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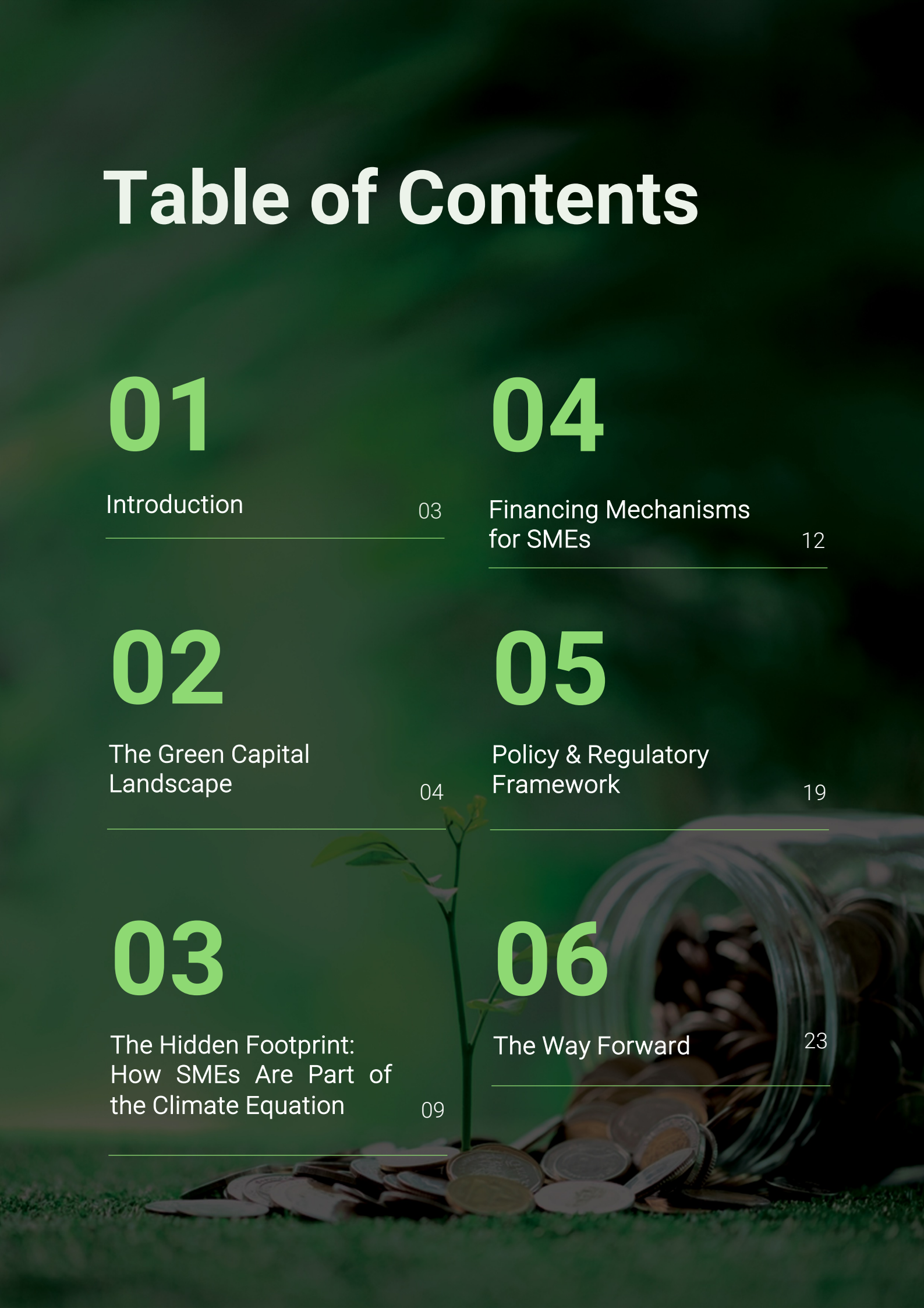
Financing the Future: Bridging India's $11 Trillion Annual Green Capital Gap

Table of Contents



01

Introduction

India's ambitious "Panchamrit" commitments, unveiled at COP26, clearly placed the country as a global leader spearheading the fight against climate change. The five commitments targeting the five sector elements – clearly paved way for setting the nation's climate action over the coming decades. However, the climate finance landscape of India shall require a comprehensive strategy for translating these commitments into reality. It is critically important at this point to explore the challenges and opportunities in unlocking the “green capital” i.e. the potential financial investments or assets which could be directed towards environmentally sustainable activities and projects such as natural resource conservation, reduction in greenhouse gas emissions, promotion of renewable energy and other environmentally conscious goals to support the nation’s climate transition.

Transitioning to a green and low-carbon economy is both a challenge and tremendous opportunity for the nation and “Decarbonization” is the key. Decarbonization primarily includes processes aimed towards reducing or eliminating greenhouse gas emissions, particularly the carbon monoxide from the atmosphere. This includes shifting away from fossil fuels (Coal, oil, and natural gas) i.e. the traditional energy sources and transitioning to cleaner and zero-carbon alternatives. The transition towards decarbonization is hinged on widespread adoption of sustainable practices, and SMEs being the engine of local economies and drivers of innovation and local solution are at the heart of this transformation. However, small and medium-sized enterprises (SMEs) with their limited technical and financial exposure and capabilities face significant challenges in accessing the green capital they need to implement sustainable practices. Some of barriers towards adopting low-carbon technologies faced by the SMEs include technology performance risk, unproven business models, high upfront investment costs, policy and regulatory uncertainty, lack of appropriate incentives, supporting infrastructure, information, and knowledge gaps, limited access to suitable financing and financial services due to lack of tailored solutions.

This insert explores the crucial role of "green capital"- investments in driving "decarbonization," the reduction of greenhouse gas emissions. It highlights the vital role of SMEs in the sustainability transition, and delves into the challenges, highlighting opportunities and solutions to unlock the potential of SMEs in building a greener future.

02

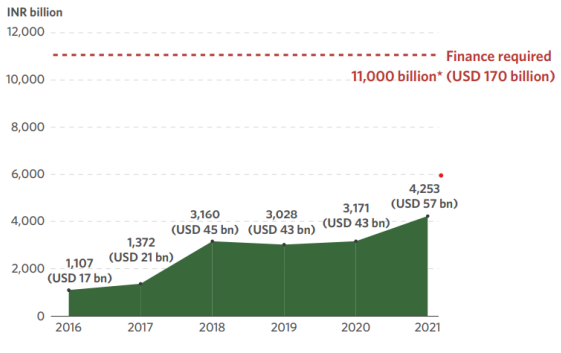
The Green Capital Landscape

2.1 Global and Indian trends in sustainable financing

Green financing is growing in prominence to help address climate change and its overarching effects on the planet, societies, and economies. Even during global financial turmoil, climate finance proved to remain highly resilient and continued to grow, amounting to USD 1.46 trillion in 2022. It has maintained this growth trend during the COVID-19 pandemic, economic recovery measures, rising inflation, and geopolitical tensions in nations. While 2022 marked a record high in climate finance, elevated inflation may have increased costs for certain climate initiatives. Preliminary analysis suggests that climate finance flows likely surpassed USD 1.5 trillion in 2023, with key growth drivers continuing to be renewable energy (RE) and low-carbon transport. In 2024, the Green Climate Fund (GCF) approved $686.8 million in financing, aiming to mobilize approximately $1.5 billion for 11 projects across 42 countries, benefiting 115 million people. This investment underscores the growing commitment to sustainable development worldwide.

India on the other hand with its ambitious targets to reduce its carbon footprint and transition to a low-carbon economy is attempting to ramp up its green finance to successfully implement the required strategies. Preliminary estimates by the Government of India suggest that India needs INR 162.5 trillion (USD 2.5 trillion) by 2030—or INR 11 trillion annually (USD 170 billion)—to achieve its Nationally Determined Contributions (NDC) (GoI 2015).

Figure ES2: Tracked green investment and estimated requirements to meet current NDC (INR bn)



*This amount represents the annual average of INR 162.5 trillion required over 2015-2030 as per India's NDC 2015 targets.

Source: Chakravarty, M. et al. (2024) Landscape of green finance in India - climate policy initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2024/12/Landscape-of-Green-Finance-in-India-2024.pdf (Accessed: February 2025).

The latest tracked green finance for mitigation in India represents approximately 30% of the total finance needed to meet the country's NDC (GoI 2015).

Further, another important thing to note is the proposed climate finance taxonomy in the Union Budget 2024-25 is a valuable step towards guiding India's economy towards a sustainable and low-emission future. By setting clear definitions for green investments and aligning them with national climate goals—like the updated NDC and the upcoming Adaptation Plan, the taxonomy shall be instrumental in providing the much-needed clarity, enhancing investor confidence, and driving the expansion of green and climate-related investments.

Role of ESG (Environmental, Social, Governance) in investment decisions

Beyond traditional financial metrics, several critical factors are leveraged to assess investment risks and opportunities. Investors committed to reduce their impact on the planet and promote sustainability are inclined towards supporting companies with similar vision and approach. Environmental, Social, and Governance (ESG) ratings are pivotal in enhancing investor confidence in sustainable assets. ESG ratings offer a comprehensive evaluation of a company's or financial instrument's sustainability profile by analyzing its exposure to sustainability risks and its broader impact on society and the environment. With capital markets increasingly integrating sustainability considerations, ESG ratings have become instrumental in shaping investment strategies and fostering investor trust in sustainable financial products.

> The ESG Investing Market, valued at **USD 27,480 billion** in 2023, is projected to reach **USD 130,880 billion** by 2032, **growing** at a **17.31% CAGR** from 2024-2032.

ESG-focused investors prioritize and prefer companies addressing climate change and integrating sustainable business practices. They conduct rigorous assessments of corporate strategies related to carbon footprint reduction, renewable energy adoption, energy efficiency initiatives, and net-zero emissions targets. Additionally, participation in carbon offset programs serves as a key indicator of a company's dedication to environmental stewardship. The growing momentum behind ESG investing reflects a shift in investor priorities—seeking not only strong financial returns but also alignment with broader societal and environmental objectives.

Recent reports indicate a significant surge in ESG investments in India, rising from $330 million in 2019 to $1.3 billion in 2023, highlighting the growing emphasis on sustainability-driven financial strategies. This heightened investor interest in ESG-focused companies has prompted regulatory interventions to enhance transparency and safeguard investors across jurisdictions.

In the United Kingdom, ESG regulations are embedded within multiple legislative frameworks, including the Corporate Governance Code by the Financial Reporting Council, which sets guidelines on board leadership, risk management, and internal controls. Additionally, the Companies (Strategic Report) Climate-related Financial Disclosure Regulations and Companies, Partnerships and Groups (Accounts and Reports) Regulations reinforce disclosure requirements, promoting corporate accountability and environmental responsibility.

Meanwhile, the United States is transitioning from a voluntary to a mandatory ESG regulatory framework, aligning its approach with the European Union. The Securities and Exchange Commission's (SEC) proposal on Climate-Related Disclosures mandates public companies to report climate-related financial data, ensuring greater transparency and investor confidence in sustainability-linked decision-making.

2.2 Regulatory frameworks and green finance policies

Robust and stringent regulatory and policy frameworks play a crucial role in providing a supportive environment for advancing green and sustainable financing by incentivizing environmentally beneficial investments and reducing greenhouse gas emissions. The transition to a green economy is regulated by policies that incorporate environmental, social, and corporate governance criteria, underscoring the importance of government backing.

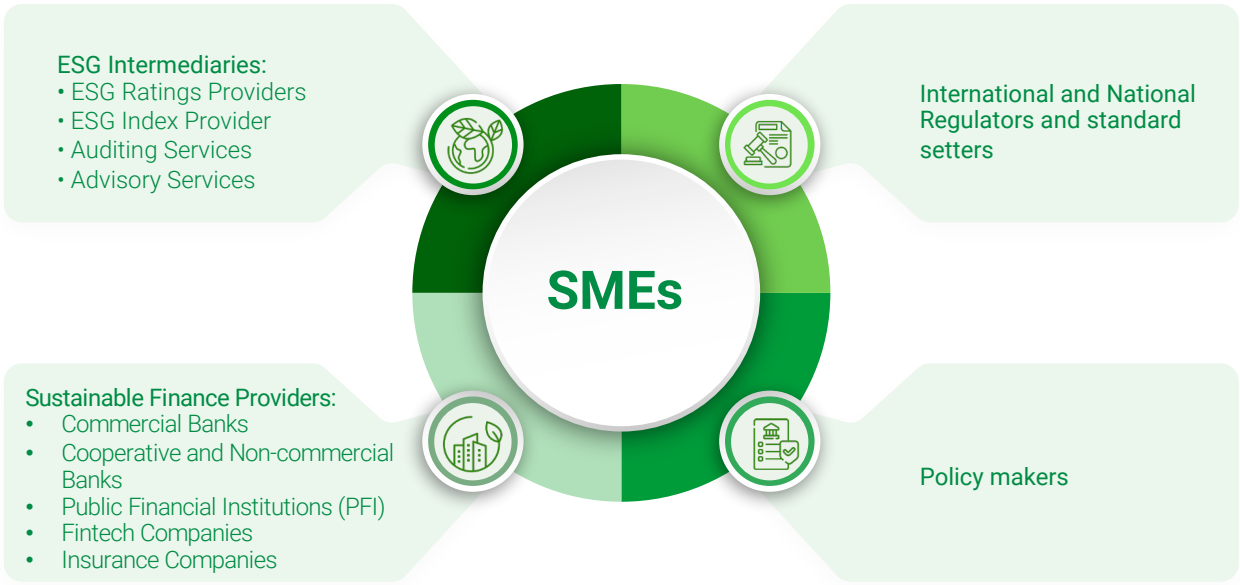
A growing number of jurisdictions around the globe have acknowledged the importance of international harmonization of standards for sustainability disclosures, taxonomies (The taxonomy is a classification system that defines criteria for economic activities that are aligned with a net zero trajectory by 2050 and broader environmental goals other than climate) and financial instruments like green bonds, sustainability loans, etc. ESG integration is another aspect where a lot of emphasis is being laid for enhancing transparency and preventing greenwashing. The Sustainable Finance Disclosure Regulation (SFDR) was initiated as a decisive move by the European Union to ensure transparency in the financial investment sector. The SFDR sets out specific criteria for the classification of ESG products, which are crucial for financial market participants to understand and implement correctly. In addition, the International Sustainability Standards Board (ISSB) is working towards creating global baseline sustainability disclosure standards.

India is also actively supporting its green finance ecosystem by launching various policies like the National Green Hydrogen Mission, Production Linked Incentive (PLI) schemes for renewable energy, etc to promote renewable energy, electric vehicles, and sustainable infrastructure. The Securities and Exchange Board of India (SEBI) of India has also issued regulations on green bonds, and the RBI is focusing on climate-related financial risks.

2.3 Key Stakeholders in the ecosystem

The expansion of sustainable finance has been accompanied by the development of specialized financial instruments and best practices, fostering a comprehensive ecosystem that supports environmentally and socially responsible investments. This ecosystem comprises diverse stakeholders, including governments and policymakers (for setting condusive regulatory frameworks and policies and providing a roadmap with strategies and action plans), financial Institutions like Banks, Insurance companies (for chanelling capital and assessing and managing risks), Investors (to provide capital for green projects), Corporations and businesses (for implementing green projects), Auditing and Rating Institutions (to ensure transparency), Research and Academic Institutions, NGOs, and Civil Societies (to provide knowledge and expertise and ensure accountability), and Standard-Setting Bodies (to promote consistency and transparency through standards and guidelines), each playing a critical role in mobilizing capital for sustainability-driven initiatives. The SMEs sustainable finance ecosystem is structured around key actors, as illustrated below.

Therefore, the **green capital landscape** for the SMEs is mostly governed by **dynamic trends in sustainable finance,** the **integration of ESG principles, stringent regulatory frameworks and policy interventions,** and most importantly the **strategic collaboration among key stakeholders.** A comprehensive understanding of these elements is crucial for **mobilizing capital efficiently,** accelerating **decarbonization efforts,** and advancing **global sustainability imperatives**.



03

The Hidden Footprint: How SMEs Are Part of the Climate Equation

Small and Medium Enterprises (SMEs) are often overlooked in discussions about climate change, yet they play a crucial role in the global economy. SMEs are responsible for a considerable amount of greenhouse gas emissions, resource utilization, and pollution. Their contribution to the supply chains 'hidden footprint' is also undeniable. This is why they form an important piece in the climate change puzzle.

3.1 Impact of Climate Risks on SME Supply Chains

The impact of climate risks on SME supply chain is significant, affecting everything from sourcing of raw materials to distribution and financial stability. Small and Medium Enterprises (SMEs) are particularly vulnerable to these risks due to their limited resources and bargaining power. Below are the key impacts of climate risks on SME supply chains:

3.1.1 Disruption of Raw Material Sourcing

- **Severe Weather Phenomena:** Climate related events such as floods, droughts, wildfires and hurricanes can damage infrastructure, halt/disrupt transportation, and delay delivery of raw material and finished goods.

For instance, floods in Kerala, India (2018) and Cyclone Amphan in Eastern India (2020) disrupted supply chains for SMEs, particularly in the agriculture and tourism sector. Agricultural SMEs faced crop losses and delayed harvests, leading to shortages of raw materials for food processing units. Transportation networks were damaged, causing delays in the delivery of goods to markets. Many SMEs were forced to shut down temporarily, resulting in revenue losses and layoffs.

- **Resource Scarcity:** Climate change can lead to shortage of essential resources like water, energy, and agricultural products. It also leads to rising temperatures which can affect production processes, especially in sectors like textiles, food processing, and manufacturing.

- **Reliance on Single Supplier:** SMEs often rely on smaller suppliers that may lack the resilience to withstand climate-related disruptions and therefore makes them even more vulnerable to the issue.

3.1.2 Price Volatility and Increased Costs

- **Higher Input Costs:** Climate-related resource scarcity can drive up the prices of raw materials, such as crops, metals, and energy and can impact SMEs with tight margins. For instance, in 2020, Arabica coffee prices surged by over 20% due to lower production in India and other major coffee-producing countries. SMEs in the coffee supply chain, such as roasters and exporters, faced higher costs for raw coffee beans, which they could not always pass on to consumers due to competitive markets.

- **Insurance Premiums:** As climate risks increase, insurance costs for businesses and supply chains may rise significantly.

- **Logistics Expenses:** Disruptions in transportation networks due to extreme weather also increase cost of transportation, shipping and storage and affects the margins of SME's.

3.1.3 Compliance and Regulatory Pressures

- Stricter Policies: Governments are enforcing stricter environmental regulations to combat climate change like carbon taxes, emission limits, emission reporting etc. which is affecting how SMEs source and transport goods. These costs can be a burden, especially for smaller businesses with limited resources.

  For example: India's ban on single-use plastics affected SMEs in the packaging, food processing, and retail sectors leading SMEs to invest in alternative packaging materials, which were often more expensive. Many small businesses also faced difficulties in adapting to the new regulations due to lack of awareness and resources.

- Supply Chain Transparency: Customers and larger corporations are increasingly demanding transparency and sustainability in supply chains, forcing SMEs to adopt greener practices which may not be often economical.

3.1.4 Consumer Demand Shift and Reputational Risk

- Consumer Awareness: Consumers and B2B partners are becoming more environmentally conscious and are increasingly demanding environmentally responsible products. If SME's fail to address climate risks in their supply chain, they may face a shift in consumer demand and lose market share.

- Risk of Partnership Loss: Failure to address sustainability concerns can make larger companies skeptical about working with SMEs. This may lead to reputational damage, loss of business opportunities and damage to their existing partnerships.

  For instance, Tata Motors, a leading automobile manufacturer in India, has increased sustainability requirements for its supply chain partners (FY 17). Smaller auto component manufacturers, especially those that lacked the resources to adopt green practices, faced exclusion from Tata's supplier network. This has resulted in SMEs losing long-standing contracts, forcing them to either invest in sustainability upgrades or find alternative buyers.

While climate risks have a profound impact on SME supply chains by disrupting operations, increasing costs, and creating regulatory and reputational challenges, however, these risks also present opportunities for SMEs to innovate, adopt sustainable practices, and build resilience. By leveraging technology, collaborating with stakeholders, and diversifying supply chains, SMEs can mitigate the impact of climate risks and contribute to a more sustainable future.

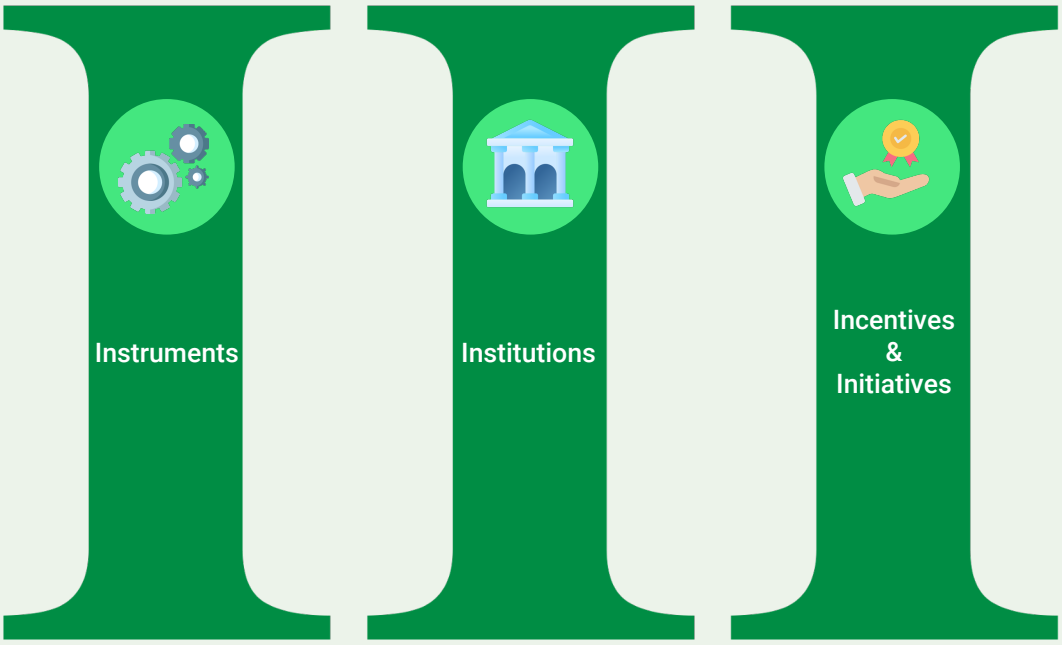
04

Financing Mechanisms for SMEs

For SMEs to become a major driving force in the journey towards adopting greener operations and sustainable practices, appropriate support is required both financially as well as in building their skills and expertise in navigating the climate finance market.

The roadmap for SMEs in accessing and utilizing climate finance effectively can be explored from the lens of the 3I framework i.e. the various instruments, institutions and Incentives & Initiatives available to make this transition possible.

3 I Framework: A Roadmap for SME Climate Finance



Source: Primus

4.1 Instruments: What Financial Tools Are Available?

Climate finance isn't about reinventing financial instruments—it's about repurposing traditional financing tools to drive sustainability. Whether it's a loan, bond, or equity investment, the defining factor of a climate finance instrument isn't its structure but its purpose. These funds are strictly allocated to fuel projects that actively contribute to climate mitigation, adaptation, or the transition to a low-carbon economy. For SMEs, this means access to capital isn't just about business growth—it's about future-proofing operations, cutting long-term costs, and staying competitive as global supply chains shift toward sustainability. The table below provides a brief overview of the various climate finance instruments available for the SMEs:

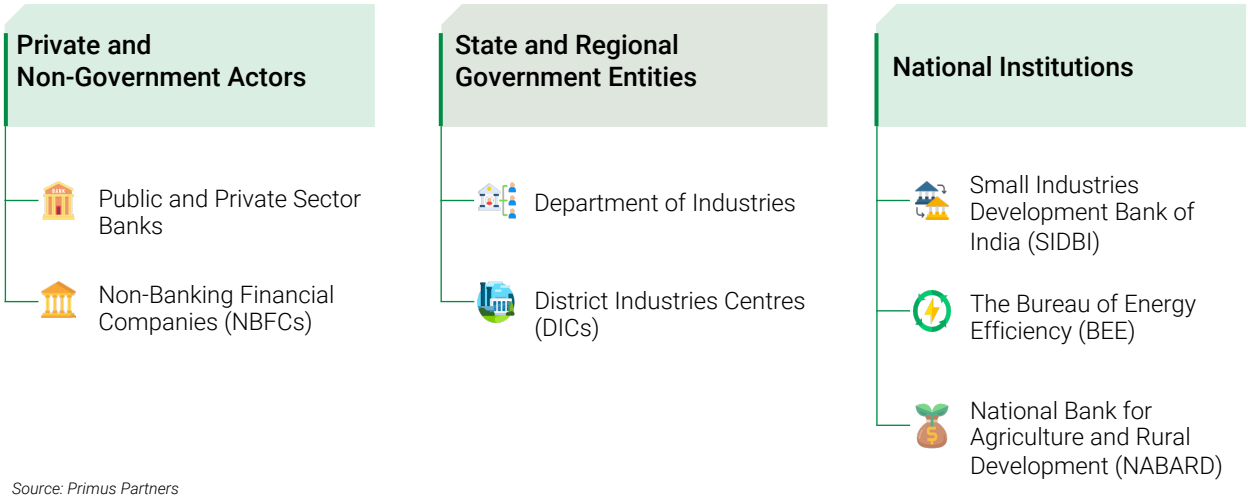
	Climate Finance Instruments	Description
Investment Financing	Equity	The provision of public finance in the form of equity stake/shareholder investment to support an enterprise or one of a series of discrete projects.
	Investment Loans	The provision of public finance in the form of loans to government projects, an enterprise, or a series of discrete projects.
	Investment Grants	The provision of public finance in the form of cash, goods, or services, for which no repayment is required.
	Guarantees	The provision of support by a public actor to transfer certain risks from investors or national governments to the public actor.
	Intermediated Financing	The provision of financial support through intermediaries such as banks, microfinance institutions, or other actors.
Result-based Financing (RBF)		The provision of funds to a recipient linked to the achievement and independent verification of a pre-agreed set of results from an investment or policy, including prizes, competitions, and payments for investment and policy outcomes
Policy-based Financing		The provision of public finance conditional on the borrower fulfilling their policy commitments
Trade Finance		The provision of finance to bridge the gap in time between import payment and export receipt of payment.
Technical Assistance (TA)		The provision of finance in the form of grants or non-financial assistance provided by specialists, to finance or provide support in the form of information sharing, expertise, skills training, knowledge sharing, or other consulting-type services.

Source: *https://documents1.worldbank.org/curated/zh/548391592335609551/pdf/Transformative-Climate-Finance-A-New-Approach-for-Climate-Finance-to-Achieve-Low-Carbon-Resilient-Development-in-Developing-Countries.pdf*

While financial instruments serve as the backbone of climate finance, their effective implementation relies on institutions that drive policy, funding, and execution. From national financial bodies to private lenders, these institutions play a crucial role in ensuring SMEs receive the right support at the right time. The following section highlights the key institutions shaping the climate finance landscape for SMEs.

4.2 Institutions: Which institutions play a key role in Climate Financing ?

In India's pursuit of a low-carbon economy, various institutions play pivotal roles in facilitating the transition of Small, and Medium Enterprises (SMEs) towards sustainable practices.



Source: Primus Partners

4.2.1 Private and Non-Government Actors:

- **Public and private sector banks:** They play an integral role in green financing, aiding SMEs in understanding how adopting green transitions can enhance financial performance, reduce operational risks, and improve efficiency.
- **Non-Banking Financial Companies (NBFCs):** NBFCs including Investment banks, mortgage lenders, and peer-to-peer lenders, support SMEs by providing long-term credit, thereby aiding in capital formation and capacity building.

4.2.2 State and Regional Government Entities

- **Department of Industries:** As a nodal agency, it is responsible for planning and promoting industrial development at the state level, focusing on sustainable growth and employment generation.

- **District Industries Centres (DICs):** Oversees the implementation of various schemes and programs at the district level, facilitating infrastructure development and quality control to support SMEs.

4.2.3 National Institutions

- **Small Industries Development Bank of India (SIDBI):** Serves as the principal financial institution for the promotion, financing, and development of the SME sector, offering schemes that provide affordable energy efficiency and green finance, while enhancing climate awareness among SME clusters.

- **The Bureau of Energy Efficiency (BEE):** Formed under the Energy Conservation Act of 2001, develops policies to reduce the energy intensity of the Indian economy, with programs encouraging SMEs to adopt energy-efficient and low-carbon technologies.

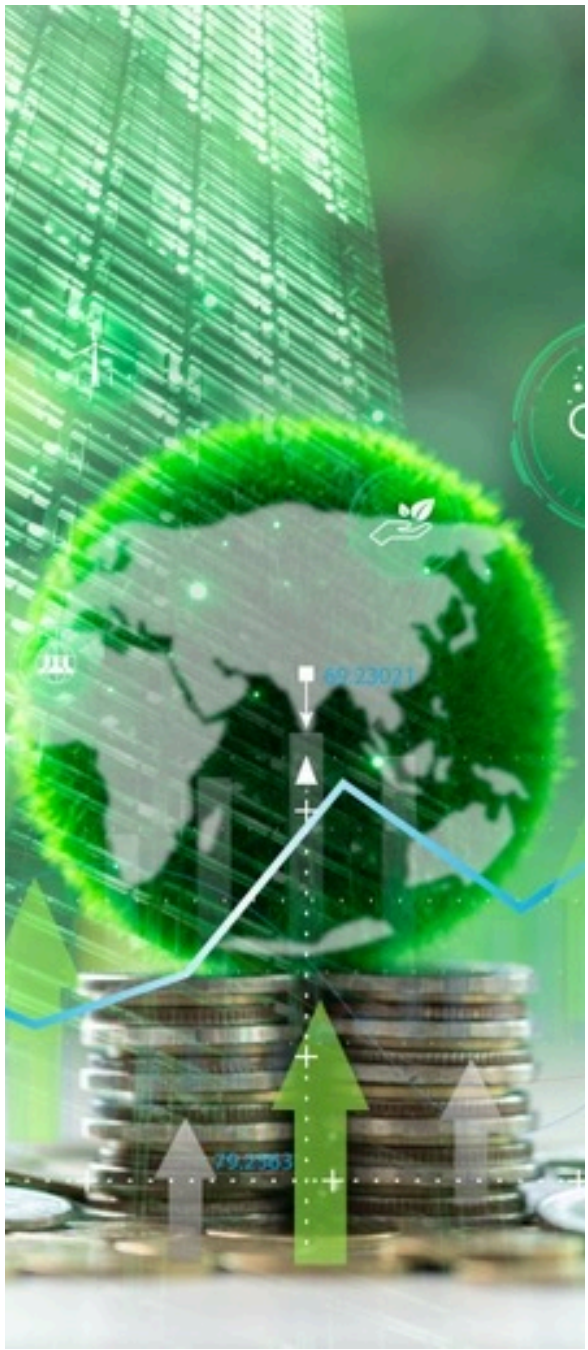
- **National Bank for Agriculture and Rural Development (NABARD):** Focuses on promoting sustainable and equitable agriculture and rural development, providing financial and non-financial interventions to support SMEs in rural areas.

Collectively, these institutions create a comprehensive support system, enabling SMEs in India to transition towards low-carbon operations through financial assistance, policy guidance, and capacity-building initiatives. Beyond financial tools and institutions, these targeted initiatives further accelerate SME adoption of green practices. These measures help reduce the financial burden of sustainability investments. The next section delves into the key incentives and initiatives making climate finance more accessible and impactful for SMEs.

4.3 Initiatives: What is the support system that exists?

India's energy security is a critical component of its economic growth and sustainability goals. There are various schemes and initiatives aimed at promoting renewable energy and reducing carbon emissions. Some of these initiatives are listed below:

4.3.1 Government-Backed Initiatives:



- **MSE Green Investment and Financing for Transformation Scheme (MSE GIFT Scheme):** MSE GIFT Scheme aims to facilitate adoption of green technology with provisions of interest subvention and credit guarantee. The aim of the scheme is to extend support to the MSEs in terms of accessing institutional finance at a concessional rate for the induction of clean/green technologies and assist them to change into green and sustainable business activities. The scheme is expected to benefit about 12000 MSEs leading to annual energy savings of 1600 GWh and an annual saving of around Rs. 1200 crores to MSEs.

- **MSE Scheme for Promotion and Investment in Circular Economy (MSE-SPICE):** MSE SPICE is an innovative initiative by the Ministry of Micro, Small and Medium Enterprises (MoMSMEs) dedicated to empowering Micro, Small Enterprises (MSEs) in embracing sustainable practices through the circular solutions. It aims to encourage Micro, Small, and Medium Enterprises (MSEs) with focus on

sectors like Plastic, Rubber, and Electronics Waste Management, to adopt circular economy practices and improve operations, while aligning with national and international environmental goals. The scheme is expected to impact more than 3400 units would be benefited from implementing brownfield projects of MSE units.

- **Climate Change Fund (CCF):** NABARD's GCF is one of the largest climate financing mechanisms which finance both mitigation and adaptation projects. This fund aims to support awareness-building on climate change issues, promote innovative adaptation and mitigation interventions, and foster climate-resilient livelihoods.

4.3.2 Public Sector Initiatives:

- **Policy for Financing Transmission Projects –** IREDA provides financial assistance for transmission infrastructure projects, ensuring seamless integration of renewable energy into the power grid.

- **Loan Against Securitization of Future Cash Flow of Renewable Energy Projects –** This policy enables project developers to secure funding by leveraging future cash flows, improving liquidity and accelerating renewable energy deployment.

- **Special Product for Funding Renewable Energy Projects –** IREDA offers financial solutions through bonds, bank loans, and other financial instruments to support the growth of renewable energy projects. IREDA. (n.d.). Policy for financing transmission projects

4.3.3 International Institute with Government or Private Institutions

- **Vivriti Capital Climate Finance Project:** The Asian Development Bank (ADB) has invested $25 million in Vivriti Capital Limited (VCL) through a senior secured debt facility to support VCL's Climate Finance Project in India. The funds will be used to finance companies in sectors such as electric vehicles, solar and wind energy, and waste management, with at least 30% earmarked for electric vehicle financing, including charging and battery swapping stations.This initiative aims to enhance access to climate finance for underserved enterprises, including MSMEs, mid-market corporates, and retail clients, promoting scalable and commercially viable renewable energy projects and the decarbonization of road transport.

- **India Infrastructure Finance Company Limited Project:** The Asian Development Bank (ADB) has also provided a $500 million loan, with a sovereign guarantee, to the India Infrastructure Finance Company Limited (IIFCL) to promote sustainable infrastructure development in India. This initiative aims to facilitate IIFCL in providing long-term capital for infrastructure projects, with a focus on enhancing connectivity, supporting energy transition, and developing under-resourced sectors such as urban projects, education, and healthcare. The project includes establishing a sustainability unit within IIFCL and creating an environmental sustainability framework with a scoring method to evaluate projects. This will build IIFCL's institutional capacity to integrate green practices and meet the growing demand for climate-aligned infrastructure, supporting India's commitment to achieving net-zero emissions.

- **Blockchain:** In supply chains, carbon emissions are generated through various activities, from processing raw materials to delivering products to end customers. Blockchain, an emerging technology in Industry 4.0, offers a promising solution to address these challenges. As a digital, distributed ledger, blockchain records transactions in a chronological, permanent, and tamper-proof manner. This capability enables companies to log virtually every event or transaction, enhancing visibility and traceability within the supply chain. By providing accurate and standardized measurements of energy consumption and emissions, blockchain facilitates improved transparency, trust, and traceability among stakeholders. This, in turn, enhances administrative processes, information sharing, and operational efficiency, contributing to emission reductions through optimized freight operations and smart transportation solutions.

Although digital solutions play a critical role in decarbonization, different industries require tailored approaches to maximize sustainability. From energy-efficient manufacturing to sustainable packaging and green logistics, businesses are embracing sector-specific innovations to drive impactful change. The next section will help us understand how industry-specific advancements are shaping the future of SME decarbonization.

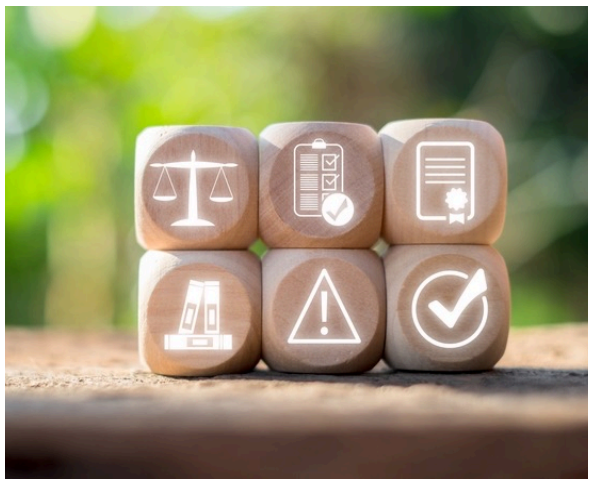
05

Policy & Regulatory Framework

The transition to a low-carbon economy necessitates robust policies and regulations that aid Small and Medium-sized Enterprises (SMEs) in embracing eco-friendly practices. Considering their crucial role in global economic systems, it is vital to empower SMEs through favourable policies, simplified regulatory compliance, and joint initiatives to reach broader sustainability targets. Government bodies and global organizations can significantly contribute to this shift by offering financial rewards, providing technical support, and creating skill-development programs designed specifically for SMEs' needs. Additionally, creating avenues for SMEs to share knowledge and successful strategies can encourage innovation and accelerate the implementation of sustainable technologies and methods across various industries.

5.1 Indian and global policies promoting SME sustainability

Currently, small and medium-sized enterprises (SMEs) are recognized as a driving force for sustainable economic development in both developed and developing countries. In developing nations, SMEs provide employment for approximately half of the workforce and two-thirds of non-agricultural workers. Large companies need to assess the involvement of all stakeholders in their operations, including their suppliers, most of whom are small businesses.



Similarly, under the **Raising and Accelerating MSME Productivity (RAMP) Program**, three key sub-schemes have been launched to enhance environmental sustainability, financial accessibility, and operational efficiency within the MSME sector:

a. **MSME Green Investment and Financing for Transformation (MSE GIFT) Scheme:** Designed to accelerate the adoption of green technologies by providing interest subvention and credit guarantee support, fostering the transition towards energy-efficient and environmentally responsible business operations.

b. **MSE Scheme for Promotion and Investment in Circular Economy (MSE SPICE) Scheme:** India's first-of-its-kind circular economy initiative, offering credit subsidies to support projects aimed at achieving net-zero emissions in the MSME sector by 2070.

c. **MSE Scheme on Online Dispute Resolution for Delayed Payments:** A pioneering initiative leveraging legal expertise, advanced IT solutions, and artificial intelligence to resolve delayed payment disputes efficiently, ensuring improved financial liquidity for micro and small enterprises.

The **RAMP program's overarching objectives** include strengthening the synergy between central and state governments in MSME promotion, advancing technology adoption, expanding financial markets, fostering green initiatives, and addressing delayed payment challenges. Furthermore, the program has introduced the Support for the Commercialization of Intellectual Property (MSME – SCIP) Program, which facilitates the commercialization of innovative intellectual property, empowering entrepreneurs to scale their innovations and contribute to India's knowledge-driven economy.

Further, Regulatory frameworks worldwide are increasingly mandating sustainability compliance across supply chains, significantly impacting SMEs. The German Act on Due Diligence in Supply Chains, effective January 2023, requires businesses to identify, assess, and mitigate human rights and environmental risks across their value chains. Similarly, the EU Corporate Sustainability Due Diligence Directive enforces corporate accountability for environmental and social standards, necessitating SME alignment to maintain partnerships with larger enterprises.

As key drivers of economic growth, SMEs represent 90% of businesses globally, generate two-thirds of global employment, and supports the livelihoods of over two billion people. Their role in ensuring resilient, transparent, and sustainable supply chains is indispensable, positioning them as critical stakeholders in the transition toward responsible and sustainable business practices.

5.2 Compliance challenges and easing the regulatory burden

While these policies aim to enhance sustainability, SMEs often face challenges in compliance due to limited resources and expertise. The complexity and cost of adhering to stringent regulations can be daunting for smaller enterprises. To mitigate these challenges, governments and financial institutions can offer grants, low-interest loans, and technical assistance tailored to the needs of SMEs. For example, the MSME Green Investment and Financing for Transformation (MSE GIFT) Scheme in India provides interest subvention and credit guarantee support to facilitate the adoption of green technologies by SMEs.

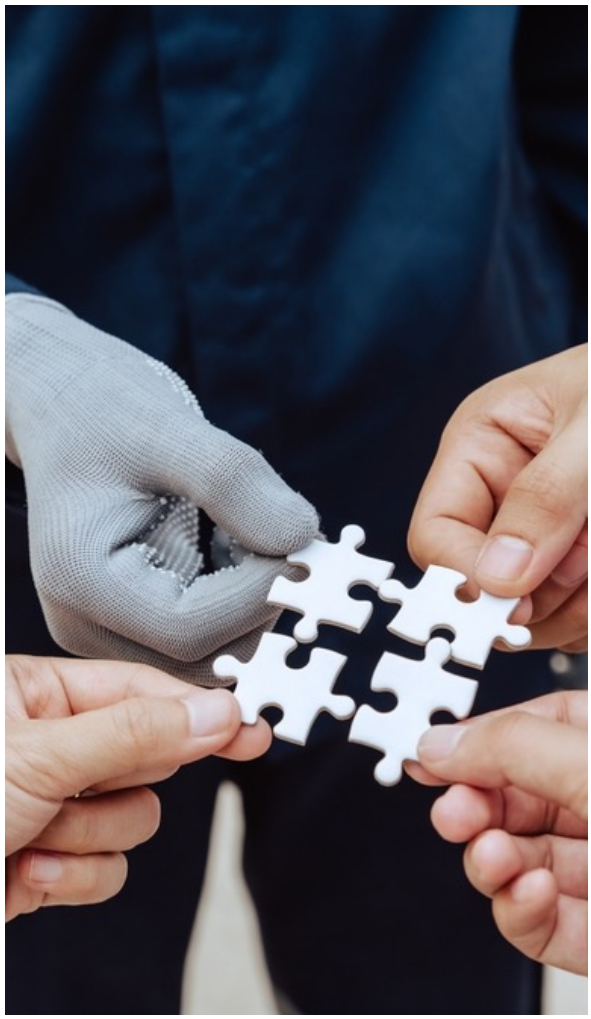
Additionally, simplifying reporting requirements and offering clear guidelines can help reduce the administrative burden on SMEs. Implementing proportional reporting standards, as advocated by the International Sustainability Standards Board (ISSB), ensures that sustainability reporting is scalable to the size and capacity of the enterprise, making it more accessible for SMEs.

5.3 Role of public-private partnerships in enabling green transitions

Public-private partnerships (PPPs) are instrumental in accelerating SME sustainability, fostering collaboration between governments, corporations, financial institutions, and SMEs to build supportive ecosystems for green growth.

Initiatives like the World Economic Forum's SME Sustainability Accelerator, in partnership with Schneider Electric, provides tailored insights and strategic guidance to help manufacturing SMEs navigate their sustainability transition. Similarly, the OECD's Platform on Financing SMEs for Sustainability enhances global knowledge-sharing, facilitates access to sustainable finance, and drives innovation in green technologies.

By aligning policy, capital, and technical expertise, PPPs enable SMEs to overcome sustainability barriers, integrate climate-friendly solutions, and strengthen their long-term competitiveness in an evolving global economy.



06

The Way Forward

Achieving scale in **climate finance** requires a **collaborative, multi-stakeholder approach,** and India has made **notable progress** in fostering synergies between **regulators, financial institutions, and the private sector**. By **developing and refining tailored climate finance frameworks,** India is proactively addressing its **unique challenges** while aligning with **global best practices**, ensuring a **globally competitive yet locally relevant ecosystem.**

A well-defined climate finance taxonomy is a **critical enabler,** providing clarity and consistency in financing sustainable initiatives. While the government's efforts to establish this framework are promising, **timely implementation** is essential to sustain momentum and **translate policy commitments into measurable impact.** Some of the key strategies to help SMEs **unlock new capital flows, enhance investor confidence, and accelerate its transition to a low-carbon economy include:**

- **Developing tailored financial instruments** that align with SMEs' unique capital requirements.
- **Implementing capacity-building initiatives** to enhance awareness and financial literacy on sustainable investments.
- **Establishing government-backed incentives and risk-mitigation mechanisms,** such as guarantees and concessional financing.
- **Strengthening partnerships** between financial institutions and SME support ecosystems to improve access to funding.
- **Standardizing sustainability reporting frameworks** to drive transparency and facilitate green investment decisions.
- **Leverage technology for streamlining reporting** to automate data collection and reporting processes

By addressing **knowledge gaps**, **risk perception, and financing constraints,** we shall enable **SMEs to integrate climate-friendly solutions** into their operations, fostering **long-term resilience and sustainable growth.**

To summarise, following interventions will be critical for India to lead on the decarbonization journey.

1. **Establishing an India Green Capital Market:** Creating a dedicated Green Capital Market where businesses, especially SMEs, can issue green bonds, sustainability-linked loans, and carbon credits is of critical importance today. This enables direct financing for climate action projects, allowing SMEs to tap into impact investors, ESG funds, and global green finance markets Implementation.

2. **Setting up an SME Climate financing laboratory:** An incubator for climate finance solutions tailored to SMEs, backed by banks, fintech, and impact investors is the need of the hour. SMEs struggle with green financing due to risk perceptions. A lab would pilot climate risk insurance, revenue-based financing, and digital carbon credit tracking for them. It will also help to partner with global climate finance networks (GCF, World Bank, IFC) for technical and funding support.

3. **Blended finance models for green transition:** Leverage government-backed guarantees and private capital to de-risk green investments.

   Blended finance attracts institutional investors hesitant about the risks of new green technologies. Some ideas that can be looked at:

   - 50-50 co-financing between government and private capital.
   - Tax breaks for investors funding SME decarbonization projects.
   - A "Just Transition Fund" for SMEs shifting to low-carbon models

4. **Blockchain powered carbon credit system:** Establishing a national blockchain-based platform for real-time carbon tracking, validation, and credit trading. This will r educes fraud, ensure transparency, and allow SMEs to monetize emission reductions.

5. **Establishing Digital green financing ecosystem:** A Green FinTech ecosystem integrating AI-powered green credit scoring, digital green bonds, and automated sustainability reporting. This will simplify loan approvals and ESG compliance for SMEs.

6. **Decarbonization-as-a-Service (DaaS) for SMEs:** A pay-per-use model where SMEs can lease green technologies rather than making huge upfront investments. This will help remove capital barriers for SMEs to adopt clean energy, energy efficiency, and circular economy solutions.

It can be implemented using ideas such as:

- Private sector-led leasing models for solar, EVs, waste-to-energy systems.
- Government-backed Green Equipment Financing Fund.

To meet its **Panchamrit climate goals**, India needs **new-age green financing mechanisms** beyond traditional lending. **From carbon markets and blended finance to blockchain and digital platforms,** the future of green capital must be **tech-driven, inclusive, and impact-focused.**

Green Funding Readiness Scorecard

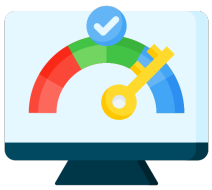
Is your Enterprise ready for Climate Finance?

Before applying for Climate Finance, SMEs need to assess their current sustainability efforts, financial preparedness, and ability to demonstrate impact. This scorecard helps businesses determine where they stand today and what gaps they need to fill.

How It Works:

1. Answer 12 simple Yes/No questions
2. Calculate the score for your business based on the responses.
3. Get a readiness level (Beginner, Intermediate, or Green Finance Ready)
4. Use tailored recommendations based on your score.

Green Funding Readiness Scorecard



Section 1: Business & Sustainability Basics (Yes/No)

1. Do you track your energy, water, and raw material usage?
2. Have you taken any steps to reduce carbon emissions or waste in the last 12 months?
3. Do you source materials from sustainable suppliers or have a green procurement policy?
4. Do you have a plan to transition towards greener operations in the next 5 years?

If you answered NO to most of these, start with small sustainability shifts like energy-efficient lighting, waste reduction, or local green sourcing.

Section 2: Financial Preparedness & Documentation (Yes/No)

1. Do you have up-to-date financial statements (Profit & Loss, Balance Sheet)?
2. Can you demonstrate the cost savings from your sustainability initiatives?
3. Are you aware of or have you applied for any climate-related funding schemes?
4. Do you have a dedicated finance team or consultant to explore Climate Finance options?

If you lack financial documentation, start tracking expenses related to green initiatives and work with an accountant to structure data for funding applications.

Section 3: Funding Readiness & Creditworthiness (Yes/No)

1. Do you have a history of repaying loans or credit on time?
2. Are you aware of Green Bonds, Carbon Credits, or Sustainability-Linked Loans?
3. Do you have an action plan for using Climate Finance if secured?
4. Have you consulted banks, government schemes, or investors for green financing?

If most answers are NO, consider meeting with financial advisors or banks to explore available green funding options and their requirements.

Your Green Finance Readiness Score

Score Range	Readiness Level	Next Steps
0-4 Points	**Beginner**	Start implementing small green initiatives and track impact. Learn about Climate Finance options.
5-8 Points	**Intermediate**	Improve documentation and apply for small green loans or grants. Strengthen ESG practices.
9-12 Points	**Green Finance Ready**	Actively explore and apply for Green Finance options to scale sustainability efforts.

Key terms to understand the scorecard evaluation

- **Carbon Credits:** Like **"pollution vouchers."** If your business reduces emissions, you can **sell these credits** to larger companies that need to offset their pollution.

  Example: A packaging SME switches to biodegradable materials and earns carbon credits, which they sell to a cement company needing offsets.

- **Green Bonds:** A **loan for eco-friendly projects.** Investors lend money to businesses for green initiatives, and the business repays with interest.

  Example: A textile SME issues a Green Bond to fund solar panel installation, reducing long-term energy costs.

- **Sustainability-Linked Loans (SLLs):** A loan where **interest rates drop** if the SME meets sustainability targets (like reducing emissions).

  Example: An SME that commits to using 50% recycled raw materials gets a lower loan interest rate.

- **Blended Finance:** A mix of **public & private funding** to support green initiatives. Governments provide **first-loss guarantees** to make the project attractive to private investors.

  Example: An SME building an electric vehicle fleet gets part of the funding from a government subsidy and the rest from a private impact investor.

- **ESG (Environmental, Social, Governance) Rating:** A score given to businesses based on their sustainability and ethical operations. Higher ESG scores improve funding access.

  Example: An SME that follows sustainable waste management and gender-equal hiring policies gets a better ESG rating, making it easier to secure Green Finance.

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Contributors

Sameer Jain
MD

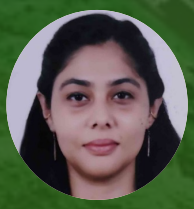
Ramakrishnan M.
MD

Shravan Shetty
MD

Pooja Lahri
Vice President

Dharmesh Minat
Manager

Dimple Nagpal
Manager



Tavishi Darbari
Manager

Siddharth Singh
Manager

Harshpreet Kaur
Sr. Consultant

Ankush Sharma
Sr. Consultant

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India Offices

Bengaluru
91 Springboard
Business Hub 175, 176
Bannerghatta Rd,
Dollars Colony,
Bengaluru – 560076

Chandigarh
2nd Floor, Netsmartz,
Plot No. 10, Rajiv
Gandhi Chandigarh
Technology Park,
Chandigarh – 160019

Chennai
147, Pathari Rd, Door #3,
WorkEz Hansa Building,
RK Swamy Centre,
Thousand Lights,
Chennai, TN - 600006

Delhi
1 to 7, UG Floor,
Tolstoy House,
Tolstoy Road,
Connaught Place
New Delhi - 110001

Kolkata
Siddhartha Apartments
4th Floor, 188/2,
Block J,
New Alipore,
Kolkata - 700053

Mumbai
601, 6th floor,
Raheja Centre,
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Dubai
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