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Policy Brief

Greening the Pipeline: Rethinking FDI for Climate Commitment

About Policy Consensus Centre (PCC)

The Policy Consensus Centre (PCC), founded by Ms. Nirupama Soundararajan and Mr. Arindam Goswami, emerges with a distinct mission: to conduct impactful policy research and drive policy transformations. Our focus encompasses pivotal sectors crucial for India's advancement, along with those that have been underexplored. In the intricate landscape of India, divergent opinions often hinder consensus-building for policymakers amidst diverse stakeholders.

PCC stands dedicated to comprehensive, evidence-driven research, promoting inclusivity and rigor. Our objective resides in cultivating accord among stakeholders through independent, data-centric analysis, a catalyst for meaningful policy shifts. In a climate where some research entities avoid unconventional subjects, PCC remains resolute in advocating thorough exploration across all sectors. Our belief underscores the necessity to scrutinize seemingly unconventional domains, an approach vital for identifying accurate risks and formulating sound policies.

PCC champions the synergy of economic rationale and empirical data, pivotal in fostering consensus and enabling effective policymaker engagement. In essence, PCC embodies a pioneering spirit committed to navigating uncharted territories, propelling well-informed policy decisions for India's holistic growth.

Table of Contents

List of Abbreviations	1
1. Introduction	2
2. Definition of Green FDI.....	2
3. Measuring GFDI.....	3
4. Impact of GFDI	3
5. Aligning GFDI with India's Climate Finance Taxonomy	4
6. Need for a Green (Transition) FDI Framework.....	5
7. Outcome of the Discussion.....	6
7.1 Reframing the Concept of Green FDI (GFDI)	6
7.2 Developing an India Specific Definition of Green and Transition FDI.....	6
7.3 Adopting an Impact Based Approach rather than a Sectoral Approach.....	7
7.4 Linking and Expanding Green FDI Strategy with Sectoral Transition Pathways and Supporting Activities.....	7
7.5 Integrating Green FDI Tracking with Existing ESG Disclosure Systems	8
7.6. Focus on Developing Green Technology by Combining Innovation and Indigenous Practices.....	8

List of Abbreviations

BRSR	Business Responsibility and Sustainability Reporting
CABM	Cross Border Adjustment Mechanism
DCF	Developed Climate Finance
EGS	Environmental Goods and Services
ESG	Environment, Social, and Governance
EU	European Union
EV	Electric Vehicles
FDI	Foreign Direct Investment
GFDI	Green FDI
GHG	Greenhouse Gas
IFRS	International Financial Reporting Standard
INR	Indian Rupee
NDC	Nationally Determined Contributions
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
RE	Renewable Energy
SBTi	Science Based Target initiative
SCMs	Supplementary Cementitious Materials
SEBI	Securities Exchange Board of India
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar

1. Introduction

Foreign Direct Investment (FDI) has long been a cornerstone of India's economic development strategy, acting as a critical conduit for capital, technology, and managerial expertise. In the contemporary global landscape, marked by the urgent climate crisis and the transition to a low-carbon economy, the nature and purpose of FDI are undergoing a profound transformation. This brought forth the concept of Green FDI (GFDI), a term that, while increasingly prevalent, lacks a standardised, comprehensive definition, particularly in the Indian context. This concept note argues that for India to genuinely align its economic growth with its ambitious climate goals announced during COP26, it must move beyond a narrow, sectoral understanding of GFDI. Instead, India must adopt a holistic, "Net GFDI" framework that accounts for both positive environmental contributions and associated carbon liabilities across an investor's portfolio and value chains.

2. Definition of Green FDI

Defining GFDI can be challenging. A key reason for this is because majority of goods and services serve both environmentally beneficial and conventional purposes. Firms also tend to produce a mix of outputs, only some of which can be considered green. In 2008, UNCTAD did attempt to define GFDI and this it did in two parts. The first was investments that went beyond the requisites or standards laid down by the host country ("compliant plus" and the second was investments in environmental goods and services (EGS) sectors. In 2010, UNCTAD further built on the existing definition and focussed more on technology transfer as an intrinsic component of green FDI. The latter definition focused on clean technology transfers that would potentially help sectors in the host country to lower their greenhouse gas (GHG) emissions. What remained common to both definitions was the two characteristics – low carbon products and services and low carbon processes.

OECD (2011) presented a more concise definition that incorporated the UNCTAD definition. OECD (2011)¹ has defined GFDI along two dimensions i.e.,

- i. FDI in environmental goods and services (EGS) sectors, and
- ii. FDI in environmental-damage mitigation processes, i.e. use of cleaner and/or more energy-efficient technologies.

¹ Golub S.S., Kauffmann C., & Yeres P., (2011), "Defining and Measuring Green FDI: An Exploratory Review of Existing Work and Evidence", OECD Working Papers on International Investment 2011/02, OECD
https://www.oecd.org/content/dam/oecd/en/publications/reports/2011/09/defining-and-measuring-green-fdi_g17a2012/5kg58j1cvcvk-en.pdf

However, this definition comes with the caveat that while FDI in EGS sector which involves sectors such as production and distribution of renewable energy and environmental services (e.g. waste management and recycling), are comparatively easier to capture; FDI in environmental-damage mitigation processes are far more difficult to measure. This is primarily due to the absence of detailed information on the nature of the technology used and the outcomes of foreign investment on the environment, i.e., energy-intensity, carbon footprint, waste management, air and water pollution, etc.²

3. Measuring GFDI

The purpose of defining GFDI, whether at a global standardised level or at a more country specific level, is to be able to track and monitor it. While the definitions of GFDI presented may have moved away from a traditionally blinkered approach to a more well-rounded approach, it still presented challenges in measuring the “green” component. In order to be able to track and monitor GFDI, data would be required at not just sector and firm level, but also at the process level. It would require detailed disclosures on usage of FDI coming in and whether it is consistent with the definition so GFDI. This kind of data that will make it possible to track GFDI is still not in place.

At the time of the OECD 2011 paper, estimating GFDI in in EGS sectors was a challenge, since development of green taxonomies were still at a nascent stage. However, this has become easier today. Several countries have detailed green taxonomies for the purpose of green banking, green bonds, and other green investment purposes. Hence monitoring and tracking investments in EGS is possible and is also undertaken. However, this is still narrow in its approach and does not take into account the second part of the OECD definition, which is more process driven, and as already discussed, in order to monitor the second part of the definition, it is necessary to not only rethink current data frameworks, but also a country’s overall philosophy towards FDI.

4. Impact of GFDI

Traditional literature on FDI and economic growth suggests that FDI results in economic growth, employment generation, trade competitiveness, and technology transfer. Arguably, GFDI must also result in these positive externalities, directly or indirectly. This in itself can be a point of debate.

In the context of GFDI, it could either result in transfer of clean technology which would have direct impact on lowering carbon footprint at a firm level and therefore cumulatively at the sector level. It could also have a multiplier effect in terms of the value

² IBID

chain. This is similar to current environment, social, and governance (ESG) frameworks, where large companies are expecting their suppliers to also adopt ESG practices in line with Scope-3 emission requirements.

Infact, such requirements have now transcended value chains and are not applicable to cross border trade as well. The European Union's (EU) recent Cross Border Adjustment Mechanism (CABM) is aimed at pricing carbon intensive imports in such a way that domestic green industry is not disincentivised by domestic green standards. This new policy tool is particularly relevant in the context of GFDI, because it mandates discussion on whether GFDI does lead to better environmental and climate outcomes than domestic investments, particularly for a country like India.

5. Aligning GFDI with India's Climate Finance Taxonomy

India requires an estimated USD 22.7 trillion investment in the climate mitigation sector to achieve its net zero carbon footprint target by 2070 (NITI Aayog, 2026).³ Thus, mobilising international green capital is not merely an opportunity but an existential necessity. However, the current approach, both globally and in India, not surprisingly, simplistically equates GFDI with investments primarily in the renewable or non-conventional energy sector and electric vehicles (EV). Sectoral restrictions are also broadly aligned to this approach. For example, 100 percent FDI is allowed in renewable energy, including solar, wind, and green hydrogen, via automatic route. This has further had a positive impact with India attracting a steady inflow of foreign investments in the renewable energy sector. To demonstrate, between January 2000 and December 2024, the non-conventional energy sector in India attracted FDI equity inflow of INR 1,55,070.08 crore (USD 21.33 billion), which was 2.96 percent of the total FDI equity inflow in India.⁴

India's efforts to mobilise climate aligned capital have gained institutional clarity with the release of the draft framework for Climate Finance Taxonomy by the Ministry of Finance. The taxonomy represents a significant shift from fragmented definitions of "green" towards a structured, activity-based classification system aligned with India's development and climate priorities.⁵

³ NITI Aayog, February 2026, "Scenarios Towards Viksit Bharat and Net Zero Financing Needs https://niti.gov.in/sites/default/files/2026-02/Scenarios-Towards-Viksiti-Bharat-and-Net-Zero-Financing-Needs-Vol9_0.pdf

⁴ DPIIT (Ministry of Commerce & Industry), December 2025 <https://www.dpiit.gov.in/static/uploads/2025/12/516c1c465fd2c7ec41613e849a206c84.pdf>

⁵ Draft Framework of India's Climate Finance Taxonomy, Department of Economic Affairs, Ministry of Finance, Government of India <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/may/doc202557551101.pdf>

A key strength of India's climate finance taxonomy lies in its explicit recognition of hard to abate sectors. Unlike many early taxonomies that focused narrowly on renewable energy and low emission sectors, the Indian approach acknowledges that a large share of emissions is embedded in existing industrial capacity and decarbonising them will require gradual, capital-intensive transition pathways, rather than immediate green substitution. Hence, the climate finance taxonomy in India encourages investments in new technologies as well as modernisation and capacity enhancement aligned with lower emissions trajectories in existing facilities in hard to abate sectors such as steel, cement and heavy industries. This reflects a rational approach, aligned with India's broader commitments under the Paris Agreement.

However, global and domestic investors continue to interpret "green investment" through a limited lens of taxonomy pure sectors, often excluding transition investments in carbon intensive industries. As a result, most green capital is disproportionately directed toward low risk, already bankable sectors while traditional brown and hard to abate sectors face financing gaps despite being taxonomy aligned.

6. Need for a Green (Transition) FDI Framework

While the green taxonomy in India provides a framework for classifying sustainable economic activities, it does not yet fully translate into targeted policy instruments for cross-border capital flows, particularly FDI. This creates a policy gap in the sense that while India has a taxonomy for what qualifies as green or transition activity, it lacks a corresponding framework for what qualifies as green or transition FDI.

GFDI could mitigate the risk of stranded assets and delayed transition in traditionally brown sectors, including hard to abate sectors. More critically, side-lining hard to abate sectors from the GFDI grid will fail to net off concurrent investments that exacerbate the climate challenge. This said, decarbonising these sectors also requires large scale capital deployment, technology shifts, and long-term risk taking, far beyond what has been achieved in relatively mature green sectors.

To bridge the GFDI gap between the conventional energy sector and the transitional brown sector, India needs to move toward a dedicated framework for green and transition FDI, anchored in its climate taxonomy. This would entail the following.

- Alignment of GFDI inflow and taxonomy objective, with a clear definition on "transition investment".

- Developing standardised metrics of measurement for traditional and transition investment with clear investment eligibility criteria for transition FDI, reporting standards and impact measurement.
- Creating norms for prevention of misallocation and greenwashing. This would mean that requisite checks must be put in place to prevent over labelling investments without meaningful climate impact as “green”.

7. Outcome of the Discussion

India is strategically poised to make philosophical and structural changes to her approach to FDI. India can increase her competitiveness in international markets by becoming the most favoured green destination for green investments, green products, and green exports. Green FDI could be a potent policy instrument to manifest these objectives. In this context, it is necessary for India to define GFDI to suit domestic realities and also consider systemic shifts in how data on FDI is captured, recorded and monitored. Our discussion highlighted a broad consensus that India’s approach to green FDI must evolve beyond a narrow focus on traditionally green sectors and instead support the wider industrial transition of the economy. A broad set of recommendations that came out of the discussion are presented below.

7.1 Reframing the Concept of Green FDI (GFDI)

At present, the bulk of GFDIs (including climate related FDIs) coming to India predominantly flow into renewable energy (RE) and electric vehicle (EV) projects. Recently, green hydrogen production projects have started attracting GFDIs. While these are good indicators, there is a need to recognise investments that reduce emission intensity, increase climate adaptation and improve production processes within traditionally brown sectors. Hence, targeted provisions should be made for attracting FDIs in greening (or less browning) of processes in traditional manufacturing and hard-to-abate sectors. Further such investments should also qualify under a broader GFDI policy.

7.2 Developing an India Specific Definition of Green and Transition FDI

Currently, India lacks an operational definition of GFDI. Existing global approaches by the Organisation for Economic Co-operation and Development (OECD) and United Nations Conference on Trade and Development (UNCTAD) were seen as useful starting points but are not suitable for India’s industrial realities. India should develop a definition of GFDI with a separate category for transition FDI under the Indian climate finance taxonomy framework. However, utmost care must be taken to

maintain interoperability of the Indian climate finance taxonomy framework with other climate finance taxonomies so as foreign investors can adhere to their local climate norms while investing in India.

7.3 Adopting an Impact Based Approach rather than a Sectoral Approach

At present, FDI is recorded sector wise rather than by climate outcomes. Since investments often span across green and non-green activities, the existing approach cannot capture process level changes. Thus, it may be useful to develop an impact-based classification rather than using a sectoral approach for defining and categorising GFDI. Parameters may include emission reductions achieved, cleaner production method, energy efficiency gains, circularity outcomes, among others. This would push brown sectors to undertake credible decarbonisation efforts to access green capital. This would ultimately help India's Net Zero Carbon commitment and create a positive impact on climate change mitigation and adaptation efforts.

Further, developing infrastructure for capturing facility level emission data, process level transition metrics, tracking life cycle emissions, and ensuring a project level reporting mechanism would help in measuring actual climate impact and avoiding misclassification.

7.4 Linking and Expanding Green FDI Strategy with Sectoral Transition Pathways and Supporting Activities.

To enable GFDI in transitional and hard-to-abate sectors, sector-wise climate transition pathways may be mapped to the Nationally Determined Contributions (NDC) of India to determine the type of energy mix that is needed in an industrial process to reduce emission. Once mapped, a particular polluting process (or a part of the process) can be replaced or substituted by an environmentally friendly or less polluting energy mix. A suitable example of this is clinker substitution in the cement industry in India which has replaced energy intensive clinker with Supplementary Cementitious Materials (SCMs) like fly ash, slag, and calcined clays that helps in reduction of CO₂ emissions, lowering production costs, and improving long-term durability. This will further help in creating a circular economy, improving waste management and in some cases also improving efficiency in production.

Beside sectoral transition, enabling and supporting activities such as waste processing, recycling, biomass utilisation, energy efficiency system, circular economy infrastructure, critical mineral processing etc, may be considered under GFDI framework.

7.5 Integrating Green FDI Tracking with Existing ESG Disclosure Systems

The Business Responsibility and Sustainability Reporting (BRSR) standards introduced by the Securities Exchange Board of India (SEBI) should be aligned with recognised global standards such as the with the Science Based Target initiative (SBTi) principles, Developed Climate Finance (DCF) principles, IFRS S2 Climate-related disclosures etc., so as to reduce duplication in reporting while improving international comparability. This would further ensure easy flow of foreign capital, reduce compliance burden on domestic businesses, increase confidence among investors, and enable ease of doing business in India. Policymaking aside, businesses should also voluntarily adopt BRSR which would automatically ensure that they are aligned with globally accepted ESG standards, making them eligible for green and climate transient FDIs.

Moreover, measuring carbon intensity over time, benchmarking firms against sectoral emission pathways, and evaluating climate performance improvements after investments may also be used as proxies for measuring GFDI impact.

7.6. Focus on Developing Green Technology by Combining Innovation and Indigenous Practices

India has traditionally been parsimonious on research and development expenditure. This trend is visible both within the economy as well as within industries. Due to this, India has predominantly been depended on developed economies for acquiring and transfer of technology. However, India's long term climate competitiveness cannot rely solely on imported technologies.

Though R&D spend has increased in some selected sectors over the last decade, but India still looks to other nations for acquiring new technology, which most countries are hesitant to share. India must invest significantly more in domestic R&D and innovation capacity. One way to achieve this is by investing in industrial research through a public-private partnership (PPP) model. To specifically attract GFDI in "greening of process" in sectors, industries must combine innovation with indigenous practices to develop new green technology.



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