

Issue

Brief

ISSUE NO. 730
SEPTEMBER 2024

An Introduction to Green and Transition Finance

Neha Khanna and Mannat Jaspal

Abstract

India presents a unique case of balancing decarbonisation efforts with industrial growth. While notable progress is being made in decarbonising the power and transport sectors, reducing industrial emissions poses a formidable challenge. To meet its decarbonisation targets, India will need massive capital flows, projected at US\$10.1 trillion by 2070. While green finance will support technologies that align with the Paris Agreement, transition finance is essential for sectors lacking viable green alternatives. This is especially crucial given the increasing likelihood of stringent carbon border adjustments. Transition finance plays a pivotal role in helping India's energy-intensive industries—such as steel, cement, and aviation—reduce their carbon footprint and navigate the impacts of protectionist domestic policies. This brief examines the vital role of both green finance and transition finance in addressing the decarbonisation needs of hard-to-abate sectors, which collectively account for over 40 percent of global emissions.

The green transition of economies has become imperative, and governments, regulators, and the private sector across geographies and sectors are increasingly implementing decarbonising measures and strategies aimed at reducing emissions intensities, greening the financial system, and fostering green business opportunities. However, the financing landscape is skewed towards sectors focused on mitigation, including renewable energy proliferation and transport, which have developed a strong business case and garnered substantial political support compared to other energy-intensive and hard-to-abate sectors. Achieving a low-carbon economy necessitates an inclusive approach to financing the transition, especially considering the needs of Emerging Markets and Developing Economies (EMDEs), and focusing on hard-to-abate sectors, which have substantial carbon-removal potential.

Process and energy-related emissions from hard-to-abate sectors collectively contribute to over 40 percent¹ of global greenhouse (GHG) emissions. These emissions may arise from production (in the case of steel, cement, aluminium, chemicals, pulp, and paper), energy (such as in oil and gas), and transport (e.g., aviation, shipping, and trucking). Ensuring the effective and timely transition of hard-to-abate sectors is therefore critical to achieve net-zero targets.

Despite per-capita emissions below the global average, India is the third highest GHG emitter in the world.² The power sector is the largest emitter, responsible for 37 percent of total GHG emissions in the country, followed by the agricultural sector at 21 percent (including methane from livestock and rice cultivation), manufacturing at 17 percent, and the transportation sector at 9 percent.³ In 2019, the road transport sector accounted for 91 percent of total GHG emissions from the transport sector, followed by civil aviation at 6 percent, railways at 2 percent, and water-borne navigation at 1 percent.⁴

India's hard-to-abate sectors include large-scale industries such as iron and steel, cement, ammonia, transport, and agriculture, as well as Micro, Small, and Medium Enterprises (MSMEs). In India, the CO₂ emissions from these sectors are expected to increase by almost 2.6 times between 2020 and 2050.⁵

Industrial emissions, which include sectors like iron and steel, cement, fertiliser, and petroleum refining, account for nearly 21 percent of India's total emissions.⁶ These emissions originate from both energy use (fossil fuel combustion) and process-related activities (such as calcination in cement

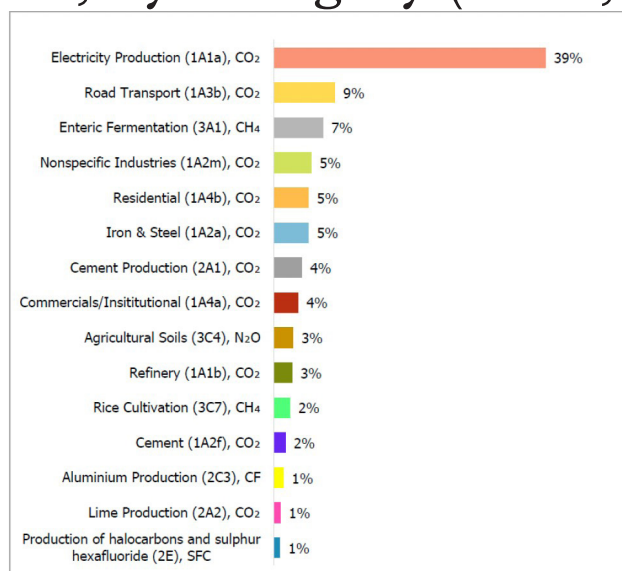
production and the use of CO₂-generating compounds as feedstock in chemical production). India is the world's second largest steel producer and the second largest manufacturer and consumer of cement.⁷ The iron and steel industry contributes to approximately 5 percent of India's total GHG emissions, while the cement industry accounts for close to 4 percent.⁸ Additionally, India is the third largest producer of primary aluminium and the fifth largest producer of bauxite globally, and volumes are only expected to rise with projected growth in demand in the coming years.⁹

Transport decarbonisation is already underway through measures such as electrification, enhanced operational efficiency, modal shift, and the switch to electric and hydrogen vehicles. Energy sector decarbonisation involves transitioning to clean energy sources, including renewable and even nuclear. However, emissions reduction for industry is particularly difficult since most emissions arise from industrial processes themselves rather than energy consumption. For example, almost half of the emissions in the cement industry arise from the decomposition of limestone to lime and CO₂.¹⁰ While switching to clean energy sources such as renewables can reduce emissions in the power sector and other energy-related needs, finding substitutes for emissions-intensive industrial processes continues to be a challenge.¹¹

India faces challenges in decarbonising its hard-to-abate sectors without engendering de-industrialisation. As India is yet to peak in its emissions, circularity, energy efficiency, and material efficiency will be key to its decarbonisation strategies. In heavy industries, material efficiency and circularity can reduce carbon emissions by an estimated 40 percent globally.¹² Short-term emissions could be potentially reduced by 15-20 percent through improvements in energy efficiency.¹³ These factors, however, will not be sufficient for industries to achieve net-zero and must be complemented with a blend of electrification (clean power), clean hydrogen, and new-age technologies such as carbon capture utilisation and storage (CCUS) to abate fossil fuel consumption.

Transitioning to net-zero for hard-to-abate sectors is a complex task due to the extremely high process temperature requirements, limited commercialised and scalable technological alternatives, and large associated capital costs.

Figure 1: Percentage Share of GHG Emissions, by Category (India, 2019)



Source: India's Third National Communication and Initial Adaptation Communication to the UNFCCC¹⁴

Achieving this transition will require substantial capital flow. It is estimated that an annual capital investment of approximately US\$3.5 trillion¹⁵ is required globally by 2050 to build a net-zero economy and avert a climate catastrophe. India alone will require cumulative investments of US\$10.1 trillion by 2070¹⁶ to meet its net-zero goals. Currently, tracked finance flows to mitigation account for only about 25 percent of the total investments needed in India.¹⁷ This indicates that the transition to net-zero will require increased climate investment, not only in clean energy and transportation but also in other hard-to-abate sectors. Scaling up essential technologies and sustainable infrastructure is crucial, with a focus on electrifying low- to medium-temperature industrial processes. However, investments must be supplemented by policies and incentives that enable industries to adopt more efficient and clean alternatives without hindering economic growth. There is also considerable potential for sectors to collaborate, drive innovation, and tackle common challenges through shared knowledge, joint innovation, risk mitigation, and resilience planning.

Transition Finance vs. Green Finance

Financing transition will require a combination of green finance and transition finance.

- **Green finance:** Financing technologies that produce (near-)zero emissions and are aligned with the Paris Agreement. For example, investing in utility or rooftop solar or wind energy projects.
- **Transition finance:** Financing to reduce emissions for hard-to-abate sectors or technologies that are important for emissions reductions in other sectors (as enablers). In most cases, these activities are not aligned with the Paris Agreement but are important due to the lack of suitable ‘green’ alternatives.¹⁸ Unlike green finance, transition finance allocates capital to companies and activities that are not “green” but are in the process of “becoming green” or reducing emissions (therefore lowering their exposure to transition risks), emphasising both inclusiveness and environmental integrity to avoid greenwashing. Therefore, transition finance caters to the decarbonising priorities of energy-intensive and hard-to-abate sectors that cannot be green in the short term due to the lack of green alternatives which are economical or technically feasible. For example, financing a project aimed at improving the efficiency of refrigeration and air-conditioning (RAC) equipment or bonds issued by a natural gas company to retrofit gas transmission and distribution networks to reduce methane leakage and facilitate the introduction of hydrogen.

Transition Finance vs. Green Finance

Table 1: Financing Transition, Green Finance, and Transition Finance: Definitions and Examples

	Financing Transition	Green Finance	Transition Finance
Definition	Financing any activity that reduces emission	Financing technologies that have zero emissions or near-zero emissions and are thus already aligned to the Paris Agreement	Reducing emissions for sectors that are hard-to-abate sectors or sectors that are important for emission reduction in other sectors (enabling activities). In most cases, these are activities that cannot be aligned with the Paris Agreement and have no alternatives.
Examples	All mitigation activities: renewable energy, energy efficiency, carbon capture, forests, etc.	Solar energy, wind energy	Steel, cement, aviation

Source: *The Role of Coal in a Sustainable Energy Mix for India: A Wide-Angle View*¹⁹

While ‘green finance’ is a widely understood term, ‘transition finance’ is newer and has multiple definitions. These have been put in place via taxonomies, regulators, or institutions. Table 2 lists these definitions and taxonomies.

Transition Finance vs. Green Finance

Table 2: Transition Finance Taxonomies

Entity	Document Name
Association of South East Asian Nations (ASEAN)	Transition Finance Guidance ²⁰
Barclays	Transition Finance Framework ²¹
Climate Bonds Initiative (CBI)	White Paper Financing Credible Transitions ²² Discussion Paper on Transition Finance for Transforming Companies ²³ CBI has sector criteria available for energy, transport, buildings, etc. ²⁴
DBS	Sustainable & Transition Finance Framework & Taxonomy ²⁵
European Union (EU)	EU Taxonomy regulation ²⁶ Taxonomy delegated regulation for Technical Screening Criteria (TSC) ²⁷
Global Financial Alliance on Net-Zero (GFANZ)	Financial Institution Net-Zero Transition Plans: Fundamentals, Recommendations, and Guidance ²⁸
International Capital Markets Association (ICMA)	Climate Transition Finance Handbook: Guidance for Issuers ²⁹
Japan	Basic Guidelines on Climate Transition Finance ³⁰ Technology Roadmaps (Iron & Steel) ³¹
Monetary Authority of Singapore (MAS)	Singapore-Asia Taxonomy for Sustainable Finance ³²
Standard Chartered	Transition Finance Framework ³³

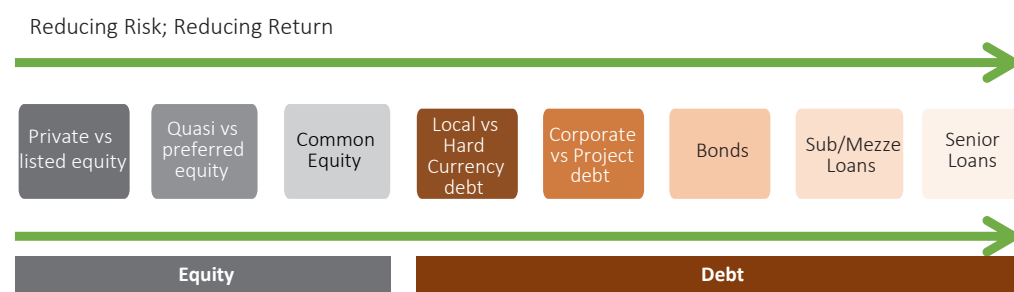
Source: Authors' own

Transition Finance vs. Green Finance

A standardised definition of ‘transition finance’ will require a global aspect as well as a local one, unlike green finance, which has similar characteristics across countries.^a

In line with the current understanding of both green finance and transition finance, instruments and mechanisms have been developed to mobilise the finance flows. These include instruments across the capital stack.

Figure 2: Capital Stack



Source: Discussion Paper: Financing Industrial Decarbonization by Climate Policy Initiative³⁴

Although instruments for green finance are more common, those for transition finance are underway; as of 2022, while the global market for green debt is over US\$2.2 trillion, that for transition is just US\$12.5 billion.³⁵

^a IFSCA created a working group on Transition Finance which has released a report that includes a taxonomy as well. See: https://ifsc.gov.in/Document/ReportandPublication/ifsc-report-on-transition-finance_final_without_signature_0107202401072024073647.pdf

Transition Finance vs. Green Finance

Figure 3: Status of GSS, SLB, and Transition (GSS+)^b Debt Market (31 December 2022)

GSS+ scorecard					
	 Green	 Social	 Sustainability ^a	 Transition	 SLB
Total size of market (cumulative)	USD2.2tn	USD653.6bn	USD682.0bn	USD12.5bn	USD204.2bn
Number of Issuers	2,457	772	507	39	336
Number of countries	85	49	57	12	50
Number of currencies	49	42	41	7	21

Source: Sustainable Debt: Global State Of The Market Report, 2022³⁶

In India, these figures are very different. As of 2021,³⁷ transition bonds were yet to be issued in the country, while green bond issuance stood at US\$18.3 billion.

^b Green, social, and sustainability (GSS) markets; sustainability-linked bonds (SLBs)

Transition Finance vs. Green Finance

Figure 4: Total Size of the Indian GSS Market (31 December 2021)

Total size of the Indian GSS market as of 31/12/2021				
	 Green	 Sustainability*	 Social*	Total
Total size of market	USD18.3bn	USD600m	USD500m	USD19.5bn
Number of issuers	72	1	2	75
Number of currencies	3	1	2	3

Source: India Sustainable Debt: State Of The Market Report, 2021³⁸

Transition finance can be raised through various instruments, including transition bonds and loans, as well as sustainability-linked bonds and loans. Transition bonds are use-of-proceeds debt instruments that can be utilised either at the entity level or activity level for predefined transition activities or projects. In contrast, sustainability-linked bonds are outcome-based instruments, i.e., the specific activity undertaken to achieve the transition is not the focus; instead, these bonds are linked to pre-identified sustainability key performance indicators (KPIs) and are usually applied at the company level.³⁹ However, transition finance does not include any financing through ESG+ labelled bonds and loans.

Multilateral banks, such as the International Finance Corporation (IFC), are also providing blended finance solutions to decarbonise hard-to-abate sectors. These solutions mix funds from private, public, and philanthropic investors with financing from the IFC to support high-impact transition projects. The blended finance instruments include a variety of tools such as concessional loans, equity investments, and guarantees.

Current Challenges and Ways Forward

A multifaceted approach is required to address the need for finance for green and transition activities in a just and sustainable manner. The current challenges on an economy-wide scale can be categorised thus:

- **Technical:** Near-zero carbon technologies occupy a niche, with high costs and performance risks making them less competitive than established processes.
- **Economic:** The risk-return profiles of these technologies are difficult to justify due to their capital-intensive nature and long-term horizons. Perceived risks associated with these sectors compound the problem.
- **Institutional:** Institutional capacity is weak, and public and private institutions often work in silos, with little coordination.

To increase mobilisation, challenges at the levels of both the real sector and the financial sector will have to be identified and addressed.

Real Sector/Demand Side

The real sector requires an enabling ecosystem to transition to low-carbon pathways. The challenges for the real sector can be divided into three broad categories: policy, regulation, and markets.

- **Policy push**

In India, the extensive scale and urgent timelines for transition across sectors demand robust support from policymakers. These involve policies that create incentives (e.g., subsidies, tax breaks, grants), increase demand (mandates such as renewable energy targets, public procurement programs, and consumer awareness campaigns), and build confidence (long-term policy commitments and transparent policymaking) among new players to invest in novel and sometimes experimental and expensive technologies.

- **Regulatory support**

Some sectors, such as the power sector, are more tightly regulated than others. While policy levers will create an enabling environment, regulatory support

Current Challenges and Ways Forward

(setting standards, guidelines, and benchmarks for emissions, energy efficiency, and renewable energy integration) and implementation (effective monitoring and evaluation) from regulators will form the second bedrock of the enabling framework.

- **Market movement**

Markets can aid transition by providing innovations, supporting ecosystem readiness, and working together to create models and pipelines that can attract and absorb capital. However, one of the key challenges, especially for capital providers, is that, while there is capital, there are no bankable projects or pipelines to direct the capital.

Financial Sector/Supply Side

Financial institutions are increasingly acknowledging the physical and transition risks arising from climate change, for example, the increasing risk of stranded assets from closed power stations or transport infrastructure. Despite their efforts to keep pace with the growing need for green and transition finance, the uptake has been low. In India, so far, tracked financing flows towards climate change mitigation are barely a quarter of the total required.⁴⁰ With increased targets and ambitions, as highlighted in the Nationally Determined Contributions (NDCs) and the commitments at India's G20 presidency, financing flows need to increase rapidly. To achieve this, the financial sector and financial institutions need support as well as a push towards introducing new products and increasing the uptake of existing products that align with green and transition finance.

Financial institutions, including retail and investments banks, capital markets, insurers, and asset owners, operate under diverse contractual and regulatory environments owing to their unique and individual characteristics, such as size, business model, sector coverage, fiduciary duty toward shareholders, and other factors.

The overarching challenges faced by the financial sector include the following:

- **Lack of taxonomy:** Be it green finance or transition finance, there is no standard taxonomy that is in place. The lack of clarity hinders not only the uptake of existing products but also the innovation of new ones.

Current Challenges and Ways Forward

- **Regulatory guidelines:** While the Reserve Bank of India (RBI) has released draft guidelines, formal guidelines are yet to be launched. Insurance and pension fund regulators are also yet to issue draft guidelines. The only regulator to issue guidelines is the Securities and Exchange Board of India (SEBI), which has released ESG⁴¹ (environmental, social, and governance) rating guidelines and the BRSR⁴² (Business Responsibility and Sustainability Reporting) disclosure framework. Without formal and comprehensive regulatory guidelines, financial institutions will continue to face challenges regarding both the financial and reputational risks associated with investments in hard-to-abate sectors.
- **Capacity building:** Given the novelty of the subject and the vast amount of available literature, financial institutions often struggle to find the relevant information and support that is required across levels. Further, the task of growing green finance and transition finance is compounded by the existing challenge of increasing finance flows to MSMEs. Current capacity building, in the form of trainings, roundtable discussions, and peer-learning sessions, is inadequate.
- **Market-led innovation:** Urgent action is required, and there is a need to innovate while ensuring adherence to guardrails and regulations as well as ensuring that the risk of greenwashing and transition washing are mitigated. Innovation in mechanisms and structures is required to increase the flow to both green and transition activities. Current incentive structures do not adequately support the level of innovation required in the financial sector. Additionally, concessional capital is not readily available, which is necessary to increase lending to sectors perceived as risky or as having poor creditworthiness.

Given the threat of stringent carbon border adjustments, transition finance is crucial for hard-to-abate sectors to reduce their carbon footprint and mitigate the impact of such measures. These adjustments impose export taxes on products from hard-to-abate sectors, potentially hindering their competitiveness in the global market. By facilitating investments in low-carbon technologies and practices, transition finance helps industries comply with evolving regulations, maintain their competitiveness, and contribute to global emission reduction efforts.

The work done by Observer Research Foundation (ORF) and Climate Policy Initiative (CPI) in this space have highlighted that solving the problem of financing transition in India requires an approach that provides a common platform for both demand- and supply-side players. In a collaborative compendium titled “A Roadmap for Green and Transition Finance in India”,⁴³ we have incorporated insights from eminent contributors across the real and financial sectors. Based on these contributions and our analysis, a common framework has been developed, outlined briefly below, with more in-depth exploration in the compendium.

The framework is built around five key pillars, aligned with three primary drivers, and identifies relevant actors and implementation timelines. The recommendations are broad yet actionable, taking into account the diverse stakeholders in the ecosystem. The five pillars are outlined in the following paragraphs:

Scope and Definition: Standardising decarbonisation pathways and definitions is critical for creating a level playing field and providing institutions with the clarity needed for faster, more targeted action.


Transparency: Interventions here focus on improving data availability to enhance transparency and address concerns around integrity.

Cooperation: This pillar highlights the importance of sector alliances, leveraging multilateral development banks, and fostering stronger government-industry collaboration.

Supply Chain Support: Recognising that value chains are integral to decarbonisation, this pillar focuses on interventions that ensure supply chains, particularly in hard-to-abate industries, receive the necessary support to transition effectively.

Financial Innovation: Financial sector stakeholders must drive innovative solutions to fund and facilitate the transition. This pillar focuses on the interventions needed to engage these stakeholders in financing mechanisms.

Conclusion

These recommendations aim to guide the transformation towards a low-carbon economy by integrating policy, regulatory, and market dynamics, with attention to sector-specific nuances. They have the potential to move the needle in the right direction as they are grounded in real-world insights and practical challenges faced by the industry and financial institutions. Our goal is to harmonise demand-side and supply-side measures to create a conducive environment for transitioning hard-to-abate sectors. We aim to support relevant outcomes and strengthen the collective efforts of various stakeholders to expedite this agenda. 

This brief was first published in ORF's A Roadmap for Green and Transition in Finance in India, which can be accessed here: <https://www.orfonline.org/research/a-roadmap-for-green-and-transition-finance-in-india>.

Neha Khanna is Senior Manager, Climate Policy Initiative.

Mannat Jaspal is Associate Fellow, Observer Research Foundation.

- 1 World Economic Forum, *Net-Zero Industry Tracker*, November 2023, https://www3.weforum.org/docs/WEF_Net_Zero_Tracker_2023_REPORT.pdf
- 2 Statista, Energy & Environment, “Distribution of Carbon Dioxide Emissions Worldwide in 2022,” May 2024, <https://www.statista.com/statistics/271748/the-largest-emitters-of-co2-in-the-world/>
- 3 Jean Chateau et al., *A Framework for Climate Change Mitigation in India*, October 2023, International Monetary Fund, <https://www.imf.org/en/Publications/WP/Issues/2023/10/20/A-Framework-for-Climate-Change-Mitigation-in-India-535854>
- 4 Government of India, Ministry of Environment, Climate and Climate Change, *Third National Communication and Initial Adaptation Communication to The United Nations Framework Convention on Climate Change*, 2023, <https://unfccc.int/sites/default/files/resource/India-TNC-IAC.pdf>
- 5 MIT News, “Getting the Carbon Out of India’s Heavy Industries,” Massachusetts Institute of Technology, July 5, 2022, <https://news.mit.edu/2022/getting-carbon-out-india-heavy-industries-0705>
- 6 Montek S. Ahluwalia, Utkarsh Patel, *A Medium-Term Strategy for Transitioning to Net Zero by 2070*, April 2024, Centre for Social and Economic Progress, <https://csep.org/working-paper/a-medium-term-strategy-for-transitioning-to-net-zero-by-2070/>
- 7 Government of India, Ministry of Environment, Climate and Climate Change, “Third National Communication and Initial Adaptation Communication”
- 8 Government of India, Ministry of Environment, Climate and Climate Change, “Third National Communication and Initial Adaptation Communication”
- 9 Government of India, Ministry of Environment, Climate and Climate Change, “Third National Communication and Initial Adaptation Communication”
- 10 Sergey Paltsev et al., *Economic Analysis of the Hard-to-Abate Sectors in India*, MIT Joint Program on the Science and Policy of Global Change, September 2021, https://globalchange.mit.edu/sites/default/files/MITJSPGCG_Rpt355.pdf
- 11 Paltsev et al., “Economic Analysis of the Hard-to-Abate Sectors in India”
- 12 Daniel Klier et al., *Heavy Lifting: Why Transition Finance is Vital to Combat Climate Change*, HSBC, June 2020, <https://www.sustainablefinance.hsbc.com/-/media/gbm/sustainable/attachments/heavy-lifting-the-importance-of-transition-finance-to-combat-climate-change.pdf>
- 13 Klier et al., “Heavy Lifting”
- 14 Government of India, Ministry of Environment, Climate and Climate Change, “Third National Communication and Initial Adaptation Communication”
- 15 Energy Transitions Commission, “Financing the Transition,” <https://www.energy-transitions.org/keeping-1-5c-alive/financing-the-transition/#:~:text=Two%20distinct%20but%20equally%20necessary%20forms%20of%20financial%20flow&text=Around%20%243.5%20trillion%20a%20year,%241%20trillion%20per%20annum%20today>

- 16 Council on Energy, Environment and Water, <https://www.ceew.in/press-releases/india-will-require-investments-worth-over-usd-10-trillion-achieve-net-zero-2070-ceew>
- 17 Neha Khanna, Dhruba Purkayastha, and Shreyans Jain, “Landscape of Green Finance in India,” Climate Policy Initiative, August 2022, <https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance-in-india-2022/>
- 18 Mritiunjoy Mohanty and Runa Sarkar, eds, *The Role of Coal in a Sustainable Energy Mix for India* (Taylor & Francis, 2024), <https://library.oapen.org/handle/20.500.12657/76145>
- 19 Aanandita Sikka, Neha Khanna, and Dhruba Purkayastha, “Chapter 18,” in *Transition Finance*, https://www.climatepolicyinitiative.org/wp-content/uploads/2023/09/10.4324_9781003433088-23_chapterpdf.pdf
- 20 ASEAN Capital Markets Forum, *ASEAN Transition Finance Guidance*, October 2023, <https://www.theacmf.org/images/downloads/pdf/ASEAN%20Transition%20Finance%20Guidance%20Version%201%20-%20FINAL%2017%20Oct%202023.pdf>
- 21 Barclays, *Barclays Transition Finance Framework*, February 2024, <https://home.barclays/content/dam/home-barclays/documents/citizenship/our-reporting-and-policy-positions/Barclays-Transition-Finance-Framework-V1.pdf>
- 22 Climate Bonds Initiative, *Financing Credible Transitions: How to Ensure the Transition Label has Impact*, Climate Bonds Initiative, Credit Suisse, September 2020, https://www.climatebonds.net/files/reports/cbi_fincredtransitions_final.pdf
- 23 Climate Bonds Initiative, “A Climate Bonds Discussion Paper: Transition Finance for Transforming Companies,” <https://www.climatebonds.net/transition-finance-transforming-companies>
- 24 Climate Bonds Initiative, “Climate Bonds Standard Certified,” <https://www.climatebonds.net/standard/available>
- 25 DBS Bank, *Sustainable & Transition Finance Framework & Taxonomy*, March 2022, DBS Bank, https://www.dbs.com/iwov-resources/images/sustainability/pdf/IBG%20Sustainable%20and%20Transition%20Finance%20Framework_Revision%201.pdf
- 26 EUR-Lex, “Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation,” June 18, 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852>
- 27 EUR-Lex, “Commission Delegated Regulation,” June 4 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R2139>
- 28 Glasgow Financial Alliance for Net Zero, *Financial Institution Net-Zero Transition Plans*, November 2022, GFANZ, <https://assets.bbhub.io/company/sites/63/2022/09/Recommendations-and-Guidance-on-Financial-Institution-Net-zero-Transition-Plans-November-2022.pdf>

- 29 Climate Transition Finance, *Climate Transition Finance Handbook*, June 2023, International Capital Market Association, ICMA, *Climate-Transition-Finance-Handbook-CTFH-June-2023-220623v2.pdf* ([icmagroup.org](https://www.icmagroup.org))
- 30 Ministry of Economy, Trade and Industry; and Ministry of the Environment, Japan, *Basic Guidelines on Climate Transition Finance*, May 2021, <https://www.icmagroup.org/assets/documents/Sustainable-finance/2023-updates/Climate-Transition-Finance-Handbook-CTFH-June-2023-220623v2.pdf>
- 31 Ministry of Economy, Trade and Industry, *Technology Roadmap for “Transition Finance” in Iron and Steel Sector*, October 2021, https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_iron_and_steel_eng.pdf
- 32 Monetary Authority of Singapore, *Singapore-Asia Taxonomy for Sustainable Finance*, December 2023, Government of Singapore, *singaporeasia-taxonomy-dec-2023.pdf* ([mas.gov.sg](https://www.mas.gov.sg))
- 33 Standard Chartered, *Transition Finance Framework*, 2021, <https://www.mas.gov.sg/-/media/mas-media-library/development/sustainable-finance/singaporeasia-taxonomy-dec-2023.pdf>
- 34 Climate Policy Initiative, *Financing Industrial Decarbonization, Challenges and Solutions for India’s Iron and Steel Sector*, April 2024, *Financing-Industrial-Decarbonization.pdf* ([climatepolicyinitiative.org](https://www.climatepolicyinitiative.org))
- 35 Climate Bonds Initiative, *Sustainable Debt Global State of the Market 2022*, https://www.climatebonds.net/files/reports/cbi_sotm_2022_03e.pdf
- 36 Climate Bonds Initiative, “Sustainable Debt Global State of the Market 2022”
- 37 Climate Bonds Initiative, “Sustainable Debt Global State of the Market 2021,” https://www.climatebonds.net/files/reports/cbi_india_sotm_2021_final.pdf
- 38 Climate Bonds Initiative, “Sustainable Debt Global State of the Market 2021”
- 39 Sikka, Khanna, and Purkayastha, “Chapter 18”
- 40 Neha Khanna, Dhruva Purkayastha, Shreyans Jain, “Landscape of Green Finance in India,” CPI, August 2022, <https://www.climatepolicyinitiative.org/wp-content/uploads/2022/08/Landscape-of-Green-Finance-in-India-2022-Full-Report.pdf>
- 41 Government of India, SEBI, “Balanced Framework for ESG Disclosures, Ratings and Investing,” https://www.sebi.gov.in/sebi_data/meetingfiles/apr-2023/1681703013916_1.pdf
- 42 Government of India, Securities and Exchange Board of India, BRSR Core, *The Official Report on Framework for Assurance and ESG Disclosures for Value Chain*, July 2023, https://www.sebi.gov.in/legal/circulars/jul-2023/brsr-core-framework-for-assurance-and-esg-disclosures-for-value-chain_73854.html
- 43 Mannat Jaspal and Neha Khanna, Eds., *A Roadmap for Green and Transition Finance in India*, September 2024, Observer Research Foundation and Climate Policy Initiative, <https://www.orfonline.org/research/a-roadmap-for-green-and-transition-finance-in-india>



Ideas . Forums . Leadership . Impact

20, Rouse Avenue Institutional Area,
New Delhi - 110 002, INDIA
Ph. : +91-11-35332000. Fax : +91-11-35332005
E-mail: contactus@orfonline.org
Website: www.orfonline.org