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# ATTRACTING GREEN FDI IN VIETNAM - CURRENT SITUATION AND SOLUTIONS

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## ABSTRACT

Green growth is currently a prevailing trend in the global economic landscape. As a developing nation, Vietnam's goal of attracting Foreign Direct Investment (FDI) is focused on various sectors, including high technology, innovation, research and development, green economy, digital economy, circular economy, and clean energy. This trend, along with practical challenges that have arisen over the 35 years of FDI attraction in Vietnam, has been incorporated into numerous policies and national strategies related to green growth and climate change adaptation. This article analyzes the concept, necessity, and content of attracting green FDI, as well as the current situation of attracting both FDI and green FDI in Vietnam. It does so from two perspectives: (i) FDI projects in environmental products and services, and (ii) FDI projects utilizing clean energy or having low energy consumption. Based on this analysis, the authors propose several solutions to enhance the effectiveness of attracting green FDI in Vietnam..

## KEYWORDS

FDI, Green FDI, Vietnam, current situation, solutions.

## 1. Identify the issues

Foreign Direct Investment (FDI) is a significant source of financial resources and technology transfer for economic development in all countries, especially in developing nations (Golub, S. et al., 2011). With appropriate policy frameworks, FDI can bring financial stability, boost economic development, and enhance societal prosperity (OECD, 2008). According to the Ministry of Planning and Investment., (2023), by the end of 2022, the total newly registered capital, adjusted capital, and capital contribution and share purchase by foreign investors reached nearly USD 27.72 billion, an increase of 89% compared to the same period in 2021. The realized capital of foreign investment projects is estimated to reach nearly USD 22.4 billion, an increase of 13.5% compared to the same period in 2021. As of the end of 2022, there were 36,278 active projects nationwide with a total registered capital of nearly USD 438.7 billion, and the accumulated realized capital of foreign investment projects is estimated to reach nearly USD 274 billion. Investors from 41 countries and territories have invested in Vietnam, with foreign investors present in all 63 provinces and cities nationwide (TopDev, 2022).

WithVietnam'seconomy, Foreign Direct Investment (FDI) is a form of international financial flows that is increasingly playing a crucial role in economic development and has significant social and environmental impacts in both positive and negative directions (Huyen, B., T., 2018). Despite impressive results in attracting FDI, the practice is facing challenges in the context of climate change and environmental pollution (Duong, P., T., T., 2022). Statistics prior to 2021 indicate that the current situation reveals that only 5% of foreign-invested enterprises (FDI) in Vietnam are high-tech, while 80% are medium-tech, and 15% are low-tech (Mai, N., 2023). FDI has also revealed certain limitations, including environmental pollution issues (Ngoan, P., T., 2019). According to the 2022 annual report by Yale University on the Environmental Performance Index (EPI), Vietnam currently ranks 178th out of 180 countries, ranking only higher than Myanmar and India (Yale University, 2022). Vietnam's per capita greenhouse gas emissions ($N_2O$, $CH_4$, $CO_2$, and other gases) in 2019 (calculated in terms of $CO_2$ emissions) were 420,630 Gg, higher than several Southeast Asian countries such as Malaysia, Laos, Cambodia, and many developed countries like Singapore and Japan. Regarding waste recycling, Vietnam falls into the category of countries using outdated waste treatment technologies, with the lowest recycling rate (only 54% of waste recycled in 2020) compared to many other developing nations like Indonesia, Cambodia, Cuba, and East Timor (Yale University, 2022).

While, research by Khan et al. (2019) on the factors influencing the investment decisions of foreign investors shows that the quality of the living environment affects the health of laborers and increases labor productivity. High labor productivity and low labor costs provide the basis for foreign investors to choose to invest. Furthermore, in today's modern business environment, many foreign businesses aspire to build an image and demonstrate social responsibility by considering environmental factors when making investment decisions (Kim & Rhee, 2019). Moreover, maintaining a good environmental quality in a country is sometimes a signal of innovation in technology or resource management practices, business processes that foreign investors can apply to enhance their business efficiency. Therefore, Vietnam is shifting its strategy and policies to attract a new generation of FDI, known as "green FDI" or "sustainable FDI" (Loan, N. T., N., 2019). Energy transition and carbon reduction are the top priorities of the Vietnamese government to ensure economic development alongside environmental protection and climate change adaptation.

Green growth is currently a global economic development trend, encompassing various sectors worldwide (Tu, D., T., T., et al., 2020). This includes a global increase in Foreign Direct

Investment (FDI) inflows focused on high technology, innovation, research and development, green economy, digital economy, circular economy, and clean energy sectors. This trend, along with practical issues arising after 35 years of FDI attraction, has been concretized by Vietnam in various national policies and strategies for green growth and climate change adaptation: the National Green Growth Strategy for the period 2021-2030, with a vision to 2050. Resolution 50-NQ/TW of the Politburo on orienting the improvement of the foreign investment regime, policies, and enhancing the quality and effectiveness of foreign investment cooperation until 2030 has been issued, demanding research and changes in the way foreign direct investment (FDI) is reviewed, selected, and encouraged in the direction of green growth. At the United Nations Climate Change Conference (COP26) in 2021, Prime Minister Pham Minh Chinh committed that Vietnam would strive to achieve net-zero emissions by 2050.

This reflects a strong commitment and strategic vision of the Vietnamese government to the international community on green growth. This is a challenging goal because sustainable development does not sacrifice social equity, does not pursue pure growth, but also addresses social welfare and environmental issues, focusing on people as the goal, the subject, the center, the driving force, and the resource for development. Therefore, green growth, green investment, and green FDI are issues of concern in attracting foreign investment (FDI) in Vietnam. In this article, the author conducts research on the current situation and solutions for attracting green FDI in Vietnam. The article aims to answer the following questions: “What criteria define green FDI? What solutions can attract green FDI? What challenges must be faced in absorbing green FDI, and what are the corresponding solutions?”

## 2.Theoretical Basis, Research overview and Models

### *2.1. Some Relevant concepts of FDI*

*Definition of FDI*

Foreign Direct Investment (FDI) is an important source of supplementary investment for development, contributing to improving the efficiency of domestic resource utilization and promoting the domestic economy.

According to the World Trade Organization (WTO, 2008), *“Foreign Direct Investment (FDI) occurs when an investor from one country (the investingcountry) acquires an asset in another country (the attracting investmentcountry) along with the right to manage that asset”.* In this perspective, the WTO uses the management aspect to differentiate FDI from other financial instruments. In most cases, both the investor and the assets managed abroad are business entities. In such cases, the investor is often referred to as the “parent company”, and the assets are referred to as “subsidiaries” or “branch companies”.

In 2012, UNCTAD, the widely-used statistical authority on FDI, defined *FDI as “long-term investment reflecting the interests and long-term control of a foreign direct investor residing in one economy in an enterprise residing in another economy”.* This investment is made through the establishment of economic entities, equity investment, share acquisition, sufficient capital contribution to gain operational control, or through contractual arrangements or project implementation. According to this perspective, FDI represents long-term investments made by individuals or companies from one country into another country through various means, involving the production, business, and direct management of these business entities.

According to OECD (2008), *FDI refers to investments made by an individual or a multinational enterprise from one country with the aim of establishing long-term benefits (ownership* *or control rights) in an enterprise located in another country*. In this definition, OECD sets a minimum equity ownership threshold of 10% of ordinary shares as the criterion for considering a business as FDI. In practice, not all countries use the 10% threshold as the determinant of FDI.

In Vietnam, according to the Investment Law No. 67/2014/QH13: *"Foreign investment means the capital in cash and other lawful assets that foreign investors bring into Vietnam for investment activities" (National Assembly, 2014).*

*Green FDI*: Green FDI is a subset of green investment. Attracting green FDI is expected to bring potential contributions to green growth and sustainable development in a world vulnerable to various threats (Sauvant and Mann, 2020). Attracting green FDI involves policies, activities, promotion, support, and encouragement of investors to invest capital for sustainable purposes.

UNCTAD (2008) mentions to two types of green FDI: (1) Investment by foreign direct investors that comply with national environmental standards; (2) Investment in the direct production of environmentally friendly products and services in the host country. UNCTAD (2010) emphasizes that some factors within green FDI include (i) low-carbon products and services and (ii) low-carbon processes.

The World Bank (2010) defines green FDI as investments in the production, business, and use of energy-saving or renewable materials or replacements.

According to Golub et al., (2011); Green FDI is understood in two aspects:

(*i) FDI projects focused on the production of environmental goods and services, addressing environmental issues*. FDI in the development of environmental goods and services is an important solution to reduce air, land, and water pollution by reducing emissions of pollutants during production in the host country (Mutrap, 2016). These projects are further classified into two types: goods (mainly equipment) and services. In which, services account for about 65% of the value-added in the environmental sector. This classification is only relative; for example, the technology of water treatment plants falls under environmental services, but the provision of these services often involves related equipment (goods) (Sawhney&Aparna, 2003).

*(ii) FDI projects using clean or energy-efficient technologies*. According to OECD (2011), FDI projects using clean or energy-efficient technologies are classified as follows:

**Table 1. Types of FDI Using Clean Energy or Low-Energy Consumption**

| **Types of FDI** | **Details of Clean Energy Use or Low-Energy Consumption** |
|---|---|
| Investment in production processes to reduce greenhouse gas emissions | Energy-efficient production processes<br>Processes and equipment for reducing greenhouse gas emissions<br>Use of green technology in construction |

| | |
|---|---|
| Investment in clean energy | Solar energy<br>Wind energy<br>Hydroelectric power production<br>Geothermal energy |
| Investment in research and infrastructure for producing products that reduce greenhouse gas emissions (Greenhouse Gases – GHG) and related products | Energy efficiency and recycling research<br>Production of solar panels, wind turbines<br>Production of energy-efficient products such as electric cars, energy-saving light bulbs<br>Technology services<br>Waste disposal services |

*Source: Golub, SS, C. Kauffmann &P. Yeres (2011*)

The IMF report by Eyraud et al., (2011) suggests that green FDI is essential for reducing greenhouse gas effects and air pollution without significantly compromising the production and consumption of energy or non-energy goods.

In Vietnam, there is currently no distinct definition of green FDI. However, in the National Strategy for Green Growth for the period 2011-2020 and the vision until 2050, definitions for green technology and green products have been provided. According to a study by Ngoc L., T., H., (2020), green FDI refers to foreign direct investment in the production of environmental products and services or foreign direct investment with production processes that minimize environmental harm. Its purpose is to promote economic development while using resources sensibly, preventing environmental damage, climate change, and ecological imbalances in the attracting investmentcountry.

Synthesizing and building upon the definitions of green FDI, in this research, green FDI mentionsto investments that benefit the environment, have low carbon emissions, and primarily fund projects in renewable energy, clean technology, environmental technology, or markets related to sustainability and climate change. Potential sectors where green FDI can be involved include renewable energy, agriculture, forestry, waste management, water treatment, carbon emissions trading markets, and more. Two aspects used to classify green FDI in this article are: (i) Projects focusing on the production of environmental goods and services, addressing environmental issues, and (ii) Projects using clean energy or having low energy consumption (Golub, SS, C. Kauffmann, and P. Yeres, 2011).

## 2.2. The necessity of attracting Green FDI

Some previous studies on the role of FDI have highlighted various positive aspects. FDI not only provides additional sources of capital but also brings advanced technology, modern management practices, and the creation of new industries and products to host countries. Therefore, it contributes to the efficient utilization of domestic resources and promotes positive structural shifts in the economy. When considering the scale and growth of FDI globally and in developing countries like Vietnam, FDI indeed represents a significant financial resource (Buchner et al, 2011).

However, FDI has also raised several negative issues that affect the sustainability of growth and the quality of life, including environmental pollution and outdated technologies. These challenges necessitate a shift towards a sustainable growth model and environmental protection, which is where green FDI comes into play.

Most studies on the necessity of green FDI in the world focus on the role of green FDI in reducing climate change (Golub, SS, C. Kauffmann, and P. Yeres, 2011). Additionally, green FDI facilitates the transfer of cleaner or more environmentally friendly technologies (Gallagher & Zarky, 2007). The flow of green FDI actively selects sectors, industries, or recipient countries for investment with a green perspective, subsequently influencing domestic businesses. Green FDI aims to change the investment structure towards sectors affecting climate change and environmental pollution, including agriculture, forestry, mining, manufacturing, energy, transportation, and construction (Corfee-Morlot, et al., 2009). *Multinational corporations and large-scale companies that invest FDI tend to pay more attention to environmental issues and adhere to higher environmental standards in host countries* (Johnstone, 2007). Green FDI has the potential to strongly promote sustainable economic development while aligning with environmental protection and ensuring economic and social benefits for all stakeholders. In terms of economic benefits, the policies to attract green FDI by the host country create favorable conditions for foreign investors to conduct production and business activities, reduce production costs, and generate profits during the investment process. Thanks to that, the recipient country is better positioned to implement welfare and social equity policies, eradicate poverty, address unemployment, increase income, enhance the quality of education, and raise the level of public awareness.

In Vietnam, beside the reasons mentioned above, green FDI aligns with the government's goal of achieving net-zero emissions by 2050. Vietnam provides favorable conditions for attracting green FDI, including (i) institutional and policy conditions that prioritize clean energy projects and renewable energy, (ii) conditions about the FDI absorbability including natural resources such as extensive coastlines and a favorable climate, which are conducive to renewable energy projects. Green energy projects often require substantial initial capital investment, making them suitable for large-scale enterprises such as FDI companies (Ministry of Planning and Investment, 2022). Moreover, consumer trends in Vietnam have shifted, with consumers now not only caring about product quality but also the environmentally friendly production processes (Ngoc L., T., H., 2020). Therefore, attracting green FDI in Vietnam is both theoretically and practically appropriate.

## 3. Research methodology

*Data collection method:*

The research team use literature review methodology to systematize the theoretical foundations of FDI, green FDI, policies for attracting green FDI, the necessity of attracting green FDI in general, and specifically for Vietnam. This approach also included an examination of the criteria and indicators for identifying and classifying green FDI projects and legal regulations serving as the basis for attracting green FDI.

The review covers theories and research on FDI, green FDI, and related studies on sustainable FDI, green investments, and green growth. The research team selected relevant studies from databases such as Scopus, OECD online library, UNCTAD, specialized journals, and a sample of 37 articles published between 2007 and 2023. The primary observations were analyzed by theme and synthesized through narrative analysis.

To assess the current situation of attracting green FDI in Vietnam, the research team focused on the following aspects: the current state of FDI attraction, the current state of attracting green FDI in two dimensions, namely (i) projects focusing on the production of environmentally friendly goods and services, addressing environmental issues, and (ii) projects using clean energy or consuming less energy. The study also examined the performance of green FDI enterprises and the environmental impact, job creation, and spillover effects on domestic enterprises.

To evaluate the current situation, the article collected data on the number of FDI and green FDI projects and the outcomes of green FDI activities. Data were gathered from domestic and international scientific journals, the Foreign Investment Agency - Ministry of Planning and Investment, reports from the General Statistics Office, and current legal documents related to foreign investment attraction activities. The research team compiled and selected relevant information from the gathered data, using descriptive statistical methods to clarify the current situation. Additionally, synthesis and analysis methods were employed to compare and contrast legal regulations, results, and limitations in attracting green FDI in Vietnam.

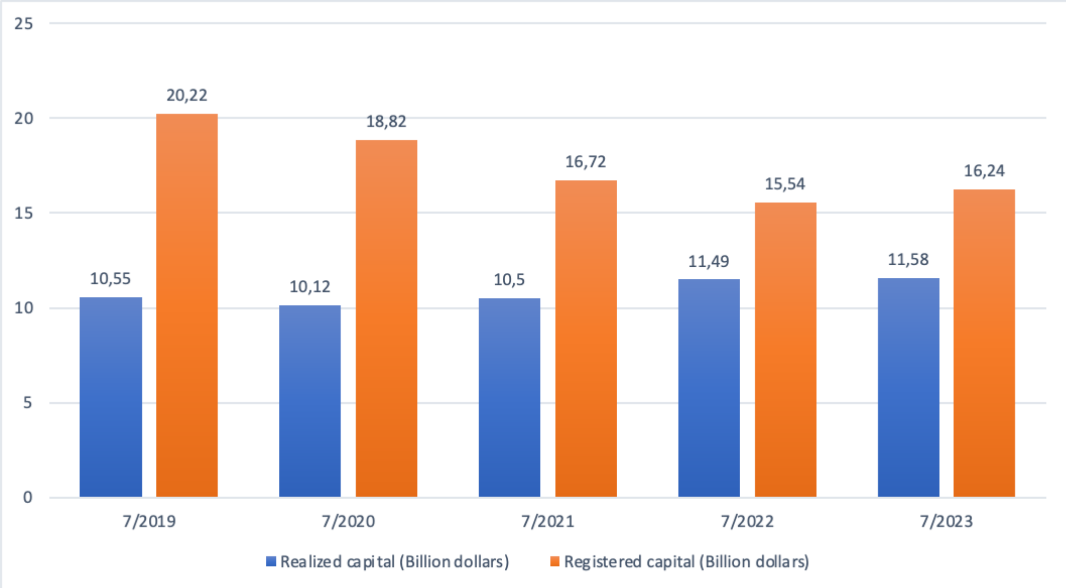
*Data processing method:*

The collected data were synthesized, calculated, and presented in tabular form. To evaluate and analyze the data, the study also used comparative and analytical methods to assess the results of attracting green FDI in Vietnam, based on two content groups: (i) FDI projects focused on the production of environmentally friendly goods and services, addressing environmental issues and (ii) FDI projects using clean energy or consuming less energy. Subsequently, the research team proposed solutions to enhance green FDI attraction in Vietnam.

## 4. The current situation of attracting Green FDI in Vietnam

Over the past 35 years of attracting foreign direct investment (FDI), foreign-invested projects that have gone into operation have made significant contributions to Vietnam's socio-economic development (Ministry of Planning and Investment, 2023). The economic areas with foreign investment have grown rapidly and effectively, becoming an essential part of the economy, creating employment, income for laborers, improving production capacity and capabilities, stabilizing macroeconomic conditions, and promoting economic structural shifts. According to statistics from the Ministry of Planning and Investment, over the past 35 years, Vietnam has attracted nearly $438.7 billion in FDI. Among this total, $274 billion has been disbursed, equivalent to 62.5% of the registered and effective investment capital. In 2022, there were more than 1,100 active projects with applications for capital adjustment, totaling an additional $10.12 billion in registered capital, representing a 12.4% increase compared to the previous year (Ministry of Planning and Investment, 2022).

**Figure 1: Results of FDI attraction in Vietnam from 7/2019 to 7/2023**




*Source: Ministry of Planning and Investment, 2019-2023.*

In the context of global FDI flows focusing on high technology, innovation, research and development, green economy, and circular economy, Vietnam has also prioritized policies to attract high-quality FDI projects and those that are environmentally friendly (Ha, T., T.,T et al., 2022). However, the number of high-tech investment projects with added value in Vietnam is still low. Many projects engage primarily in labor-intensive activities, use significant land resources, and have environmental impacts, with limited technology transfer and supply chain linkages. Additionally, 85% of foreign-invested enterprises (FDI) have 100% foreign capital, significantly limiting the potential for technology transfer and spillover effects to domestic businesses (VAFIE, 2022). This situation has prompted Vietnam to focus on attracting green FDI.

The policies aimed at attracting green FDI have included granting more preferential treatment to such projects, including incentives related to income tax, land rent, and lease duration. As a result, FDI inflows into Vietnam are increasingly concentrating on sustainable development. Green technology, processing, manufacturing, and clean energy have become the main areas of FDI investment (Huong., D., T., T., 2023). In terms of areas, attracting green FDI are towards to some provinces as Binh Duong, Ha Noi, Quang Ninh. In specific terms of green FDI, it can be divided into two aspects:

*(i) Investment projects targeting the production of environmentally friendly goods and services and addressing environmental issues.*

The environmental goods and services market in Vietnam has not yet been clearly defined. Although there are numerous policy frameworks, laws, regulations, and directions targeting businesses operating in environmental goods and services sectors, these products and services are scattered across different industries. This makes tracking, assessing, and aggregating data challenging (Mutrap, 2016).

More specific about operation, most enterprises tend to import machinery and technology from other countries. Environment-related service companies primarily focus on waste collection, treatment, and disposal, with recycling activities meeting only about 30-35% of environmental protection needs and mainly involving domestic companies. The number of foreign-invested enterprises in this sector remains limited, accounting for only 0.7-0.8% of the total number of FDI projects. While this number has been increasing in recent years, these projects are primarily concentrated in two major cities, Hanoi and Ho Chi Minh City (Mutrap, 2016).

Regarding compliance with environmental regulations, FDI enterprises generally understand and adhere to regulations regarding wastewater, emissions, and solid waste management. However, inspection results from the General Department of Environment (Ministry of Natural Resources and Environment) in 28 northern provinces revealed an increasing rate of FDI enterprises violating environmental protection regulations in recent years. In 2019, 13 out of 19 inspected enterprises were found in violation, accounting for 68% of the total (VAFIE, 2022). Common violations included not submitting an environmental impact assessment report as required, failing to implement one of the contents specified in the environmental impact assessment report, lacking a certificate of completion for environmental protection works during the project's operational phase, or not properly executing one of the approved environmental protection project activities. Regarding waste management, common violations included inadequate periodic waste monitoring, incomplete declarations of hazardous waste transferred in waste certificates, unauthorized self-treatment of hazardous waste, exceeding technical standards in wastewater discharge, and installing pipes for waste discharge without treatment into the environment (VAFIE, 2022).

(*ii) These are FDI projects that use clean energy or consume minimal energy.* Most “green FDI” projects are focusing on the aspect of renewable energy use. A compilation of some prominent green FDI projects in Vietnam shows that the majority of large projects are concentrating on the second aspect, which is FDI projects that utilize clean energy or have low energy consumption. Notable examples include the 100% renewable energy-powered factory by Pandora, Denmark; the waste-to-energy project by China Tianying, China; the carbon-neutral factory project aimed at CO2 emission reduction by Lego, Denmark; and the Bac Lieu liquefied natural gas power plant project under the Bac Lieu LNG Thermal Power Center of Singapore. In December 2022, Vietnam, along with G7 countries and other international partners, signed the Just Energy Transition Partnership (JETP) agreement and reached an agreement to receive approximately $15.5 billion in foreign support for clean energy transition.

The significant increase in investment capital in this group of FDI projects is primarily attributed to Vietnam's commitments and efforts regarding direction and policies. The government issued Decision No. 1658/QD-TTg approving the National Green Growth Strategy for the 2021-2030 period with a vision to 2050. The strategy defines green technology and green products, setting specific goals towards greening Vietnam's economy, including reducing greenhouse gas emissions, applying circular economy models, enhancing renewable energy production, and developing sustainable infrastructure. Furthermore, the government has a policy to attract FDI capital for high-tech projects with low carbon emissions that do not cause environmental pollution. Vietnam has committed to achieving net-zero emissions by 2050. The overall approach to attracting foreign investment is selective, focusing on quality, efficiency, technology, and environmental protection, as outlined by the government and various ministries and local authorities (Huong, D.T.T., 2023). Vietnam has been more cautious in selecting and attracting FDI capital, ensuring that every investment balances economic, environmental, and social benefits. Additionally, Vietnam possesses natural advantages in terms of climate and a geographically suitable location for renewable energy development (Duong, N.A., 2022). Another advantage is that the purchasing price set by the Vietnam Electricity Group (EVN) is higher for electricity generated from renewable energy sources such as wind and solar power. Vietnam has attracted the largest investment in renewable energy in ASEAN and has significant potential to achieve a net-zero emissions energy system by 2050 (Ministry of Industry and Trade, 2021).

While it is possible to analyze the current situation from the two aspects mentioned above, determining whether an FDI project is truly green or not is not straightforward. The degree of “greenness” is not easily measured solely through pollution reduction or energy savings, as investment activities are not always directly related to specific goods or services but rather associated with a process/technology (Golub, S.S., C. Kauffmann, and P. Yeres, 2011). In the investment attraction phase, an FDI project may meet green FDI standards, but its production process could generate a considerable amount of waste or consume a significant amount of energy. Even when assessing the outcomes in terms of products and services, these goods and services often serve multiple purposes, not all of which are “green”. FDI enterprises can also produce various types of products, and only a portion of them may be considered “green”. At the industry level, green FDI can play a vital role in industries unrelated to the environment but with potential for pollution reduction. The criteria for green FDI capital are still relatively broad and incomplete, making it challenging to screen initial investment and monitor business activities (Huong, D.T.T., 2023). These are the difficulties in determining, classifying, and measuring green FDI. Therefore, the authors evaluate the contribution of green FDI to GDP, employment, the environment, and analyze Vietnam's efforts in implementing policies to promote green growth.

***Contribution to GDP, economic restructuring, and exports:*** FDI enterprises have contributed to changing the structure of exports, reducing the proportion of mining products and primary goods while increasing the share of manufactured goods. This provides a basis for implementing green FDI. FDI enterprises contribute to over 20% of GDP and account for 72% of total export value. This outstanding performance of the FDI sector is evident when comparing the number of FDI enterprises, which is currently around 25,000, with 800,000 domestic enterprises. However, the corporate income tax collected from FDI enterprises accounts for 7.5-8.5% of total domestic budget revenue (General Statistics Office, 2022).

***Employment creation***: Between 2016 and 2020, on average, FDI enterprises attracted 4.7 million workers each year, accounting for 32.0% of total employment and representing a 50.8% increase compared to the 2011-2015 period (Ministry of Planning and Investment, 2022). From 2016 to 2020, the average monthly income of workers in FDI enterprises reached 9.6 million VND, increasing by 46.7% compared to the 2011-2015 period (Ministry of Planning and Investment, 2022).

Additionally, FDI has an impact on technology transfer, including machinery, equipment, knowledge, and management experience. It also promotes the reform of state-owned enterprises, administrative procedures, and the improvement of the market economic system. It builds and enhances the capacity of state management officials in foreign investment.

In addition to these results, some localities have not been diligent in project selection and screening, leading to low value-added. The rapid development and growth of FDI attraction in previous periods, along with challenges in infrastructure from previous periods, have resulted in a concentration of enterprises in industrial zones and processing zones that cause environmental pollution (Mai, N., 2023). There is also a problem of land waste, loss of state assets, and national resources, especially agricultural land and coastal land. Additionally, some FDI enterprises continue to use outdated machinery (Mai, N., 2023). Although legal regulations are relatively clear, detailed requirements in the process and procedures are considered challenging for foreign investors who have not researched, studied, or received support from experienced consulting firms in Vietnam.

Furthermore, tax policies - a powerful tool for attracting FDI in Vietnam - will lose its effectiveness when the global minimum tax is implemented in 2024. This tax, initiated by the OECD and endorsed by 142 countries, including Vietnam, requires all large corporations with revenues of over $800 million to pay a 15% corporate income tax, regardless of the country they operate in (Minh, D.N., 2023). As a result, the preferential tax rates of 10%, 15%, and 17% under specific conditions in Vietnam will no longer be effective. Based on 2021 tax settlement data, the additional corporate income tax revenue that could be collected annually if all countries with parent companies investing in Vietnam apply this global minimum tax is estimated to be over VND 10,000 billion (Luc, C.V., 2023).

## 5. Some proposals to enhance green FDI attraction in Vietnam

***Firstly, a group of solutions related to green FDI attraction policies:***

To realize the government's goal of attracting green FDI, the government needs to:

Continue to improve FDI policies and regulations by reviewing and amending any inconsistencies between environmental protection laws and other relevant laws to ensure consistency among legal frameworks. This will help remove obstacles and difficulties in attracting green FDI.

Continue to update and issue regulations on environmental prevention, reduction, and monitoring, including emission duration regulations. It is essential to incorporate requirements for environmentally friendly investments in all desired FDI projects to receive investment incentives.

When foreign companies planning to operate in countries with strict environmental regulations, they can easily meet the stricter environmental standards of these markets. Therefore, Vietnam should improve its legal framework related to environmental issues, strengthen enforcement, and ensure that companies adopt green technologies and practices in their operations (Johnstone et al., 2007).

Develop comprehensive strategies and plans that coordinate all stages of the green FDI project process, tailored to the specific nature of each project. Operational plans must involve the participation of the government, relevant ministries, and local authorities.

Explore additional forms of incentives and support for new investments in the context of implementing global minimum tax regulations to ensure competitiveness and attractiveness of the investment environment in Vietnam. On one hand, Vietnam needs to supplement regulations on corporate income tax following the global minimum tax rate (set at 15%) to comply with global minimum tax regulations, to be applied from January 1, 2024. However, it is necessary to provide direct or indirect financial support that does not violate the global minimum tax rules, is consistent with international commitments, transparency, and minimizes adverse effects on the investment environment.

Focus on leveraging other important factors in attracting FDI, such as political stability, a favorable business environment, labor force, and infrastructure. The government and local authorities need to prepare the necessary conditions for attracting investments, such as reviewing and supplementing available land funds, reviewing power planning, and developing supporting industries.

Build domestic companies' capabilities to participate in the value chains of FDI companies, encourage domestic companies to develop.

***Secondly, a group of solutions for the management and operation of green FDI projects:***

(i) Solutions for FDI projects in the field of environmental goods and services production and environmental issues handling:

Based on environmental standards and emission limits during operations, it is necessary to require green FDI companies to publicly disclose information about the environment and emission control measures. In addition to the initial investment attraction policies, fees or environmental taxes should be applied to companies.When facing issues related to air, water, or soil pollution, the government has several options to consider to balance the need for a cleaner environment with the economic costs of environmental cleanup. The Ministry of Natural Resources and Environment and local authorities should actively guide, monitor, and inspect FDI companies' compliance with environmental protection laws. Penalties should be imposed on FDI companies that exceed allowable pollution levels or evade environmental protection obligations.

(ii) Solutions for FDI projects using renewable energy:

Establish legislative frameworks through the enactment of Renewable Energy Law to efficiently mobilize resources for the development of renewable energy sources. Create effective support mechanisms for renewable energy and ensure their efficient operation. Prioritize the development of wind energy, solar energy, and biomass energy sources as they have significant potential for greenhouse gas emissions reduction.

***Thirdly, a group of solutions for measuring and assessing the effectiveness of green FDI:***

Establish more detailed criteria for measuring green FDI: The definition of green FDI can be based on the degree of compliance of the investment project with Vietnam's environmental regulations. Therefore, it is necessary to research and determine the level of “greenness” by specifying green criteria such as input factors, production processes, emission levels, energy consumption levels, energy sources used, machinery, technology, waste treatment processes, air and water pollution, and the environmental friendliness of the final products or services. The degree of environmental friendliness can also be evaluated by comparing FDI projects to domestic investments in the same industry.

These criteria should be classified and predicted based on the characteristics of each type of green FDI. If the “greenness”evaluation criteria can only be measured once FDI companies enter the investment stage, such as “energy-saving production processes” or “reduced emission production processes”, it is necessary to have commitments and guarantees from FDI companies during the initial investment attraction stage.

***Fourthly, other proposed solutions:***

Enhance public awareness of green investments, green FDI, and sustainable growth among domestic businesses, workers, managers, local authorities, and industrial zones.

Promote and encourage the participation of the entire society towards sustainable growth. Given current global trends, consumers can exert pressure on FDI companies to pay more attention to the “green” aspects of their business activities. The local community where FDI companies operate can also exert pressure on companies to improve their environmental quality.

Strengthen the capabilities of each province and locality, form new industrial zones, and create an ecosystem for high-tech industries. Local authorities should develop economic and social development plans tailored to the local context, expand development space, create ecosystems of interconnected clusters, avoid concentration in urban areas, and minimize environmental pollution. Local authorities should also plan land use carefully to relocate production facilities or transform production functions.These proposals aim to enhance Vietnam's ability to attract green FDI, promote sustainable growth, and protect the environment effectively.

## 6. Conclusion

FDI contributes to Vietnam's green growth objectives by providing essential financial resources and serving as a means of transferring business know-how between economic sectors. The policies implemented to attract green FDI in recent years prioritize various measures beyond typical projects, including income taxes, rental prices, and lease durations. In the two aspects of green FDI, namely projects in the environmental goods and services production sector and renewable energy projects, FDI inflows into Vietnam are increasingly focused on renewable energy projects. However, this contribution is still largely unmeasured due to a lack of general understanding of how to define and measure green FDI, as well as difficulties in controlling the entire investment process and assessing investment results.

This article has assessed the contributions of green FDI to production, employment, and the environment, as well as analyzed Vietnam's efforts in enacting and implementing policies to promote green growth. Future research could focus more on specific aspects of green FDI or limit the scope to particular industries or sectors, such as researching the attraction of green FDI in the textile and footwear industries. Furthermore, future research directions could delve into evaluating the contributions of green FDI activities to production, employment, and trade, quantifying and monitoring the effectiveness of Vietnam's policies aimed at achieving green growth objectives.

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