN ATTRACTING FOREIGN INVESTMENT IN THE RENEWABLE CLEAN ENERGY SECTOR IN THE BATAM FREE TRADE ZONE AND FREE PORT (KPBPB)

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**Abstract.** This research aims to analyze the strategies implemented by Wiraraja Indonesia in attracting foreign investment in the renewable energy sector within the Batam Free Trade Zone and Free Port (KPBPB Batam) using The Eclectic Paradigm. The background of this study is based on the urgent need to develop renewable energy industries to support the transition towards sustainable development, aligned with the Sustainable Development Goals (SDGs), particularly SDG 7 (affordable and clean energy) and SDG 13 (climate action). Despite Batam's reputation as a manufacturing and logistics hub, the contribution of renewable energy industries in the region remains relatively limited, necessitating strategic efforts to increase foreign investor interest in this sector. This research employs a qualitative approach with a case study method. Data were collected through in-depth interviews with relevant stakeholders, including the management of Wiraraja Indonesia, BP Batam as the regulatory authority, as well as documentation and field observation. The results indicate that Wiraraja Indonesia's key strategies in attracting foreign investors include providing clean and clear industrial land, offering integrated licensing services that reduce transaction costs, and promoting the industrial area both independently and in collaboration with government entities. Furthermore, these strategies are supported by Batam's comparative advantages, such as its strategic location along international shipping routes, adequate infrastructure, and fiscal incentives. However, the study also reveals significant challenges, including limited available land for industrial expansion, complex technical licensing processes centralized at the national level, and potential political conflicts of interest between local political actors and industrial estate managers. Mitigation efforts include enhancing licensing transparency through the OSS/IBOSS system and strengthening synergy between the government, private sector, and related institutions. The study concludes that adaptive, partnership-based, and sustainability-oriented investment strategies are essential for attracting foreign investment in the renewable energy sector in KPBPB Batam.

**Keywords:** Foreign Investment, Renewable Energy, KPBPB Batam, Wiraraja Indonesia, International Business Strategy.

## 1 Introduction

Indonesia, as the world's largest archipelagic state, possesses vast potential to attract foreign direct investment (FDI), particularly in the renewable energy sector. The country's strategic geographic position, abundant natural resources, and growing energy demand make it a prime candidate for green investment, especially in the pursuit of Sustainable Development Goals (SDGs), notably SDG 7 (affordable and clean energy) and SDG 13 (climate action) [1] [2].

Among the most dynamic investment hubs in Indonesia is Batam, which lies within the Free Trade Zone and Free Port Area (KPBPB). Batam is positioned along the international shipping route of the Malacca Strait and South China Sea, making it an ideal location for export-oriented industrial development. Historically focused on manufacturing and shipbuilding, the city is now at a pivotal point for diversifying its industrial base to include renewable energy technologies [3].

Despite its advantages, the renewable energy sector in Batam remains underdeveloped. The dominance of traditional industries such as electronics and shipbuilding has limited the growth of sustainable sectors. Most FDI in Batam is still concentrated in non-renewable manufacturing, which underscores the need for a strategic shift.

This study focuses on Wiraraja Indonesia, a prominent private developer operating in the KPBPB Batam area, which has initiated efforts to attract green investments through the development of Wiraraja Industrial Park. This park has been designed to host advanced industries such as polysilicon refining, solar module manufacturing, and energy storage systems, backed by strategic incentives and partnerships [4].

To analyze the strategic positioning of Wiraraja Indonesia in attracting foreign investors, this study adopts the Eclectic Paradigm (OLI Framework) proposed by Dunning, which emphasizes the role of ownership-specific advantages, location-specific advantages, and internalization strategies [5]. This model is the evolution of the big theory of comparative advantage and supported by the concept of liability of foreignness to examine how local actors manage institutional, political, and cultural challenges when facilitating FDI in emerging green sectors [6] [7]. This research utilizes a qualitative case study approach, including interviews with key stakeholders, field observations, and document analysis. It aims to provide practical insights for policymakers, industrial estate

managers, and international investors, while also contributing to academic discourse on sustainable investment strategies in special economic zones.

## **2 Method**

This study employs a qualitative research approach to explore the strategies adopted by Wiraraja Indonesia in attracting foreign direct investment (FDI) in the renewable energy sector within the Batam Free Trade Zone and Free Port Area (KPBPB Batam). A qualitative approach is considered appropriate for analyzing complex social phenomena, particularly those involving institutional dynamics, investment behavior, and policy implementation [8].

The research design is based on a single case study method, enabling an in-depth examination of Wiraraja Indonesia as a strategic actor in promoting renewable energy investments. This method is well-suited for understanding the interplay between various stakeholders, regulatory frameworks, and infrastructural conditions specific to the Batam industrial ecosystem.

Primary data were collected through semi-structured interviews with key informants, including representatives from Wiraraja Indonesia and officials from the Batam Indonesia Free Zone Authority (BP Batam). These interviews aimed to gather insights into strategic planning, regulatory challenges, and investment facilitation practices. Field observations and on-site visits were also conducted to assess physical infrastructure and project implementation on location.

Secondary data were obtained through document analysis, including investment reports, corporate communications, government regulations, and previous academic literature related to FDI and green energy transitions in Southeast Asia.

The data were analyzed using a thematic analysis framework. This involved identifying patterns, coding concepts, and categorizing themes in line with the research objectives. An iterative cycle of data reduction, interpretation, and triangulation was applied, following the guidance of Miles and Huberman [9]. Triangulation helped validate findings by cross-checking results across different sources and stakeholders.

This methodology provides a contextual understanding of how a private-sector actor leverages comparative advantages and institutional partnerships to attract foreign investors in the clean energy industry within a semi-autonomous economic zone.

## **3 Results and Discussion**

### **3.1 The Role of BP Batam as Regulatory Facilitator**

Batam's designation as a Free Trade Zone and Free Port is governed by the Batam Indonesia Free Zone Authority (BP Batam), which plays a pivotal role in facilitating investment by managing industrial permits, land allocation, and infrastructure development. BP Batam offers streamlined procedures through the OSS/IBOSS system and provides fiscal incentives such as tax holidays and import duty exemptions. These mechanisms aim to enhance investor confidence, particularly in high-tech and energy sectors.

However, despite these reforms, overlapping authority between BP Batam and the Batam municipal government has created bureaucratic complexities that hinder seamless investment flows. Studies highlight that limited institutional synergy has led to inefficiencies in licensing and inconsistent policy implementation, posing risks to investor certainty [10].

### **3.2 Strategic Approaches by Wiraraja Indonesia**

Wiraraja Indonesia has positioned itself as a key enabler in developing a renewable energy ecosystem by initiating the Wiraraja Industrial Park in Kabil. The firm's core strategies include:

1. Provision of investment-ready land: Clear land titles and absence of legal disputes significantly reduce entry barriers for foreign firms.
2. Integrated licensing support: Wiraraja offers investors assistance in navigating regulatory requirements, working in parallel with BP Batam to expedite permits.
3. Targeted investment promotion: The company engages in both independent marketing campaigns and partnerships with government trade missions to attract investors from Asia, Europe, and the Middle East.
4. Cluster-based development: The industrial park supports value chain integration, housing facilities for polysilicon refining, solar panel assembly, and green data centers.

These strategies align with the Eclectic Paradigm by leveraging ownership-specific advantages (technical expertise and capital access), location-specific advantages (strategic proximity to Singapore and regional hubs), and internalization mechanisms (direct operation of facilities rather than outsourcing).

### **3.3 Liability of Foreignness**

Despite strategic initiatives, significant barriers persist. One of the most pressing challenges is land scarcity for industrial expansion, driven by rapid urbanization and fragmented land governance in Batam. In addition,

technical licensing for renewable energy projects remains centralized at the national level, requiring prolonged coordination between local developers and central ministries.

Another challenge is the liability of foreignness, as foreign firms face high adaptation costs due to unfamiliar regulatory frameworks, local political dynamics, and potential conflicts of interest. A notable example is the complex relationship between Wiraraja Indonesia and BP Batam leadership, which could potentially affect project coordination and investor perception.

To address these issues, transparency initiatives such as the implementation of OSS/IBOSS systems—have been enhanced, and multi-stakeholder forums involving government, industry associations, and investors have been introduced to improve coordination. Nevertheless, ongoing structural reforms are required to ensure long-term investor confidence.

### 3.4 Implications for Sustainable Investment Strategy

The findings reinforce that a successful FDI attraction strategy in emerging renewable sectors requires more than incentives; it must include institutional alignment, adaptive governance, and long-term partnership models. The case of Wiraraja Indonesia illustrates how private actors can assume developmental roles traditionally dominated by public agencies, provided they align with global sustainability norms and local regulatory frameworks.

This supports the argument that green FDI should be driven not just by economic returns but by strategic alignment with the host country's energy transition goals and international climate commitments [11].

## 4 Conclusion

This study has explored the strategic initiatives undertaken by Wiraraja Indonesia in attracting foreign direct investment (FDI) within the renewable energy sector of the Batam Free Trade Zone and Free Port (KPBPB Batam). Through a qualitative case study approach, the research highlights how a private industrial actor can leverage local comparative advantages—such as geographic location, infrastructure readiness, and fiscal incentives—to build an investment-friendly ecosystem for clean energy industries.

Wiraraja Indonesia's strategies include the provision of legally clear industrial land, integrated licensing support, and proactive investment promotion. These efforts are consistent with the principles of the Eclectic Paradigm, particularly in optimizing ownership, location, and internalization advantages. In doing so, the company not only attracts capital but also facilitates the transfer of green technology and contributes to Indonesia's broader sustainability agenda.

Despite these advances, several structural and institutional challenges remain. These include land availability constraints, bureaucratic complexities at the national level, and political frictions between local actors and regulatory authorities. The study emphasizes that resolving such issues requires continuous institutional reform, improved inter-agency coordination, and transparent governance mechanisms.

Importantly, the case of Wiraraja Indonesia illustrates the evolving role of private sector actors as drivers of sustainable industrial development in special economic zones. Their ability to forge public-private partnerships, align with national energy goals, and address the liability of foreignness determines the long-term success of green FDI in emerging markets like Batam.

Future research could build on this study by conducting comparative analyses between industrial zones in Indonesia or across Southeast Asia to further examine the replicability of such strategies. Policymakers are also encouraged to strengthen cross-sectoral collaboration, streamline technical licensing procedures, and promote regulatory certainty to support a just and inclusive energy transition.

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