in 2023 (Climate Bonds Initiative, 2023), with 67% dominated by green bonds; social bonds at 16%; sustainability bonds at 14%; Sustainability-Linked Bonds (SLBs) at 3%; and transition bonds making up 0.3%[9]. High investor scrutiny for SLBs may have disincentivized issuers and investors alike.

SLBs have been facing considerable scrutiny due to lack of credibility owing to linkages with greenwashing as a result of inadequate structural and calibration features, and weak underlying transition plans. Transition plans are being increasingly asked for by investors and regulators to check if they include all material sources of emissions and reinforce the issuers' commitment through credible financial planning[10].

Figure 1: Issuance of GSS+ Labelled bonds

Global GSSSB issuance by type

(Bil. US$)	Green bond	Social bond	Sustainability bond	Sustainability-linked bond	Transition bond	Total
2019	265	19	53	4	1	342
2020	308	170	137	9	3	627
2021	570	221	200	97	4	1,092
2022	523	175	151	77	4	930
2023	575	181	159	66	3	984

Excludes structured finance data. GSSSB--Green, social, sustainability, and sustainability-linked bonds.
Sources: Environmental Finance Bond Database. S&P Global Ratings.

Table 2: Transition finance initiatives evaluated

Nature of Entity	Name of Entity	Title	Release
Jurisdiction/ Regulator	**Association of Southeast Asian Nations (ASEAN)**	Transition Finance Guidance	October 2023
	European Union (EU)	EU Taxonomy regulation Taxonomy delegated regulation for Technical Screening Criteria (TSC)	June 2020 July 2021
	Japan	Basic Guidelines on Climate Transition Finance Technology Roadmaps (Iron & Steel)	May 2021 October 2021

[9] https://www.climatebonds.net/files/reports/cbi_susdebtsum_q32023_01e.pdf
[10] https://www.climatebonds.net/files/reports/cbi_slb_report_2024_04d.pdf

Nature of Entity	Name of Entity	Title	Release
	Monetary Authority of Singapore (MAS)	Singapore-Asia Taxonomy for Sustainable Finance	December 2023
Standard Setter/ Coalition	**Climate Bonds Initiative (CBI)**	White Paper - Financing Credible Transitions Discussion Paper on Transition Finance for Transforming Companies CBI has sector criteria available for energy, transport, buildings, etc. available here	September 2020 September 2022
	Glasgow Financial Alliance for Net-Zero (GFANZ)	Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance	November 2020
	International Capital Markets Association (ICMA)	Climate Transition Finance Handbook: Guidance for Issuers	September 2023
Institution	**Barclays**	Transition Finance Framework	February 2024
	DBS	Sustainable & Transition Finance Framework & Taxonomy	March 2022
	Standard Chartered	Transition Finance Framework	2021

A detailed matrix elaborating on the approach taken by each of the ten entities under the three categories (jurisdictions/regulators, standard setters/coalitions, and institutions) towards transition finance, is provided in Appendices 1, 2 and 3.

Findings

Areas of convergence and common parameters: The wide range of entities and initiatives on transition finance notwithstanding, their respective approaches to it feature several areas of convergence. Specifically, many seek to approach transition finance from the perspective of common parameters such as industry/sector; activity/process; transition trajectory; and test for general corporate finance and instruments. Table 3 summarizes the approaches of various entities with regard to these parameters.

Table 3: Parameters-specific approach taken by evaluated entities

Parameters	Approach
Industry/Sector	• Listed directly (without going through labelling/traffic light) - 1 Jurisdiction/Regulator (Japan) - 2 Institutions (Barclays, Standard Chartered) • Arrived at via a labelling/traffic light system. - 2 Jurisdictions/Regulators (EU, MAS) - 1 Standard Setter/Coalition (CBI) - 1 Institution (DBS) • Labelling system exists but does not arrive at specific industry/sector. - 1 Jurisdiction (ASEAN) - 1 Standard Setter/Coalition (GFANZ) • No guidance - 1 Standard Setter/Coalition (ICMA)
Activity/Process	• Listed directly. - 2 Institutions (Barclays, Standard Chartered) • Arrived at via a taxonomy/technology roadmap. - 4 Jurisdictions/Regulators (ASEAN, EU, Japan, MAS) - 1 Standard Setter/Coalition (CBI) - 1 Institution (DBS) • No guidance - 2 Standard Setters/Coalitions (GFANZ, ICMA)
Trajectory	• Aligned with Paris Agreement (1.5°C) - 2 Jurisdictions/Regulators (EU, Japan) - 2 Standard Setters/Coalitions (CBI, GFANZ) - 1 Institution (Standard Chartered) • Aligned with Paris Agreement (1.5°C or 2.0°C) - 1 Jurisdictions/Regulators (ASEAN) - 1 Standard Setter/Coalition (ICMA) - 1 Institution (DBS) • Aligned with 2.0°C but transitioning towards 1.5°C by specified target year - 1 Jurisdiction/Regulator (MAS) • Provides choices to select alignment with regional or national scenarios, in addition to Paris Agreement 1.5°C - 1 institution (Barclays)
Test for General Corporate Finance	• Specific percentage of revenues (90%) traceable to specified activities - 2 Institutions (Barclays, Standard Chartered) • Qualitative framework - 1 Institution (DBS) • No guidance - 4 Jurisdictions/Regulators (ASEAN, EU, Japan, MAS)

Parameters	Approach
	- 3 Standard Setters/Coalitions (GZANZ, CBI, ICMA)
Instruments	• All financial instruments - 1 Jurisdiction/Regulator (ASEAN) - 1 Institution (DBS) • Use of proceeds & SLB - 1 Jurisdiction/Regulator (Japan) - 2 Standard Setter/Coalition (CBI, ICMA) • Exclusions for SLB++ - 1 Institution (Barclays) • No guidance - 2 Jurisdictions/Regulator (EU, MAS) - 1 Standard Setter/Coalition (GZANZ) • 1 Institution (Standard Chartered)

Rapid decarbonization of the economy would entail decarbonization of sectors, which would in turn happen through decarbonization of economic entities. This would entail adoption of cleantech/emissions reduction technologies, supply chain disclosures and emissions reductions. etc). At each of these levels, a set of tools will be needed -- such as frameworks/regulations and trajectories at the level of sectors; financial instruments and transition plans; entity-level assessments; and financial instruments such as the use of proceeds and taxonomies at the level of activities and measures.

Mitigation focus: The priority mandate for the sub-group concerned emissions reduction. This is not to say that adaptation or social aspects are less important for transition, but they are to be mostly used as environmental and social 'safeguards'.

From a more high-level perspective transition finance initiatives should aim to incorporate, principles of ambition, inclusivity, and flexibility with a credible transition plan:

- **Ambition**: Aiming high means aligning activities with a science-aligned pathway with targets that get the entity to net-zero by 2050 or earlier, and/or respective countries net-zero trajectory consistent with Paris goals.
- **Inclusivity** allows all sectors and activities to participate; and
- **Flexibility** means utilizing financial instruments -- other than bonds and loans-- for financing transition.

Table 4 gives a list of options for IFSCA for each parameter.

Table 4: Parameters-specific approach options for IFSCA

Parameters	Approach Options for IFSCA
Industry/Sector	• Option 1: List directly without going through labelling/traffic light system - 15 sectors listed in India's Third National Communication to UNFCC which account for 91% of emissions. - Sectors which eventually come into the fold of the Indian Carbon Market (ICM) • Option 2: Arrive via labelling/traffic light system - Adapt existing global or regional system to suit Indian needs. - Nudge appropriate authorities (MoF/SEBI) to create bespoke for India
Activity/Process	• Option 1: Recognize established jurisdictional taxonomies/global standards as an interim measure until India's own taxonomy is released - ASEAN - EU - Japan (technology roadmap) - MAS - CBI - ICMA • Option 2: Adopt Indian taxonomy - Nudge appropriate authorities (MoF/SEBI) to create bespoke for India • Option 3: Adopt activities that feature on India's whitelist for Article 6.2 - While activities themselves are mentioned, granularity with respect to their technology specifications is presently lacking.
Trajectory **(Note that most taxonomies have emissions thresholds stapled to the various activities listed in them, which are in turn aligned with the trajectories they are targeting)**	• Option 1: Align with Paris Agreement 1.5°C - EU - Japan - Or others such as IEA, IPCC RCP 1.9 and RCP 2.6 • Option 2: Align with Paris Agreement 1.5°C or well below 2.0°C - ASEAN • Option 3: Adopt a quantitative approach and implement Industry/Sector-specific trajectories - Nudge appropriate authorities (Niti Aayog, MOEFCC, line ministries) to create bespoke for each industry/sector

Parameters	Approach Options for IFSCA
Test for General Corporate Finance	• Option 1: Specify - Percentage based that represents significant contribution to emissions reduction - Qualitative (where required) - Transition plan with clear milestones and financial plan • Option 2: Do not specify (leads to misallocation of capital and greenwashing) - Majority of entities evaluated (8 out of 10) do not give guidance, and the 2 that do, are institutions
Instruments	• Option 1: All financial instruments • Option 2: Specify exclusions

In light of the above, following are the recommendations for IFSCA for each parameter, along with a brief rationale for the same.

Recommendations

1	Approach for transition finance on various parameter		
	Parameter	**Recommendation for IFSCA**	**Rationale**
	Industry/ Sector	• List directly without going through labelling/traffic light system	• Use 15 sectors listed on page 74 of India's Third National Communication to UNFCC that account for >90% of emissions. • Labelling/traffic light can be an onerous exercise, whereas sources of emissions-- which is where transition needs to happen--- are already documented. • Japan, which has been the most successful jurisdiction for transition bonds also lists the industry/sectors directly without going through a labelling/traffic light system.

	Activity/Process	• Allow use of well-recognized and robust taxonomy/technology roadmaps	• As India does not yet have a taxonomy in place, passporting taxonomies/technology roadmaps from elsewhere would be an efficient way to kick-start transition finance flows. • In doing so, any robust and widely recognized good practice taxonomy/technology roadmap may be allowed to be used. • When India introduces its own taxonomy, it will be added to the list of allowed taxonomies, without removing the previously allowed ones.
	Trajectory **(Note that most taxonomies have emissions thresholds stapled to the various activities listed in them, which are in turn aligned with the trajectories they are targeting)**	• Allow alignment with either Paris Agreement 1.5°C or well below 2.0°C	• Per IPCC at a global level, a 2.0° trajectory would require reaching net-zero by around 2070, which is also India's stated net-zero target year. • By also introducing optionality to align with 1.5°C rather than only 2.0°C, a greater number of activities under 1.5° C aligned taxonomies/technology roadmaps (e.g., EU & Japan) become available for financing to entities with higher ambition.
	Test for General Corporate Finance	• Specify	Specify rationale: • Specifying would be particularly relevant for those institutions which do not have general corporate finance tests of their own. • This would also be valuable for bond issuances.

			• In the case of institutions with their own general corporate finance tests they may be allowed to use either their own or the test that the framework will specify. • To make explicit the transition plan with clearly defined milestones against science-aligned trajectory for accountability and transparency.
2	Universally prevalent systems of assurance should be used for third party verification to reduce chances of greenwashing.		
3	A detailed taxonomy for transition finance for India may need to be pursued by the MoF and/or SEBI; currently this lies outside the scope of IFSCA.		

Another aspect to be considered is the linking of instruments as either result-based or use of proceed, or both. An example of instruments for each of the options is in Table 5.

Table 5: Difference between result based/KPI linked and instruments

	Results-Based (Sustainability-Linked Bonds/Loans)	**Use of Proceeds (Green Bonds)**
Type of finance	KPI-linked	Use of proceeds
Scope	Usually finances entity-level transition activities to sustainable practices. May include several sustainability indicators as part of KPIs.	Use of Proceeds are debt instruments where the issuer promises to the investors that all the raised funds will only go to specified climate-related programs or assets, such as renewable energy plants or climate mitigation funding programs.
Standards	ICMA Sustainability-Linked Bond Principles (SLBP)	ICMA Green Bond Principles (GBP)
Due diligence	Company-level transition plans	Benchmarking against sectoral transition pathways and targets.

8.2 Pillar 2 – Policy and Regulation

Stimulating the Demand for Transition Finance

There exist significant barriers to the decarbonization of industrial and other hard-to-abate sectors such as shipping and aviation, that can result in potential locking-in of investments in carbon-intensive assets. Several 'transition-stage' technologies, which are expected to play an important role in decarbonizing these sectors, are between Technology Readiness Levels (TRL) 5 – 9 (early demonstration to early commercial operations). Technologies that are commercially available in India (mainly RE, energy efficiency, and material circularity), and have substantial mitigation potential, remain severely under-used despite having favourable economics. There are several underlying barriers to financing and adoption of low-carbon technologies, including technology performance risk; unproven business models; high upfront investment costs; internationally competitive markets; policy and regulatory uncertainty; lack of appropriate incentives; lack of supporting infrastructure; limited technical capabilities and resources to finance a profitable transition through technological improvements and innovation; and limited access to suitable financing and financial services owing to a lack of tailored solutions.

These underlying barriers translate into real and perceived investment risks, causing a mismatch between a project's investment risk-return profile and the expectations of private investors, resulting in high cost of financing and under-investment in climate-positive activities. Diffusion of breakthrough technologies cannot be left to market forces alone.

Financial sector policies, regulations, and guidelines/frameworks to unlock the supply of transition finance, need to be complemented with targeted interventions focused on the real sector, that address the barriers to financing; improve the risk-return profile of investments; and thereby stimulate the demand for transition finance. The speed and scale of a low-carbon transition would require the government to play a key role in correcting multiple market failures (environmental externalities, information asymmetry, coordination failures), and in creating new markets for low-carbon technologies.

Effective and well-designed 'green' sectoral policies can level the playing field between low-carbon and conventional technologies, incentivize early adopters of low-carbon solutions, reduce investment risks (by reducing cost of capital), and create markets for green products, in turn creating a demand for transition finance to flow into these sectors. Such policy frameworks would need to target (and balance) multiple outcomes – output, competitiveness, and decarbonization – and could use a mix of financial, market-based, and regulatory instruments to achieve these objectives.

Table 6 describes various types of policy instruments that can be used to this effect.

Table 6: Real sector policy instruments to stimulate demand for transition finance

Category	Instrument	Definition	Instrument Type
Research, Development and Demonstration (RD&D) and Supporting Investments	Long-term decarbonization targets and sectoral pathways	Developing, supporting, and implementing policies, including targets and strategic plans, that guide policy development	Others
	Public RD&D funding	Public grant funding for RD&D	Fiscal and financial
	Private RD&D incentives	Incentives for private sector spending on RD&D, like tax credits	Fiscal and financial
	Public investments in supporting infrastructure	Public expenditure to develop supporting infrastructure, such as pipelines and storage facilities, enabling private investments in low-carbon technologies.	Fiscal and financial
Technology Push (Supply-Side Interventions)	Carbon pricing - tax	Tax on fossil fuels or carbon dioxide emissions intended to reduce the emission of carbon dioxide.	Fiscal and financial
	Carbon pricing - cap and trade market with tradable certificates	Policies introducing tradable carbon/GHG emission permits based on fixed allowances per sector and producer	Market-based
	Carbon border adjustment (as a complementary policy measure)	Policy that levies a carbon price on imports to prevent carbon leakage, generally applied together with a domestic carbon price.	Market-based
	Public direct investment in low-carbon production facilities	Policies aimed at setting up low-carbon production facilities through direct investments by State-Owned Enterprises	Fiscal and financial
	Viability Gap Funding / Capex subsidies	Capital subsidies, consumer grants or rebates as one-time payments to cover a percentage of the capital cost of an investment	Fiscal and financial

Category	Instrument	Definition	Instrument Type
	Opex subsidies	Policies offering a long-term agreement/regulation remunerating the sale of fuel/feedstock/electricity at a fixed price which is typically above standard market levels	Fiscal and financial
	Subsidized investment loans and loan guarantees	Policies providing subsidized financing to project developers, and credit guarantees to investors	Fiscal and financial
	Investment / Production tax credits	Policies allowing for full or partial deduction from income tax obligations for investments / or that provide the investor or owner of qualifying asset with an annual income tax credit based on the amount of fuel/feedstock/electricity generated during the relevant year.	Fiscal and financial
Demand Pull (Demand-Side Interventions)	Green public procurement	Price support for low-carbon materials either through direct procurement at green premium or through contract-for-differences (CfDs) for public infrastructure projects	Fiscal and financial
	Standards on emissions performance of end-products that use low-carbon materials (embedded carbon)	Regulations on use of low-carbon materials (such as steel/cement) in end-use sectors like automotive, shipping, and manufacturing.	Regulation
	Standards on use of by-products (ex: captured CO2)	Regulations on use of captured CO2 in high-value markets	Regulation
	Labelling of green end-use products	Accreditation of products in line with specific environmental/emission standards to advertise	Regulation

Category	Instrument	Definition	Instrument Type
		environmental quality or characteristics of the product	
	Interoperability/globally accepted standards for green and low-carbon materials	Internationally aligned definitions on varying degrees of 'green materials'" to standardize production processes and support investment disclosures	Regulation

Recommendations

Having identified potential ways to increase the mobilization of transition finance through financial instrument issuances through the IFSC, our recommendations, aimed at policy and regulatory levers that could be used and/or may be required, are as follows:

1. **Taxonomy compliance for transition finance** – Providing a reliable investment opportunity for international investors where they can trust in the compliance of underlying instruments with global standards (or having an IFSC Taxonomy), could be useful for issuing transition finance instruments through the IFSC. Given that investors would come from various jurisdictions, it is recommended that IFSCA allows the compliance of transition finance products with the taxonomies of key jurisdictions, wherever the issuances are directed, till MoF, GoI issues its own Green Finance (including transition finance) taxonomy. IFCSA could provide adequate assurance to investors, preferably through third- party assurance providers. IFSCA could also consider laying out the following compliance requirements, and state the incentives for the issuance of transition finance instruments from IFSC:

    a. Transition finance instruments should comply with at least one of the key taxonomies recognized in leading markets. To start with, IFSCA can recognize the taxonomies detailed in Appendix 2: Definitions and Guardrails.
    b. Issuers should comply with necessary compliance requirements for individual taxonomies, file compliance reports, and third-party assurance reports with IFSCA.

2. **Tax Incentives should be provided** to reduce the cost of transition finance for borrowers/investee companies investing through GIFT-IFSC till 2030, such as waiver of withholding tax for foreign investors/reduction of the withholding tax to 4%.

3. External Commercial Borrowings (**ECB) in Automatic Route** - Allow the raising of funds via transition finance instruments in automatic route in ECB.

Box 1: ECB Automatic Route

ECB refers to commercial loans, in the form of bank loans; buyers' credit; suppliers' credit; securitized instruments (e.g., floating rate notes and fixed rate bonds); availed from non-resident lenders with a minimum average maturity of 3 years. ECB can be accessed from two routes: (i) Automatic Route, and (ii) Approval Route. ECB for investment in real sector comes under Automatic Route and do not require RBI / Government approval.

Automatic Route: Corporates registered under the Companies Act, except financial intermediaries, are eligible to raise ECB from internationally recognized sources such as international banks; international capital markets; multilateral financial institutions; export credit agencies; suppliers of equipment; foreign collaborators; and foreign equity holders. The maximum amount of ECB that can be raised by a corporate is USD 500 million or equivalent during a financial year. ECB can be raised only for investment in new projects and modernization/expansion of existing production units in the real sector - industrial sector (SMEs) and infrastructure sector - in India.

Current challenges: There are restrictions on end-use. For example, restrictions do not allow investments to go into projects such as Smart Cities or in the areas of water supply. Apart from end-use restrictions, the current requirements around minimum maturity time are also not conducive for investments in required sectors via the ECB route. At present, the minimum maturity period is 3 years which does not allow for short-term investing. The idea here is that since there is always an option to make short-term investments even in long-term projects in the domestic scenario, the same flexibility could be afforded to international investors. Further, there is also an element of pricing, where the current regulations put a cap on the spread. Ideally, the longer the tenure, the higher the pricing. However, with the cap, longer tenure investments become less appealing to investors since they are unable to get the required return.

4. **Encourage setting up of Green FinTech in the GIFT-IFSC** (with suitable tax incentives) that can offer services to debt raising companies and international investors and catalyze the market. This initiative could cover Fintech applications including:
    a. Support for disclosures pertaining to transition finance, with specialization in specific industries.
    b. ESG/ transition finance data providers
    c. ESG registries to record and maintain provenance of data and reports.
    d. Third-party assurance services for transition financing instruments

5. **Blended Finance Mechanisms** –Blended finance mechanisms allow for risk sharing and crowding in commercial finance to improve the acceptability of transition finance instruments. Policy interventions like the following would have a positive impact on the adoption of transition finance instruments:

a. Encourage public sector entities like National Credit Guarantee Trustee Company (NCGTC) to set up credit guarantee funds for transition finance instruments offered by Indian companies. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTSME) could also set up a separate entity to be used for loans given by banks from IFSC based branches.

b. Encourage public sector entities like Indian Renewable Energy Development Agency (IREDA), Power Finance Corporation to set up transition finance funds, specifically credit funds, and invest in high-risk tranches of transition finance instruments, which can help improve the uptake of transition finance instruments.

c. Use of Philanthropic and CSR Funds– Currently, Corporate CSR funds cannot be invested for profit. Regulatory relaxations should be given to provide such funds for high-risk activities like development of new green technologies, implementation of projects involving newer/untested green technologies, performance incentives.

See **Box 2** below for clarification on what qualifies as 'Blended Finance'.

6. **Enhanced disclosures** – While the above measures are geared to improve the cost of transition finance and improve supply, certain measures are needed to improve the demand for transition finance.

    a. **ESG disclosures by corporate entities:** SEBI Business Responsibility & Sustainability Reporting (BRSR) guidelines are an important step forward to improve ESG disclosures of listed corporates and nudge these companies to embark on the path of decarbonization. If the BRSR disclosure requirements are expanded to cover the disclosures of net-zero targets and decarbonization roadmap of the listed entities, it will significantly influence the demand for transition finance.

    b. **Climate risk disclosures by financial entities:** The RBI draft paper on climate risk disclosures for banks will increase the demand for transition finance by real economy corporate entities, as banks define their net-zero targets and look to reduce their financed emissions. The MoF can encourage the Insurance regulator and the Pension regulator to expand similar climate risk disclosures for their regulated entities which will further increase the demand for transition finance and accelerate the decarbonization of India

Box 2: What Qualifies as Blended Finance?

Blended finance—the strategic use of development and other concessional finance to mobilize commercial finance for sustainable development—could play more of a role in scaling transition finance in India, as well as in financing for overall sustainable development; but is yet to realize even a small fraction of the potential it presents.

Blended Equity

The nature of impact investing in India is quite close to that of commercial financial investments, with a focus on later-stage investments and an expectation of significant returns. Blended equity presents an opportunity to finance smaller and emerging companies in niche climate change segments that have the potential to scale over the next few years.

Each category of investor is driven by a typical risk, return, and impact profile; thus, capital needs to be mixed from a range of investors while providing differentiated risk-return for a given impact. Therefore, there is a need to pool investors and structure innovative financial mechanisms (e.g., a blended fund) that allow different risk, return, and impact requirements to be met with different classes of shares. Concessional equity will increase the risk-adjusted return rate for private investors, allowing the fund to invest in climate change businesses with a high economic rate of return and relatively lower internal rate of return, in which private sector financial investors would not have invested independently. This concessional contribution could be like a first-loss catalytic contribution (Junior equity), or a capped return structure.

Example: Green Growth Equity Fund (GGEF) was established with anchor investment from India's National Investment and Infrastructure Fund (NIIF) and Foreign, Commonwealth & Development Office (FCDO), Government of UK. GGEF invests in scalable operating companies and platforms across clean energy sectors. NIIF and the UK Government have committed GBP 120 million each into the Fund.

Blended Debt

The perceived risk of early-stage technologies acts as a major barrier to accessing affordable debt financing from traditional lenders. There is a necessity for blended finance mechanisms/structures to facilitate debt financing at affordable interest rates.

One such mechanism is an inverted subordinate debt structure where the concessional funder's debt contribution is subordinate to senior loans and is priced *lower* than senior loans, getting the second charge on assets. An inverted/subordinated debt can be structured as an on-lending facility that can increase the availability of debt from local FIs, improve access to financing, and help build local lending capacity. DFIs can on-lend concessional capital via credit lines to local FIs, who then blend it with their own higher-cost funds to provide loans to end-users at lower-than-market rate.

Another blended finance instrument is Partial Credit Guarantee (FLDG/PCG) which can be structured as a credit guarantee mechanism (CGM). A CGM would work as a bilateral loss-sharing agreement between the credit guarantee fund and lending institutions (banks/FIs), supporting the lending institutions in case of delay in debt servicing, and also reimbursing them for a portion of any losses incurred due to payment default. Philanthropies could provide concessional capital to the CGM Fund. Member lending institutions (MLIs) (empaneled lenders) would avail guarantees for their loan portfolios in exchange for a guarantee fee.

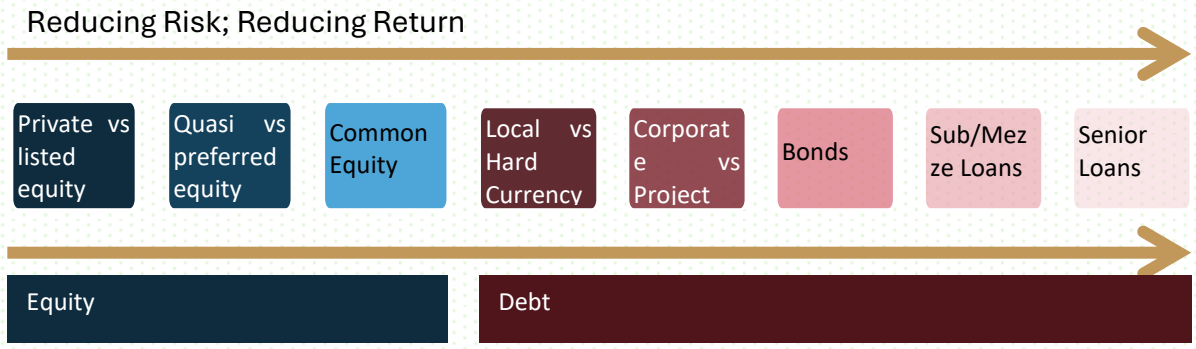
8.3 Pillar 3 – Financial Mechanisms (Structures) and Financial Instruments

While transition finance is a relatively new concept, green finance has been around for quite some time. Transition finance addresses the same need to reduce emissions from economic activities but does not necessarily need them to be absolute/near-zero emissions. While designing financial instruments or attempting innovation in financial instruments, it is important to first look at basic aspects, such as '*what is a financial instrument*?'. Financial instruments essentially remain the same, aligned with the basic theoretic capital stack of a firm /business ranging from pure equity to pure debt along the line of risk and return, as explained in the following graphic.

Capital stack is a spectrum from equity to debt with reducing returns in line with reduced risk and has various intermediate instruments in between. Some hybrid instruments are possible such as those that combine fixed income and variable returns.

Financial instruments across the capital stack would have to align/comply with the definitions and guardrails laid out in Pillar 1 – Scope and Definition.

Figure 2: Types of financing instruments



Capital stack is used via different mechanisms. Typically, financial mechanisms are institutional approaches defined by financial regulators in India – the RBI, IRDAI and SEBI.

Examples of existing and novel financial mechanisms (also called structures) include a) Securitization b) Blended Finance c) Alternative Investment Funds d) Guarantees/Risk Sharing Mechanisms e) Carbon finance mechanisms, etc. Each mechanism uses one or multiple financial instruments which are: equity, (even Junior Equity), senior debt, subordinate debt, preference shares, hybrid instruments, guarantees, etc.

An indicative list of structures and mechanisms is presented in Figure 3. The ones in dark red are for financing and the lighter ones are de-risking mechanisms.

Figure 3: Financing and de-risking mechanisms and structures

New and innovative financial mechanisms that could support scaling transition finance, may include a range of traditional debt and equity instruments, and risk mitigation instruments like insurance and guarantees. Some novel instruments that already exist in the market include transition bonds, sustainability-linked bonds, and loans among others.

Recommendations

Following financial instrument that can be enabled in GIFT-IFSC to mobilize transition finance.

1. **Equity and debt instruments**

	Transition Bonds/ Transition Loans	**Convertible Transition Bonds/ Loans**	**Equity/AIF**	**Sustainability - Linked Bond/Loan**	**Sustainability-Linked Derivative (SLD)**
Nature of Instrument	Debt	Debt instruments with option to convert into equity at a predetermined level. This instrument offers flexibility to investors seeking the safety of bonds but with the potential to convert to stocks in favorable market conditions.	Equity/ Quasi-Equity/ Convertible instrument	Debt instruments with interest rate linked to predetermined outcome	A derivative transaction with Key Performance Indicators (KPIs) built into contractual arrangements of SLD transactions.
Subscriber	Banks/FIs, Private Investors etc	FIs, Funds	Funds, AIF etc.	Banks/FIs, Private Investors etc.	

	Transition Bonds/ Transition Loans	Convertible Transition Bonds/ Loans	Equity/AIF	Sustainability - Linked Bond/Loan	Sustainability-Linked Derivative (SLD)
Purpose	Reducing carbon emissions intensity of operations	Reducing carbon emissions intensity of operations	Investment into capex for low-carbon/ energy-efficient technologies with specified outcomes	General corporate purpose with outcome linked to SDG 13	Incentivize ESG performance.
Methodology/ Framework to be adopted	Issuers can adhere to international standards set by organizations like LMA, ICMA, and CBI, among others		Transition plan /pathway to be put in place. Third-party by verification may be prescribed at overall company level	Issuers can adhere to international standards set by organizations like LMA, ICMA, and CBI, among others.	International Swaps and Derivative Association (ISDA)

2. **Blended Finance** Instruments for equity and debt structure. Tables 7 and 8 provide details of how blended finance can be used for equity and debt structures, respectively[11].

Table 7: Blended finance for equity investments

	Structure I (Capped upside return)	Structure II (Junior equity)
Anchor Foundations' contribution	Investment with a capped return, thereby passing the	Contribution as catalytic first-loss capital, thereby providing downside protection to other

[11] https://www.climatepolicyinitiative.org/blended-finance-for-climate-investment-in-india-equity-debt/

	Structure I (Capped upside return)	Structure II (Junior equity)
	potential upside to other investors.	investors. It is also termed as the Junior equity structure.
Investor's returns	Possible returns will be high. Upside incentive for investors.	Returns would be lower as the upside is shared proportionately with foundations' contribution.
Capital protection	Investments from anchor foundations and other investors will be exposed equally to any downside risk (capital erosion).	Investors capital would be protected at least to an extent of anchor foundations' contribution by way of first-loss protection.

Table 8: Blended finance for debt investments

	Structure I (Inverted subordinate debt)	Structure II (FLDG/PCG)
Anchor Foundations' contribution	Subordinate to senior loans but priced lower than senior loans. Gets second charge on assets.	Contribution as catalytic first-loss capital, thereby providing downside protection to other lenders.
Commercial lender	Usual risk-priced interest rates.	Usual risk-priced loans, but interest rates are likely to be lower.
Capital protection	On default recovery, waterfall pays off senior debt first and commercial lenders have the first charge on collateral.	Commercial lenders' capital is protected to the extent of the default guarantee. (For India we found that FLDG does not work so just PCG is better).

3. Trade Finance

Transitioning to a low-carbon economy essentially involves technologies that come in the form of hard physical assets. In some instances, importing such technologies may become a necessity, while in others, India can play an important role as an exporter of certain technologies. In this context, trade finance, which encompasses products such as LCs, bank guarantees, factoring, purchase order finance, among others, can also emerge as an important transition finance product category. As with the case of any other financial product category, the guidance on industry, activity and trajectory would ultimately be an important factor in determining which technologies would be eligible for availing trade finance under the transition finance classification.

4. **Export Credit Agencies (ECAs)** can leverage their position as public capital providers to serve as anchor investors. ECAs, which have so long played a limited role in financing transition efforts, can finance transition activities of SMEs and corporates through the provision of transition loans, guarantees and insurance products. Following a precedent from global renewables investments, MDBs could provide project financing through an ECA. ECAs would be required to play a role in closing the investment gap and providing credit enhancements to unlock private debt financing. Significant lending for non-recourse projects or projects with non-investment grade counterparties is unlikely without a vast majority of debt (i.e., 80% and upwards) being covered by guarantees, that can be provided by ECAs. Insurers could also have a higher likelihood of providing credit, political and performance risk insurance for investments in new technologies, when working under the preferred creditor umbrellas of ECAs.

5. **Carbon credits**

   Carbon credit is a tradable instrument used to monetize the value of carbon emissions. Usually, one credit is measured in one ton of carbon dioxide or the equivalent in other greenhouse gases. Carbon credits are the basis for cap-and-trade-based regulated carbon markets, where entities in a given sector and jurisdiction are given an emissions allowance (cap) and are allowed to trade credits to promote economic efficiency in emissions reduction.

   Carbon credits can be used to structure hybrid instruments and mechanisms. Two such examples – Carbon Contract for Difference (CCfD) and an innovative Results-Based Carbon Transition Bonds are described in the Box 3 below.

Apart from innovation in instruments and mechanisms, tools that support, capture and standardization of information would also be required. For example, a carbon rating could be used as a standardized measure of the emissions intensity of financed activities. Strong disclosures and tools like carbon rating play an important role in enabling innovation in instruments and structures. This is to ensure that all institutions use standardized approaches toward emissions management, since emissions reduction remains one of the key objectives of transition finance

Box 3: Examples of Innovative Carbon-based Instruments

1. Carbon Contract for Difference (CCfD)

Breakthrough technologies required to decarbonize industrial sectors can have substantial incremental production costs compared with conventional technologies, a significant barrier to adoption. Moreover, market uncertainties can lead to revenue uncertainty, directly impacting a project's access to finance; financing structure and costs; cost of carbon abatement; and ultimately, financial viability. A Carbon Contracts for Difference (CCfD) mechanism can be used to address this barrier. A project-based CCfD is a bilateral contract between a government/government-owned entity and a low-carbon project, where the latter would receive payments equal to the difference in the carbon price that is required to make the project viable (the strike price), and the price of carbon in the market. If the price of carbon in the market is higher than the strike price, then the project pays back the difference to the government/ government-owned entity.

A CCfD is both a policy and a financial instrument that covers the incremental cost of low-carbon production and de-risks investments by addressing market uncertainties (volatility in carbon price). Key benefits of CCfDs include revenue stability, enhanced bankability, improved financing conditions, and lowering of carbon abatement costs.

2. Results-Based Carbon Transition Bonds

This hybrid instrument is an alternative to transition bonds, where a part of the coupon repayment to the investor is in the form of carbon credits generated from the carbon emissions abated during the life of the project, while the remainder is financial returns. The amount of repayment in the form of carbon credits would be computed by multiplying the volume of carbon emissions avoided (against a baseline) and the price of carbon, and the same would be amortized across the tenure of the bond. The carbon returns would then be deducted from the coupon rate to determine the financial returns.

9. Appendixes

Appendix 1: Evolution of Transition Finance Definitions

Organizations	Definitions	Sources
Transition Pathway Initiative (TPI)	TPI analyses whether a company's practice is aligned with the goal of limiting global warming to 1.5°C. Companies are assessed both on their carbon governance and management practices -- a precursor to climate action, and their greenhouse gas emissions pathways -- the ultimate output and what matters to the planet.	*https://www.lse.ac.uk/Research/research-impact-case-studies/2021/transition-pathway-initiative, 2017*
EU taxonomy	Within the EU Taxonomy, 'transition finance' refers to investments aimed at facilitating the transition to a more sustainable economy. This includes investments in activities and projects that contribute to reducing greenhouse gas emissions, increasing resource efficiency, or promoting the adoption of clean and sustainable technologies.	*EU Taxonomy, Jun 2020, Taxonomy delegated regulation for Technical Screening Criteria (TSC), Jul 2021*
CBI	Climate Bond Initiative (CBI) defines transition finance as the investment required to reduce GHG emissions to levels 'commensurate with meeting the goals of the Paris Agreement' (Anna Creed, 2020).	*White Paper Financing Credible Transitions, Sep 2020, Discussion Transition Finance for Transforming Companies, Sep 2022*
ADB	Transition finance is a concept where financial services are provided to high carbon-emitting industries – such as coal-fired power generation, steel, cement, chemical, paper making, aviation and construction – to fund their transition to decarbonization.	*Transition Finance is Critical to Address Climate Change, ADB, 2022*
OECD	OECD limits the scope of transition finance to hard-to-abate sectors and argues to concentrate the financing of 'economic activities that are	*Transition Finance: Investigating the State of Play - A Stocktake of Emerging*

Organizations	Definitions	Sources
	emissions-intensive, do not currently have a viable green substitute (technologically, economically or both), but are important for socio-economic development'.	*Approaches and Financial Instruments, OECD, 2022*
ICMA	International Capital Market Association (ICMA) defines transition finance as 'investments that effectively address climate-related risks and contribute to alignment with the goals of the Paris Agreement" (ICMA, 2020).	*Climate Transition Finance Handbook: Guidance for Issuers, Sep 2023*

Appendix 2: Definitions and Guardrails

Jurisdictions/Regulators

	Industry/Sector	Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
ASEAN *(Transition Finance Guidance, Oct 2023)*	• 3 labels to identify transitioning entities. - 1.5° C aligned/aligning. - 2.0°C aligned/aligning - Progressing	• Proposes reference to taxonomies to identify activities/processes. • Cites following examples of taxonomies: ASEAN, Singapore, Thailand, Indonesia, Malaysia, Philippines	• All of below • 1.5°C/2.0°C aligned • Science-based model or country/industry body led commitment	Na	• All financial instruments
EU *(EU Taxonomy, Jun 2020, Taxonomy delegated regulation for Technical Screening Criteria (TSC), Jul 2021)*	• 6 environmental objective labels allocate economic activities to 9 sectors. • 5 (out of 9) qualify as transitional • Energy, construction & real estate, information & communication, manufacturing (cement, iron & steel etc), transport (with 28 sub-sectors listed)	• Multiple processes listed for each of 28 sub-sectors with emissions thresholds (aligned with 1.5°C) • For example, for iron & steel 6 listed, including electric arc furnace	• All of below • 1.5°C aligned • Do not hamper development and deployment of low- carbon alternatives • Do not lead to lock-in of carbon intensive assets • Science based	Na	Na
Japan	• 9 listed • Iron & steel, chemicals,	• Proposes technology roadmaps for each of	• All of below • 1.5°C/2.0°C	Na	• Use of proceeds

	Industry/Sector	Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
(Basic Guidelines on Transition Climate Finance, May 2021, supplemented by 9 sector specific roadmaps)	electricity, gas, oil, cement, paper & pulp, shipping, aviation	the 9 listed industries with emissions thresholds (aligned with 1.5°C) • For example, for iron & steel: 14 technologies with 25 activities	aligned • Science-based, including targets and pathways		instruments (bonds or loans) • Sustainability-Linked Bonds/Loans
MAS *(Singapore-Asia Taxonomy for Sustainable Finance, Dec 2023)*	• 3 labels to classify all economic activities - Green (sustainable) - Amber (transition) - Red (ineligible) • 8 listed under Amber • Energy, transport, construction, industry (iron & steel, cement), agri & forestry, CCUS, IT, waste/circular economy (with 40 sub-sectors)	• Multiple processes listed for each of 40 sub-sectors (under the 8 industries/sectors that come under the Amber label), with thresholds aligned with 1.5 degrees C for each • For example, for iron & steel: 3 listed, including blast furnace	• Any one of below • Moving towards green transition pathway (1.5°C) in a defined time frame • Facilitating significant emissions reductions with a prescribed sunset date	Na	• Na

Note: The analysis in the above table is based on the authors interpretation and review of the various initiatives evaluated. In order to facilitate a like for like comparison, terminology used to evaluate the various parameters may differ in certain instances from the original documentation.

Standard Setters/Coalitions

	Industry/Sector Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
CBI *(White Paper Financing Credible Transitions, Sep 2020, Discussion Transition Finance for Transforming Companies, Sep 2022)*	• 4 labels to classify economic activities by entities/activities - Near-zero (emissions) - Pathway to Zero - Interim - Stranded • For entities: Transition label applicable to - Pathway to Zero - Interim • For activities: Transition label applicable to - Pathway to Zero - Interim - Stranded	• Netzero by 2050 (in line with 1.5°C trajectory) • Science-based • Offset don't count: but should count upstream scope 3 emissions • Technology viability (over economic competitiveness) • Action not pledge: backed by operating metrics	Transition plan, credible targets and metrics	• Entity Level - Equity investments - General purpose debt - SLBs/SLLs • Activities Level - Use of proceeds bonds/loans
GFANZ *(Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance, Nov 2020)*	• Specifies 4 financing strategies that facilitate real economic transition - Climate Solutions - Aligned - Aligning - Managed Phaseout • But does not go into specifying business/activities	• In line with achieving net-zero by 2050 • 1.5°C aligned • Foundation, implementation strategy, engagement strategy, metrics, and targets	Na	Na
ICMA	Na	• 1.5°C/2.0°C aligned • Business model	Na	• Use of proceed instruments

	Industry/Sector Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
(Climate Transition Finance Handbook: Guidance for Issuers, Sep 2023)		environmental materiality • Climate transition strategy and targets to be science-based: aligned with the Paris Agreement • Implementation transparency, including annual disclosure of capex and opex plans		• General purpose sustainability-linked instruments (SLBs)

Note: The analysis in the above table is based on the authors interpretation and review of the various initiatives evaluated. In order to facilitate a like for like comparison, terminology used to evaluate the various parameters may differ in certain instances from the original documentation.

Institutions

	Industry	Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
Barclays *(Transition Finance Framework, Feb 2024)*	• 11 listed • Agri, cement, chemicals, energy, power & utility, real estate, metals, mining, aviation, ground transport, shipping	• 110+ listed • Examples include Carbon Capture, Utilization and Storage (CCUS), WTE, low carbon fuels	• Any one of below • 1.5°C /no overshoot benchmark global scenarios such as IEA NZE, IPCC, and PRI • Regional or national scenario pathways • Regional sustainable	• 90% of company revenues derived from transition framework activities	• Exclusions: M&A, SLB, AUM, in ESG funds, Trading/market making, Liquid securities financing, derivatives

	Industry	Activity/Process	Trajectory	Test for General Corporate Finance	Instruments
			and transition finance taxonomies (e.g. EU)		
DBS *(Sustainable & Transition Finance Framework & Taxonomy, Mar 2022)*	• 3 labels to classify economic activities of industries - Green - Transition - UN SDG • 11 listed under transition • Automotive, metals & mining, food & agri, O&G, chemicals, power, infrastructure, shipping, aviation, telecom, logistics	• 40+ listed • Examples include pumped storage, bio-gas, CCUS	• All of below • 1.5°C/2.0°C aligned • Enables the wider application or integration of less carbon-intensive options	• Divestitures, diversification or decarbonization towards lower exposure to carbon intensity or emissions reductions	• All financial instruments
Standard Chartered *(Transition Finance Framework, 2021)*	• 8 listed • Iron & steel, railways, agri, aviation, cement, aluminium, shipping, other	• 75+ listed • Examples include CCUS, low emission fuels, material efficiency	• All of below • 1.5°C aligned • Avoid lock-in of carbon-intensive asset	• 90% of company revenues derived from transition framework activities	• Asset as well as entity-based financing

Note: The analysis in the above table is based on the authors interpretation and review of the various initiatives evaluated. In order to facilitate a like for like comparison, terminology used to evaluate the various parameters may differ in certain instances from the original documentation.

Appendix 3: Financial Mechanisms and Instruments

Mechanism	Instrument	Type	Source	Description	Applicable existing examples
RD&D Funding	Grant	Financing	Public, Private	RD&D Funds (primarily grants) support low-carbon technology development during concept, prototype, and early demonstration stages.	Ministry of Steel (MoS) has set up Steel Development Fund (SDF) to fund up to INR 150 crore per year for R&D in the steel sector.
Venture Capital (VC) and Private Equity (PE)	Equity	Financing	Public, Private	VC/PE firms provide early-stage risk capital (primarily equity) to companies, mostly start-ups, that are not listed on the public stock exchange. This source of capital is not for steel companies themselves, rather, for startups that innovate and develop new low-carbon technologies.	A total of USUSD 53.7 billion of VC/PE capital was invested in climate-tech start-ups in 2021. Temasek, Breakthrough Energy Ventures, and Future Ventures have been major investors of this capital.
Viability Gap Funding (VGF)	Subsidy	Financing	Public	Viability gap funding or capex grants is the financial support provided by the government to projects that are not commercially viable but are justified because of their overall economic and development impact.	During 2015-17, GoI launched VGF scheme for solar projects, covering up to 30% of the project cost, or INR 2.5 crore per MW.
Project Preparatory / Technical Assistance Facility	Grant, Equity	Financing, De-risking	Public	PPF/ TA facilities provide grant funding to decarbonization projects to defray the costs related to project preparatory activities and enable the projects to become investment ready.	US India Clean Energy Finance (USICEF): a USUSD 20 million facility that supports projects in distributed solar space and helps them scale into viable projects.
Development Equity	Equity	Financing	Public, Private	Development equity funds support early-stage ventures by providing project development assistance and early-stage risk capital, to scale and	IFC Infra Ventures: a USD150 million global infrastructure project development fund that combines

				raise debt financing, at which stage, the capital will be converted into an equity position in the project.	early-stage risk capital and project development support.
Blended Equity, Debt	Concessional equity, debt	Financing	Public, Private	Blended finance structures blend concessional capital from lenders and investors to lower the overall cost of capital for projects faced with unviability at commercial rates.	Tata Cleantech – GCF credit line: a USUSD 200 million blended debt financing facility for solar rooftop segment.
Carbon Finance	Carbon credits	Financing	Public, Private	Carbon finance is an innovative financial intervention that allows the flow of capital from emissions- intensive projects to projects that abate emissions, through the trading of carbon credits.	International Voluntary Carbon Markets: allow carbon emitters to help offset their emissions by purchasing carbon credits generated by low-carbon projects.
Contract for Difference (CfD)	Subsidy	Financing, De-risking	Public	A project-based CfD is a bilateral contract between the government/government-owned entity and a low-carbon project that covers the incremental cost of production compared with conventional technology. The low-carbon project would receive payments equal to the difference in the levelized cost of production, using a low-carbon technology versus the 'market price' of steel produced using conventional technologies. A CfD can also apply to carbon price.	-
Sustainability-Linked Bonds (SLBs)	Debt	Financing	Private	SLBs are bonds where the proceeds of issuance are not defined, and the borrower can use the funding as they see fit while committing to achieve defined sustainability targets within a given timeframe. The characteristics of these bonds, like coupon rate, changes, based on performance of the defined targets.	Ultratech Cement raised USUSD 400 million through India's first SLB issuance. JSW Steel raised USUSD 1 billion through SLBs.

Transition Finance (loans/bonds)	Debt	Financing	Private	Financing intended for economic activities that are emissions-intensive, do not have a viable green (near-zero emissions) substitute but are important for socio-economic development. The use of proceeds of transition finance instruments is defined. The borrower must use the proceeds towards transition activities.	-
Credit Guarantees	Guarantee	De-risking	Public, private	Credit guarantees would work as a bilateral agreement between the guarantor (sovereign or FI) and lending institutions (banks/ FIs) for risk-sharing in case of delay/default in debt servicing, wherein the guarantor reimburses the lending institution/s for a portion of the losses incurred due to payment default by the borrower.	Partial Risk Sharing Facility (PRSF): a USUSD 43 million facility under which partial credit guarantees are provided to cover a share of default risk faced by FIs in extending loans to energy efficiency projects implemented through Energy Service Company (ESCOs).
Credit Enhancement	Guarantee	De-risking	Public, Private	Credit enhancement mechanisms support decarbonization projects in accessing capital markets through issuance of credit-enhanced bonds to domestic and international investors. The facility would lower the cost of credit enhancement and unlock the flow of capital from the bond market.	-
Credit Insurance	Insurance	De-risking	Private	Credit insurance is a risk management tool that covers the insured against the risk of outstanding receivables.	All general insurance companies have a credit insurance product for trading companies.