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BRIDGING THE CLIMATE FINANCE GAP

Catalysing
Private Capital for
Developing and
Emerging Economies

Promit Mookherjee
Editor

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CONTENTS

Editor's Note	4
Towards Effective Carbon Trading Markets for Emerging Economies: The Evolving Indian Experience <i>Mannat Jaspal</i>	9
Internal Carbon Pricing: Aligning Business Priorities with Climate Action <i>Varun Agarwal, Ashwini Hingne and Shubhangi Gupta</i>	22
Improving the Readiness of Developing Economies to Access Private Climate Finance <i>Akhilesh Tilotia and Ambalika Banerji</i>	33
Addressing New Climate Realities Through ESG: The Role of Corporate Governance <i>Shailesh Haribhakti and Suyash Agrawal</i>	41
Green Debt: Realising the Potential of Green Bonds in Emerging and Developing Economies <i>Promit Mookherjee</i>	51
The Role of Multilateral Development Banks in Climate Finance for Developing Countries <i>Esther Choi and Valerie Laxton</i>	62
Multilateralism and Climate Finance: Towards a Greater Role for the G20 <i>Shruti Jain</i>	71
G20 and Sustainable Climate Finance: Experiences from the Indonesian Presidency <i>Tiza Mafira</i>	81
Conclusion: Putting Private Capital at the Centre of Climate Action <i>Mihir Sharma</i>	90
About the Authors	94



Editor's Note

THE GLOBAL FIGHT against climate change is at a critical juncture, and any hope of achieving the 1.5-degree Paris Agreement target now rests on an unprecedented transformation of economies and energy systems away from fossil fuels. In countries of the Global South, climate action continues to suffer from lack of financial flows to green sectors and broken promises of support from the developed world. Indeed, developed nations are yet to deliver on even the minimum annual commitment of US\$ 100 billion that they made in 2008. Considering how emerging and developing economies (EMDEs) will require anywhere between US\$ 3 trillion to 6 trillion per year by 2050¹ to meet their climate targets, the existing commitments are far too inadequate—and a reason for the lack of trust between the Global North and the Global South.

Private capital will therefore have to play a bigger role as developing economies seek not only to curb their own greenhouse gas emissions but also cope with the inevitable impacts of climate change. However, international private capital has been largely absent in these geographies. For example, only 14 percent of the total climate finance in Africa so far has come from private capital.² In India, more than 85 percent of climate finance in 2020 came from domestic sources, with international private capital accounting for less than 7 percent of the total financial flows.³

At the same time, private capital continues to flow freely towards fossil fuel projects, despite the dire warnings from the IPCC on the immediate need to cease further investment in fossil fuels. The top 60 global banks have invested around US\$ 742 billion towards fossil fuel projects in 2021 alone, while 80 percent of the investment from private equity firms in energy has been directed toward fossil fuels since 2011.⁴

This situation persists despite the improving economic case for green investments. The cost of producing solar and wind energy have seen rapid declines—as much as 95 percent in the last decade alone. In India,



tariffs for wind and solar are already lower than those for conventional coal-based power. Battery technologies for electric vehicles and storage are also becoming increasingly viable, while green hydrogen is taking strides as a so-called 'fuel for the future'. Already, those investing in green sectors are seeing increasing financial returns.

However, even when private investors raise their stakes in green projects, they prefer to do so in developed economies. ESG investing is a good example of this: between 2018 and 2022, ESG assets increased by 35 percent, making up more than one-third of the total assets under management today. Geographically, these funds continue to be focused more in Europe and North America, with the Asia-Pacific (A-PAC) region accounting for less than 5 percent of all ESG assets, albeit with a higher growth rate. Even within Asia, investments continue to focus on the more developed economies. India, the largest emerging economy in the region, accounts for only around 2 percent of the ESG assets in the A-PAC. The situation is similar for other developing economies in Latin America and Africa where the quantum of green investments is even lower.

The problem is that despite increasing returns and very large markets, private investors still view developing economies as risky investments due to certain perceptions. Some of the commonly cited issues include lack of visibility for shovel-ready projects, poor reporting standards and data constraints, high fossil fuel subsidies, currency risks, and uncertainty regarding future climate policies. This risk aversion leads to a steep cost of capital for green developers in the developing world.

Quite clearly, the present flows of private investment are not sustainable nor equitable, and concerted efforts will now be needed to redirect these flows toward green projects in the developing world where they can have the largest impact. This volume brings together analysts and practitioners from different geographies to examine some of the most relevant instruments that can be used for catalysing private green capital.

The first two essays study carbon pricing as a tool for internalising the costs of carbon into the decision-making process for businesses. Several emerging economies are now looking at developing domestic carbon trading markets, which are seen as an effective tool for channelling future

investments into more sustainable pathways while being technology-neutral and allowing businesses to choose the most cost-effective emission reduction options. At the same time, poorly designed carbon markets are ineffective at emission reductions and in the worst case can impede industrial growth. Thus, emerging economies must take lessons from existing carbon markets to design their own models that will work for themselves while also interacting effectively with the international markets. Furthermore, companies on their own must also increasingly focus on internal carbon pricing mechanisms as a means to integrate themselves with the new green economy. This compendium highlights certain ideas for developing carbon trading markets and feasible internal carbon pricing mechanisms for businesses.

The second section of essays deals with the evolving sustainable finance landscape and its implications for the developing world. A number of tools and practices have emerged that intend to shift investor interest toward green investments; green bonds and ESG investing are two of the most prominent examples. However, these tools are often more suited for established markets, making it difficult for EMDEs to scale up such investments. In some cases, the design of these instruments can even lead to investors pulling out of developing economies for perceived greener investments elsewhere. There is also a lack of institutional and regulatory capacity within emerging economies to optimise returns on these investments. The essays in this compendium engage with some of the key challenges to scaling up sustainable investment in the developing world.

The compendium also addresses the role of multilateral institutions. Multilateral and bilateral financial institutions are uniquely placed to crowd in private capital through their investments in green sectors and different blended finance and risk guarantee mechanisms. However, the track record of MDBs and DFIs in catalysing private green capital leaves a lot to be desired. Reforming these institutions to make them fit-for-purpose for climate investments could unlock large flows of global private capital.

Similarly, the G20 grouping is uniquely placed to unlock climate finance flows. For the first time in the grouping's history, its presidency will be held consecutively by four developing nations: Indonesia in 2022, followed by India, Brazil, and South Africa. This provides a unique

moment to push the climate finance needs of the developing world to mainstream G20 agenda and utilise its unique convening powers to effect meaningful changes in the international financial architecture. The opportunities from this unique moment for the G20 are highlighted through insightful essays from authors from Indonesia and India.

This publication therefore aims to cover a wide range of issues and opportunities for harnessing greater flows of private capital for climate action. Given the state of the climate emergency, there can no longer be excuses for not utilising every instrument available to facilitate greater financial flows. While the developed world is responsible for more than 80 percent of historical emissions, going forward, economic growth in the developing world will be the largest driver of future emissions. Private capital, in all its forms, must be redirected to the developing world through all avenues possible.

It is ORF's aim that this collection of essays helps frame current discussions on shoring up greater private capital flows.

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Towards Effective Carbon Trading Markets for Emerging Economies: The Evolving Indian Experience

Mannat Jaspal

EMERGING MARKETS and developing economies are under massive pressure to curb greenhouse gas (GHG) emissions while meeting their pressing domestic development goals. Given limited fiscal budgets, even more constrained since the pandemic, financing for green transitions in these geographies remains a persisting challenge. While estimates vary, developing economies must invest at least US\$1 trillion in energy infrastructure by 2030 and US\$3-6 trillion across all sectors per year by 2050 for mitigation purposes alone. In addition, the annual climate adaptation costs in these economies is expected to reach US\$300 billion in 2030 and as much as US\$500 billion by 2050.¹

Innovative and calibrated climate policies can help accelerate the pace of green transition in developing economies, serving both objectives of curbing GHG emissions and augmenting government revenues. A host of such climate policy instruments have been deployed by governments in line with their respective NDCs—including taxes on fossil fuels, energy efficiency support measures, subsidies and incentives for renewables, and command and control mechanisms however, direct carbon pricing as an instrument has been a relatively uncharted territory for many emerging economies.

The rationale for carbon pricing is predicated on internalising the cost of GHG emissions in the market price of the commodity or service, and leveraging a market-friendly mechanism to incentivise future investment,



consumption and innovation towards sustainable pathways.² It allows firms and consumers the flexibility to choose between the most cost-effective emission reduction option, ensuring overall environmental gains at the least possible cost. Besides ensuring emission reduction, carbon pricing has proven to render various development co-benefits, spur clean innovation, unlock large pools of climate finance, enable low-carbon industrial growth, induce technology transfer, provide fillip to environmentally beneficial ventures, and boost competitive advantage of businesses in an increasingly decarbonising world.³

There is growing consensus on pricing carbon to steer investments away from emission intensive supply chains towards green investment opportunities, and more countries are practicing the mechanism. Carbon trading, in particular, has emerged as a popular instrument in the transition towards decarbonisation and in helping countries meet their current and future climate ambitions.

There are typically two types of carbon trading markets. One is a compliance market, set up as a result of an international, regional or national regulatory requirement. The Kyoto Protocol established a cap-and-trade system under the UNFCCC and is an example of an international compliance market, while the EU-ETS serves as a model for a regional case. The second is a voluntary carbon market, where businesses and individuals can buy credits out of their accord to offset their carbon emissions.⁴

In light of the recent Energy Conservation (Amendment) Bill, 2022 which highlighted the relevance of carbon credit trading within the realm of India's climate policy toolkit, this article explores the critical role of carbon trading systems in India as a cost-effective measure to achieve both environmental and economic benefits. The aim is to provide other emerging economies a template for developing a similar model based on the recommendations presented for consideration.⁵ Using India as a case study, this analysis suggests key market design and oversight features for a national carbon trading system, while making a case for strengthening India's participation in international carbon offset trading markets to ensure a strong influx of climate finance for domestic emission reduction projects. However, it would be useful to note that the process of a carbon market design is more iterative than linear in nature,

and it is essential to adjust and adapt the framework and approaches to changing policies over time.⁶

A National Carbon Trading Market for India

In a momentous development in India's climate policy, the Energy Conservation (Amendment) Bill, 2022, empowers the central government or any authorised agency to establish a carbon credit trading scheme.⁷ The government sets a cap on permissible emissions for different sectors (received as allowances) in a particular compliance period, during which the firms with lower abatement costs can sell their allowances in secondary markets to firms with higher abatement costs—this kicks in emissions reductions at the least possible cost. The sectors and individual companies are allowed the flexibility to decide between curbing emissions or to continue to emit, based on internal calculations driven by the market costs and technology-related opportunities. It must be noted, that while the quantity/volume of emissions is regulated, the price is determined by market supply and demand.⁸

To India's merit, it has already been exploring market-based approaches to carbon mitigation through mechanisms such as the PAT scheme (Perform, Achieve and Trade) and Renewable Purchase Obligations which hold some degree of semblance to emission trading systems. The PAT Scheme, introduced by the Bureau of Energy Efficiency in 2012, allots certain energy-intensive industrial production units, identified as designated consumers (DC), with Specific Energy Consumption (SEC) reduction targets over a cycle of three years.⁹ The industrial units are incentivised to implement energy-efficient technologies and overachieve these targets in exchange for Energy Saving Certificates (ESCerts), each equal to one metric tonne of oil (MTOe) that can be traded and monetised in the power exchanges. In the latter case, the Electricity Act (2003) mandates the State Electricity Regulatory Commissions in the country to set renewable purchase obligations for certain entities such as electricity DISCOMS, open access consumers and captive power producers to purchase a percentage of their electricity from renewable energy (RE) sources.¹⁰ As an alternative to actual procurement of RE-generated power, the obligated entities can purchase renewable energy certificates (RECs) instead. The trading of certificates under both the schemes takes place on the national energy exchanges, primarily Indian Energy Exchange (IEX) and Power Exchange of India Limited (PXIL).

Given the functional and operational mechanism of the two schemes—specific targets, issuance, normalisation factor, trading, among other features—it lays a strong foundation to evolve into a full-fledged national emissions trading system in India. The ESCerts and RECs are likely to be merged into one single carbon-denominated allowance called Carbon Credits Certificate (CCC) and will operate under a Cap and Trade system under the National ETS.¹¹

However, any sudden and poorly calibrated market reform can prove to be cataclysmic to industrial growth. Therefore, relying on global best practices, a more phased approach could prove useful using simulations (a mock carbon market) or pilots (a small-scale carbon market). China presents a befitting example. It piloted ETS models in seven provinces in 2013, contextualised to suit structural and economic conditions of the respective jurisdictions, and allowing learnings and best practices from these programs to inform the design of its national ETS market launched in 2021. India's federal structure provides an ideal framework to develop ETS pilot programs across states with inter-state trading built into its design to enhance efficiency gains and cost-competitiveness. Moreover, it will also help build readiness among implementing state governments and industry stakeholders while ensuring a more bottom-up approach to design-testing.¹²

In order to ensure the new carbon market delivers the promise of sustained emission reductions and low carbon investments while also supplementing government revenues, the following key considerations must be built into the market design and oversight mechanism.

Market Design

1. Coverage and Scope

In its current form, the PAT Scheme covers 1,072 designated consumers accounting for 50 percent of primary energy across 13 sectors.¹³ To maximise potential gains from trade, reduce overall transaction costs, and generate greater liquidity in the market, the ETS should aim at a wider coverage by including more sectors and industries above a certain threshold within its ambit.¹⁴ The cap and trade scheme can apply to large industrial units and energy-intensive industries, with small emitters subjected to targets instead of an allowance, and ultra-small emitters

having to only monitor their emissions. All entities covered under the national market will have to get their emissions measured, verified and audited.¹⁵ Mitigation opportunities could be harnessed across areas such as energy efficiency, renewable energy, wastewater treatment and reuse, modal shifts in transport, methane recovery and reuse, and afforestation and reforestation, synthesising the different markets through a common carbon currency. Development of wider mitigation options, increased participation from MSMEs and the financial sector, and distribution of mitigation action across geographically diverse regions can spur the deepening and widening of the carbon market in India.¹⁶ To maximise impact, the carbon market should aim to increase the scope of cap's coverage beyond energy use to include industrial process emissions as well.¹⁷

2. Ambition and Price Signalling

The ETS should aim to set reasonably ambitious targets on absolute goals or intensity of emissions per unit of GDP, subject to growth rate of the economy.¹⁸ While the immediate aim should be strengthening existing schemes, eventually the regulator must set medium to long-term targets to provide a stable price signal to the market. The cap should be adjusted over time and kept low enough to ensure that the price of carbon credits is higher than the cost of reducing emissions, incentivising industrial unit owners to undertake emission reduction measures. Defining these targets over timeframes can be useful for industries to undertake transition planning pre-emptively, and ensures adequate and sustained demand in the market as well as predictable carbon reductions.¹⁹ As an example, the EU ETS has already declared that its emission cap will decrease annually by 2.2 percent between 2021 and 2030. Clarity and timely direction from the regulators on implementation and implication of adherence to the norms will prevent unceremonious shocks to the system, and help improve the overall efficacy of the scheme.

3. Allocation

The government can either auction or allocate allowances as per criteria. A hybrid approach of freely allocating emission allowances and auctioning is common in ETS markets. Emission allowances can be freely allocated with a small portion earmarked for auctioning with an

exemption for EITE sectors (emission-intensive and/or trade exposed sectors) to retain trade competitiveness and avoid the risk of carbon leakage. However, over time, the government should aim to increase the share of distributing allowances via auctions, once the market has adjusted to the ETS mechanism. The revenues generated from selling allowance certificates will help augment fiscal revenues and can be used to reduce distortionary taxes or finance investments in clean-tech programs.²⁰

4. Price Containment Measures

Deploying price containment measures in the ETS design can help incorporate greater flexibility and price predictability. Carbon markets can be susceptible to market shocks and cyclical fluctuations, and therefore price containment measures can be useful in tempering price volatility. The government can consider introducing a price corridor, i.e. a price floor and a price ceiling as well as creating a Cost Containment Reserve (CCR) which allows the regulator to adjust the supply of allowances if trading price deviates from a certain price threshold.²¹ One of the challenges observed under the PAT scheme was that the market was oversupplied with energy saving certificates, thereby reducing the trading price.²² These measures can help manage supply and demand during fluctuations while ensuring that price discovery is led by the market.²³

Market Oversight

If the national ETS market is to be underpinned on the current market-based mechanisms including the PAT scheme and RPO, it is critical to incisively analyse the shortcomings and challenges that have precluded their long-term effectiveness. According to a Prayas Energy Group report, the biggest challenge to emissions regulation in India has to do less with the cost of installation of pollution control equipment, and more with the poor implementation and enforcement of policies, as well as insufficient direction and monitoring from the regulatory commissions.²⁴ Providing capacity-building support and digitisation of GHG accounting and MRV systems will form the cornerstone of a successful ETS scheme.

1. *Capacity Building*

Capacity-building efforts must be expended to skill and equip regulatory stakeholders to effectively manage and enforce carbon market policies. Moreover, respective line ministries responsible for rolling out the carbon trading scheme should work in tandem to avoid inefficiency and mismanagement owing to poor coordination. A national-level environment regulator should be instated to ensure strong regulatory safeguards.²⁵ Furthermore, training of market participants and service providers (such as verifiers and validators) is also essential to improve policy adoption and compliance rates, and reduce overall transaction costs.²⁶

2. *Digitisation of GHG Accounting and MRV systems*

Digitisation of oversight instruments including the **National Carbon Registry and the Monitoring, Reporting and Verification (MRV)** system, one that leverages blockchain technology, will ensure effective data collection and monitoring, quality control of credits, facilitate better target setting for the market and inform future policy design.²⁷ A digital ecosystem for a carbon trading market will standardise the modular elements of the marketplace, laying the ground for the development of digital carbon assets.²⁸ A robust and efficient domestic carbon market will also pave the way for better integration and linkage with global carbon markets and international registries.²⁹

International Carbon Offset Market

Article 6 of the Paris Agreement (previously covered under Article 12 of the Kyoto Protocol) mandates high-income countries with GHG emissions reduction targets. If these countries are unable to meet their targets and purchase the deficit from countries with surplus allowances through the ETS market, they can offset their domestic emissions by investing in clean energy and environment projects in developing countries. This can be done by purchasing certified emission reduction (CER) credits issued by the Clean Development Mechanism(CDM), an international standardised emissions offset instrument governed by the United Nations Framework Convention on Climate Change (UNFCCC) to facilitate the trade on the global scale.³⁰ India is an active participant in the CDM market with over 1,500 projects³¹ registered in the country, representing

around 21 percent of the total CDM investments, accounting almost US\$120 billion.³² These investments are either through direct investment in technology and infrastructure, or via Certified Emission Reduction (CER) exports. India is one of the largest recipients of tradable Certified Emission Reduction (CER) credits, second only to China.³³

It must also be noted that there are currently several cap-and-trade compliance schemes regulated by national, regional, or provincial law that operate independently of the UNFCCC mechanism. As of 2022, there are 39 national and 31 subnational jurisdictions that have already implemented or are scheduled to implement a carbon market.³⁴ As an example, the Regional Greenhouse Gas Initiative (RGGI), an ETS that covers 11 US states, allows purchase of offset credits that have been created in the RGGI region. Collectively, these mechanisms represent the compliance market.

Besides these mandatory commitments, corporations and individuals can also purchase carbon offsets called verified emission reduction (VER) credits on a voluntary basis motivated by Corporate Social Responsibility (CSR) and internal carbon-neutrality targets. The VERs are managed by private bodies not under the direct purview of the United Nations (UN) or governments, and verified by an independent third party. However, the VERs cannot be used to achieve obligations under the Paris Agreement compliance regime, thus also tend to be cheaper, whereas a CER can be accepted by entities wishing to voluntarily offset their carbon footprint.³⁵ Given the growing popularity of the voluntary carbon credit market, many independent international standards (such as the Gold Standard, Verified Carbon Standard) and domestic ones (California Compliance Offset Program, Republic of Korea Offset Credit Mechanism) have gained prominence over the years and are dominating the market.³⁶ However, this has also led to market fragmentation, and often brings into question the quality of the credits available and the pricing on these markets.

The credit suppliers come almost exclusively from the Global South, with South Asia providing the maximum number of offsetting credits, followed by Latin America and the Caribbean, and Africa. India clearly leads the pack, accounting for some 40-50 percent of credits sold annually. According to S&P global estimates, India's expected revenues from sales of voluntary carbon credits will reach US\$20-40 billion by

2030.³⁷ It is clear that the carbon revenues from the offset program hold phenomenal potential to provide India with a sustained stream of climate finance while also promoting GHG emission reduction. These projects have also proven to generate substantial development co-benefits such as biodiversity conservation, gender and community development, livelihood opportunities for local communities, protection of coastal areas, and improvement in farm productivity.

The Imperative to Strike A Balance

To improve the integrity and credibility of carbon offsets through the compliance and voluntary market, Article VI-related agreements at the 26th Conference of Parties in Glasgow introduced the principle of ‘Corresponding Adjustments’. The principle stipulates accounting of the internationally traded mitigation credits in the national emission inventories to avoid double-counting. This implies that the host country must adjust its national GHG inventory upwards by the amount of emissions reductions (or carbon credits) exported.³⁸

Threatened by the private credit transactions undermining NDC implementation in India, the government might feel compelled to restrict the export of offset credits. While the Energy Amendment Bill 2022 does not specify any such ban, with the operationalisation of a national carbon market, albeit a few years away, there are concerns that it might come to pass.

While the domestic compliance carbon market is critical for realising India’s own climate targets, there is a significant opportunity for India to mobilise finance and support emission reduction leveraging VCMs. Unless the proposed future carbon market framework is not flexible in accommodating voluntary carbon market standards, India stands to lose billions of dollars in investments. Global funds amounting to more than US\$120 trillion have committed to the UN Principles of Responsible Investments, emphasising ESG requirements.³⁹ The size of the global voluntary market is projected to grow from the current US\$1 billion to US\$100-200 billion by 2030.⁴⁰ India should prime itself strategically, through clear policy guidelines and regulatory frameworks, to harness the global pools of capital chasing voluntary carbon projects in the Global South. Not only will it open avenues to channel significant climate finance and the requisite FDIs, it will also help India unlock

significant social, development and environmental benefits.⁴¹ A rigorous GHG accounting that tracks projects under the VCM and the National Carbon Market will ensure that the two programs do not conflict with one another, and instead endeavour to develop synergies to maximise overall emission reduction.⁴² India's official carbon market framework should envisage complementariness between the mandatory and voluntary carbon market, and build a robust carbon credit trading infrastructure that will buttress the economy's sustainable finance ecosystem.⁴³

Lessons for the Developing World

Carbon trading systems are primed to become one of the most important and universal measures for climate action. Developing countries, which often suffer the most disproportionate impacts from climate change, have an opportunity to leverage carbon trading instruments to increasingly decarbonise while mobilising capital towards sectors—such as nature-based solution projects—which are often difficult to finance for local governments due to conflicting priorities and constrained budgets.

Key considerations around market design and oversight features will be critical to ensuring the long-term effectiveness of the national carbon market, along with strengthening presence in international voluntary markets. The efforts of states and private investors should not be pitted against each other but synergies and complementarities should be explored between the two markets to facilitate a well-functioning carbon trading ecosystem. While this analysis highlights the operationalisation of a carbon trading system in an Indian context, these lessons hold the potential to have a broader implication for much of the developing world looking at strengthening carbon trading as a key mitigation tool.

However, for carbon markets to be successful, concerns around transparency in the institutional infrastructure, credibility of carbon credits, social and environmental safeguards, greenwashing and human rights violations should be closely monitored and adequately addressed.⁴⁴ As it is often said, a policy is only as good as its implementation. The success and ambition of a carbon market will be contingent on the political will to crystallise commitment that reflects measurable and credible outcomes. In a world economy progressively adopting carbon trading systems, it is the first-movers that will gain advantage and leave the laggards at the risk of becoming uncompetitive in an increasingly decarbonising paradigm.⁴⁵

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Internal Carbon Pricing: Aligning Business Priorities with Climate Action

*Varun Agarwal, Ashwini Hingne
and Shubhangi Gupta*

THE INTERGOVERNMENTAL PANEL on Climate Change (IPCC)'s Sixth Assessment Report released in 2021 paints a grim picture. With greenhouse gas (GHG) emissions increasing every year, current emissions pathways are expected to warm the Earth by almost 2.8°C by the end of this century—significantly overshooting the Paris Agreement target of well-below 2°C.¹ This demands urgent and ambitious climate action.

Carbon pricing is increasingly being accepted as a tool to help augment climate action and facilitate more efficient shifts to a low-carbon economy by both governments and businesses.

This essay discusses the emerging popularity of carbon pricing in emerging economies and how Indian businesses are using internal carbon pricing (ICP) to achieve their climate goals. It lays out the key factors that enable businesses to effectively implement an ICP, and how this experience can help businesses prepare for upcoming regulations like the proposed national carbon market in India. This is informed by interviews and market outcomes from WRI India's corporate carbon market simulation—a mock emissions trading exercise conducted in 2020 where leading Indian businesses participated.



Carbon Pricing: Global Experiences

Of the 46 countries that have implemented or were in the process of implementing a carbon tax or emissions trading market as of April 2022, 16 were middle-income countries.² There are other countries that price emissions indirectly through fossil fuel taxes. When it comes to the private sector, almost half of the world's large 500 businesses have voluntarily decided on an internal price on their GHG emissions or are planning to do so in the next two years with an aim to decarbonise their operations, drive investments towards greener alternatives, and prepare for climate regulations.³

The rationale for carbon pricing is simple: it provides a mechanism for including the social cost of GHG emissions – the cost of the resulting impacts of climate change on society – into the market price of emissions-causing goods and services. This creates an incentive for shifting away from an emissions-intensive economic activity. Moreover, it is considered a more cost-effective option for decarbonisation as compared to mandates for specific emissions reduction measures or technologies because it allows polluters the flexibility to respond with the most efficient emissions reduction options at their disposal.⁴

Over the last decade, India has introduced a cess on coal production, and implemented the Perform Achieve Trade (PAT) and Renewable Energy Certificate (REC) schemes—market-based mechanisms to promote energy efficiency and renewable energy respectively. In August, days after approving more ambitious Nationally Determined Contribution (NDC) commitments for 2030,⁵ the Lok Sabha passed the Energy Conservation (Amendment) Bill 2022. This bill, also passed in the Rajya Sabha in December,⁶ empowers the government to set up a national carbon market.⁷

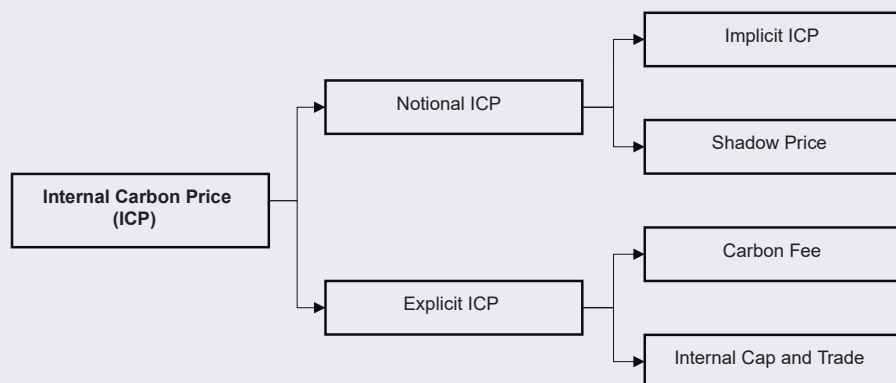
At the same time, Indian businesses are voluntarily undertaking ambitious climate targets⁸ and increasingly turning to ICP to help achieve these targets. According to CDP (formerly Carbon Disclosure Project), 31 Indian businesses had adopted an ICP in 2021—an increase from the previous year's 25—and another 54 were planning to do so in the next two years.⁹

Adopting Internal Carbon Pricing

Businesses can adopt one or more variants of ICP (Figure 1) depending upon their objectives. These are:

- **Implicit ICP:** A retroactive calculation of the cost per tonne of emissions reduction that a business has undertaken – either voluntarily or as mandated. This informs a business of its average cost of emissions reduction.
- **Shadow ICP:** A notional per tonne cost of carbon, either flat or as a range, is estimated based on existing or forecast regulations, commodity prices and technology costs to quantify the risk of carbon exposure to business assets in a carbon-constrained future to inform investment decisions.
- **Explicit ICP:** This may be implemented as a carbon fee or an internal cap and trade. In the first case, an operational fee is levied per tonne of emissions from business operations. This discourages carbon-intensive operations among business units by increasing their operational cost and generates an internal revenue stream for the company which can be earmarked for low-carbon investments. When implemented as an internal carbon trading programme among business units, it allows for achieving predictable emissions reductions within business operations while curtailing the total cost of doing so through trade.

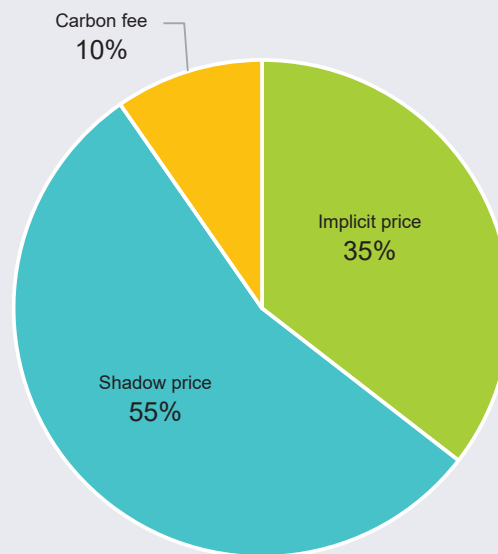
Figure 1: Types of Internal Carbon Prices



Source: Authors' own

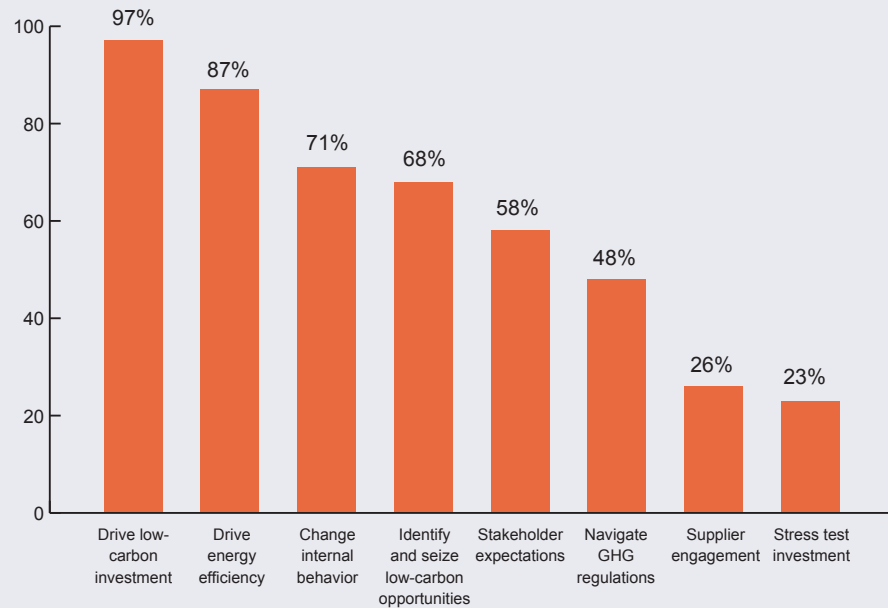
Of the 31 Indian businesses that have implemented ICP, the largest proportion use a shadow price, followed by an implicit price and a carbon fee (Figure 2). The prices adopted range from US\$2.5 per tonne of carbon dioxide equivalent (tCO₂e) to US\$50 per tCO₂e. The average price across all businesses work out to around US\$17 and US\$14 per tCO₂e calculated based on data reported by these businesses to CDP.¹⁰

Figure 2: Types of ICP adopted by Indian businesses

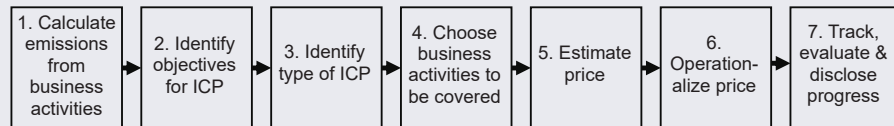


Source: Authors' own, based on data from CDP 2022.¹¹

Figure 3 shows the different business objectives for adopting an ICP as reported by these companies to CDP. These may be broadly categorised as identifying and prioritising green investment opportunities, incentivising measures and behavior to reduce emissions from business activity, preparing themselves for impending climate regulations that curb emissions, and meeting requirements of stakeholders and stakeholder-driven compliance to relevant corporate standards—for example, the recommendations of the Task Force on climate-related Financial Disclosures (TCFD) which require businesses to report on the adoption and use of ICP. While adopting an ICP helps businesses fulfill these varied objectives, the steps involved in implementing the ICP itself (Figure 4) can also be useful in helping businesses align their priorities with climate action and participate more effectively in regulatory schemes such as carbon markets.

Figure 3: Business objectives for adopting an ICP in India

Source: CDP 2022.¹²

Figure 4: Key steps to set an ICP

Source: Authors' own, based on WRI 2018.¹³

How an ICP Can Help Businesses Become Future-Ready

Developing Preparedness and Resilience

An ICP can help Indian businesses prepare themselves for emerging regulations. While India is planning a national carbon market, the EU and US are planning to impose a carbon price on emissions-intensive imports through a carbon border adjustment mechanism (CBAM)¹⁴ which will increase costs for emissions-intensive businesses in India. Moreover, international companies are opting to decarbonise their supply chains due to regulations in their respective countries, and investor and stakeholder emphasis on value chain climate performance. More than 20,000 suppliers were asked by their corporate customers

to disclose their climate performance through the CDP Supply Chain Programme in 2021.¹⁵ This will affect Indian businesses that are part of global supply chains.

Our experience of the carbon market simulation with 21 Indian businesses¹⁶ – a year-long exercise that incorporated all elements of a carbon market, including setting strong emission reduction targets for participants, three rounds of notional emissions trading, and monitoring, reporting and verification (MRV) of participant outcomes – showed those who had already adopted an ICP were better prepared to meet the data demands of the mock market and better equipped to make trading decisions as a result of prior knowledge of their emissions profile and emissions abatement costs.

- **Better Preparedness to Meet Regulatory Data Requirements:** One of the first steps in implementing an ICP is calculating emissions from business activity. During the carbon market simulation, we found that businesses that were already doing so had well-established data collection systems. As a result, they were nimbler in accessing and submitting the required emissions data for MRV of performance in the mock market. Compliance in the national carbon market as well as with other regulations like CBAM will require meeting similar data requirements.
- **Better Understanding of Emissions Profile:** Businesses that had undertaken emissions accounting and implemented an ICP had a better understanding of their emissions footprint and emission reduction opportunities, which were identified in response to the ICP, from the onset of the mock market. They were, therefore, in a better position to plan their compliance strategy to meet their emissions reduction target at the outset as a combination of internal emissions reduction effort and trading in the market.
- **Better Understanding of Emissions Abatement Costs:** Implementing an ICP helps businesses gain a better understanding of the costs of implementing emissions reduction measures. Calculating an implicit ICP provides a business with an estimate of its present average cost per unit of emissions reduced. This puts businesses in a better position to make buying or selling decisions in the trading market by comparing this cost against the market

price of an emissions certificate, thereby effectively leveraging the market to meet their emissions reduction target at the least possible cost.

Enhancing business competitiveness

- 1. Improved Risk Management:** With regulatory and market trends increasingly veering towards supporting a low-carbon economy, the future of conventional fossil fuel-based technologies is uncertain. Shadow pricing is a form of ICP that attaches a notional price per unit of future emissions, such as from investment in carbon-intensive technologies which is reflective of the expected cost the business would have to pay on its emissions in the future. This helps businesses understand the financial exposure of their investments to future risks such as physical climate impacts, high fossil fuel prices and stronger environmental regulations. Incorporating such a price in their investment analyses and decisions enables businesses to make better investment decisions and lower the risk of stranded assets. The calculation of the notional carbon price is dynamic and based on several parameters like fuel prices and exposure to domestic and international regulations.
- 2. Incentivising reductions and creating an internal green corpus:** Businesses can choose to implement a fee per unit on emissions from different business units or different segments of their value chain. This revenue is collected in an internal fund, which can be used to finance a shift to low carbon operations. Thus, implementing an explicit carbon price creates an incentive for behavioural change towards low carbon operations in covered units, and a corpus to fund investment in green technologies or research to spur innovation.
- 3. Aligning to corporate standards and investor expectations:** Several standards or frameworks for corporate disclosures such as CDP and the TCFD framework emphasise businesses report on the use of ICP. Investors and ESG rating agencies are increasingly including businesses disclosed ICP performance as a metric in their decision-making. Adopting an ICP can therefore be a key factor for Indian businesses in improving their ESG performance, meeting investor and stakeholder expectations, and securing finance going forward.

Ensuring Effective ICP

While undertaking a well-rounded approach to inform a suitable carbon price and a pricing approach for a company lends itself to a better understanding of a company's risks, emissions reductions opportunities and a robust carbon management strategy, there are a few important factors to ensure it meets its objectives and continues to do so over time. Particularly, an effective carbon price:

- **Is integrated in the decision-making process:** An internal carbon price is only as effective as its implementation. While choosing a price and a pricing system are critical in enabling an effective low-carbon strategy, the success of an ICP as a key lever to drive change depends on its acceptance and integration in the company's decision-making. This can only happen by ensuring a management-level buy-in as well as institutionally embedding the internal carbon price in risk assessments, investment decisions and corporate strategy. To achieve this, it is important to build capacities of and engage with senior management as well as finance and operations departments over the course of the development of the carbon price and its implementation strategy.
- **Is dynamic:** For a carbon price to stay relevant and useful, an effective carbon price should be a dynamic one which is revisited at regular intervals, and updated to reflect structural changes within the businesses, or its emissions reductions goals, as well as changes in the regulatory and economic circumstances. Updating the carbon price periodically is also key to ensuring it continues to reflect the risk to businesses from climate change impacts or climate regulations and continues to materially influence business decisions to achieve updated emissions reductions goals like creating incentives for technological options for deep decarbonisation.
- **Drives change and accountability:** While there is no right or wrong carbon price, an effective carbon price is the one that can materially affect change in business decisions and, therefore, must be high enough. A carbon price that is embedded into the organisation across business operations and units is one that can engage with employees across levels and functions, encourage deeper behaviour change, shifts away from high emission operations, and

drive accountability at an organisational level rather than being limited to the environment and sustainability division. For a carbon price to do so, it must be operationalised across business units and complemented by efforts to improve awareness and building capacities on using the ICP to make better decisions across the organisation.

- **Is aligned to operational realities of the business:** Heterogeneity in products, geographies of operations as well as the associated regulatory and economic regime are key factors to be considered in the implementation of a carbon price. It is usually recommended to align carbon price with carbon management goals and boundaries. Such a carbon price would reflect the material risks to the business units and help achieve the associated emission reductions goals. Depending on its goals and operations, a business may also use more than one pricing approach to meet such objectives. There is no right carbon price or pricing strategy; the most effective carbon price is the one that is suited to objectives of the business and the climate strategy, materially impacts key decisions and can be adapted to the changes in internal or external circumstances of the business.

Conclusion

As outlined in the previous sections, the process of setting a carbon price itself puts businesses in a position to make more informed choices and commitments in a carbon-constrained world. However, setting a price is only the first step. Effective implementation is important for an ICP to materially enhance business resilience and opportunities. Beyond meeting disclosure demands and regulatory mandates, an effectively implemented ICP can make Indian businesses future-proof by enabling them to better account for potential climate risks, leverage green investment opportunities, and meet their ambitious science-based and Net Zero targets. Beyond business operations, it can also be a tool to drive behavior change, encourage innovation across the value chain, engage employees and stakeholders, and demonstrate effective climate leadership.

There has been a marked increase in the uptake of ICP among Indian businesses in the recent years as they align their business objectives

to the rapidly transforming global economy in response to the climate crisis. While this is encouraging, ICP adoption is still primarily confined to large businesses with international operations. Going forward, these businesses can play a key role in promoting its adoption among smaller, domestic businesses within their supply chains through incentives, awareness, and capacity-building programmes. Such leadership can go a long way in scaling the impact of climate action by the Indian corporate sector and in preparing a larger segment of the industry for emerging regulations, such as the proposed national carbon market.

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Improving the Readiness of Developing Economies to Access Private Climate Finance

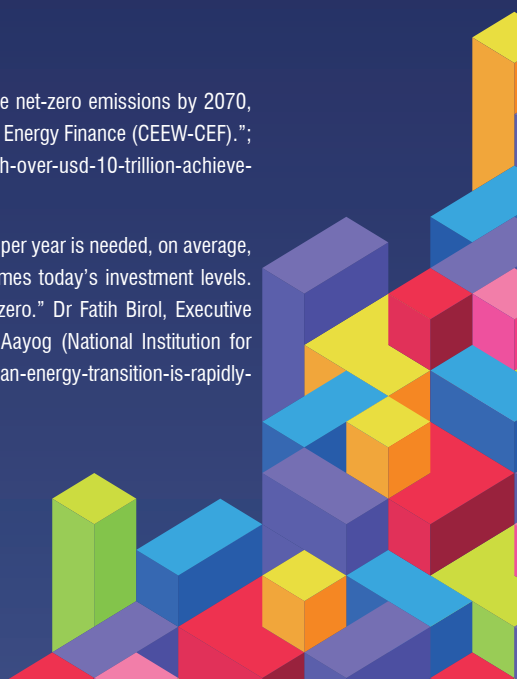
Akhilesh Tilotia and Ambalika Banerji

ESTIMATES SHOW that India will need to invest over US\$ 10 trillion in the next half century,¹ or hundreds of billions of dollars in the next decade,² to meet its 'Net Zero by 2070' climate commitment. These amounts come to around 6 percent of India's current annual GDP. To be sure, India is not alone in requiring massive resources to reach net-zero targets. Developing economies across the world have realised the way forward is to boost climate financing.

For developing countries, large climate-friendly investments require appropriate mechanism for transfer of capital, technology, and capacity. With the right capital structure that aligns the relevant risks with appropriate capital, it is possible to materially incentivise production and consumption of green products such as renewable power, and electric vehicles. Public, private, and philanthropic capital play specific

1 "India would need cumulative investments of USD 10.1 trillion to achieve net-zero emissions by 2070, according to an independent study released today by the CEEW Centre for Energy Finance (CEEW-CEF)."; <https://www.ceew.in/press-releases/india-will-require-investments-worth-over-usd-10-trillion-achieve-net-zero-2070-ceew>; Last accessed: Oct 10, 2022

2 "To reach net zero emissions by 2070, the IEA estimates that \$160 billion per year is needed, on average, across India's energy economy between now and 2030. That's three times today's investment levels. Therefore, access of low-cost long-term capital is key to achieve net zero." Dr Fatih Birol, Executive Director, International Energy Agency and Amitabh Kant, CEO of NITI Aayog (National Institution for Transforming India); <https://www.iea.org/commentaries/india-s-clean-energy-transition-is-rapidly-underway-benefiting-the-entire-world>; Last accessed: Oct 10, 2022



roles in lowering the capital cost barrier to green technology adoption. The COVID-19 pandemic made it evident that technology relevant to global good requires widespread dissemination. Technology transfer in key green sectors, coupled with regulatory interventions, can facilitate its adoption at a global scale.

However, investment and technology are not enough. Developing skill sets for perpetuation of these two aspects requires continued commitment of public and private players to engage with local resources and active participation in the evolution of policies.

With each industry at a different stage of maturity, it demands a unique funding structure—the amount of capital needed, and the type of risk and return it represents varies significantly from one to another. The “demand side” is defined by industries that require these investments and are gaining momentum. Renewables like solar, onshore wind, hydro, nuclear, battery and power storage, electric mobility ecosystem—including electric vehicles that can be charged, smart grids, and distributed production—are now growing into large industries. Meanwhile, the relatively newer ideas like green hydrogen and offshore wind are witnessing active public policy support and private interest.

As India and other developing countries prepare for transitioning into green energy, they need to reimagine the architecture that underpins the financing of the green economy. The imperative is a strong supply-side financial architecture to pump money into the relatively new industries. One aspect that makes green financing unique is that the challenges created by climate change are global in nature. It is therefore expected that significant international and multilateral capital will be invested to adapt to these challenges. India and other countries need to create a network of financial institutions that can pool and channel global resources into Net Zero initiatives.

Vectors of Green Finance

The following are the four vectors that underpin the development of green financing landscape across countries:

- Where will investments be required?
- Who will lead the pooling of finances and disbursement of investments?
- What will the financial structuring look like?
- What are the skill sets and ecosystems that need to be developed?

Once countries start framing the answers to these questions, they can construct the architecture of improving readiness of developing economies to access private climate finance.

Key Investments Required

A primary task is to identify whether the focus of investment is to address mitigation, adaptation, or resilience of societies to climate change. Second, it is important to consider the sectors in which the investments will be made—new age green industries; hard-to-abate sectors; or efficiency improvements in transition sectors. The pool of capital required for the focus areas and the varying sectors will differ. For example, adaptation and resilience may require longer-term public capital while new-age, high-growth sectors in mitigation may witness risk-seeking private capital. Long-term public capital implies public investment by local governments, or government to government transfers between the developed and the developing world, or finances intermediated via multilateral development banks and funds like Green Climate Fund. When it comes to private investments, funds with different types of risk appetite like venture funds, private equity funds are looking for investment opportunities that can move the world to Net Zero.

Commercial deployment of all technologies, especially for mitigation, may not be feasible in many countries. Some important lessons on property rights have emerged from the COVID-19 pandemic when it comes to “global goods”. Vaccine supply is one such example. For the vaccines to reach as many people across the globe as possible, arrangements were implemented with respect to: appropriate pricing (including zero in case of donations); technology transfer; and legal protections. This was best

exemplified by the statement of the United States Trade Representative Katherine Tai in May 2021 on the Covid-19 TRIPS waiver which said: “This is a global health crisis, and the extraordinary circumstances of the COVID-19 pandemic call for extraordinary measures. The Administration believes strongly in intellectual property protections, but in service of ending this pandemic, supports the waiver of those protections for COVID-19 vaccines. We will actively participate in text-based negotiations at the World Trade Organization (WTO) needed to make that happen.”

From a climate change perspective, it is instructive to consider whether similar mechanisms can be applied for green technologies as they cross over from innovators to entrepreneurs in the developing world. The global governance mechanism must frame rules that allow and require differentiated pricing and technology transfer.

Who Pays?

Climate change is a global challenge, and the developed world is committed to a significant transfer of capital to the developing world. Therefore, various forms of public collaborations among governments will take place: bilateral, small groups, or multilateral. Collaborations between private capital allocators like long-term pension funds, and public entities such as sovereign funds will eventually also become more common.

The current model of countries coming together annually to take stock of their commitments towards climate change and make new announcements has proven to be useful. However, countries have yet to demand accountability from member states that have failed to fulfil their climate financing commitments. While their Net Zero commitments and Nationally Determined Contributions (NDCs) are scrutinised in detail, the inability of the world to fund these transitions has gained little attention. The current governance mechanism offers tepid disincentives to countries that have failed in their financing targets.

A significant amount of private capital will also nurture growth and yield opportunities. Each capital pool will require specific types of governance structures to align with the varied interest of stakeholders.

Financial Structuring

Funding across equity, debt, mezzanine, concessional/impact, and grants will be required across the risk-return spectrum. Each type of capital will also segment itself into different categories—from those willing to take small risks on many potentially early stage investments to those who are willing to bet larger amounts of funds on mature technologies and industries. Sovereigns and sovereign-backed institutions, development financial institutions, and philanthropic capital will take the lead in funding newer technologies, higher-risk projects, and projects with no immediate monetisation possibilities, while more commercial financial institutions will play at different ends of the risk spectrum. A layer of risk-takers and risk-sharers among governments and other higher-risk capital providers can enable private capital in the emerging areas. Over time, private financial institutions will also play across the spectrum—from seeding majority-owned platforms to passive equity stakes, and from underwriting and leading debt to syndicating it.

The varied nature of entities like alternative investment funds, banks, multilateral developmental organisations, asset management companies, insurance and pension funds, public sector enterprises, and government departments will need to develop their green capabilities.

A large part of improving the readiness of developing countries to access private climate finance is to enhance the local financial system to create a market where financial demand and supply align.

Skill Sets and Ecosystems

The presence of technology and finance is not enough. Ensuring that society embraces emerging technology is a mix of availability, access, and affordability. A society needs to develop the capacity for deployment and usage to meet this requirement. This may not be always possible at the local or national level without significant capacity building. In many cases, entities like the National Investment and Infrastructure Fund (NIIF)³ in India support central and local governments in public policy design and contract structuring. NIIF is a sovereign-linked asset manager which pools together capital from government and various

³ For more details on NIIF, please visit the portal: <https://www.niifindia.in/>

domestic and foreign institutional investors to invest in commercially viable projects in key sectors in the country.

Such a role can also be played by multilateral development banks and financing institutions entrusted by global climate governance mechanisms. Building the technical capacity to run the plants, maintaining, and operating the systems need to come in from the original equipment manufacturers. While creating local capacity can lead to localisation of skills and manufacturing can help lower costs to make it easily adaptable. Absorbing technological knowhow must be a key component of global climate governance.

Ramping up knowledge like coming up with climate risk ratings, significant reorientation with companies and investors alike reporting emission figures will play a key role in making green financing ecosystem vibrant. New platforms will be required to aggregate and analyse green datasets from companies and governments. The data will throw light on how effective the efforts by financiers and industries has been. Compiling data on reduced emissions from across companies can help determine if emissions have gone down in the country over time. Policy and public financing in various sectors will continue to evolve as sectors mature and technologies change—this will require deft policy professionals on both public and private sides. Finally, investment and debt management teams will need to be conscious on how committing capital to green projects impacts their fiduciary duty to stakeholders for risk-adjusted returns.

A Roadmap for Improving Readiness

The current global climate governance framework requires strengthening so that all parties face incentives and disincentives depending on meeting or missing their commitments. Global forums are where countries, corporations, and investors agree on meeting their financial commitments. Countries report on how they are faring with respect to nationally determined contributions. A report, championed by the OECD, details the flow of funds from the developed world to developing world.⁴ It

4 OECD (2022), *Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries in 2013-2020, Climate Finance and the US \$ 100 Billion Goal*, OECD Publishing, Paris, <https://doi.org/10.1787/d28f963c-en>.

highlights how more than 80 percent of the funds that flow are equity and debt funds that seek commercial returns on their investments. There is a need for a global order that rewards countries fulfilling reduced carbon emissions, scales up investments, and holds countries accountable for non-compliance to the commitments.

The focus of various global forums is on the flow of carbon emissions and less on its stock. The climate debt owed by historical emitters can be a significant financial asset owned by the developing world. The financial valuation of the climate debt is a highly contentious issue—both from the perspective of methodology and financial implications. One way to start out is to consider the present value of annual commitment by the developed world to provide US\$ 100 billion a year to the developing countries. If the climate debt was valued and appropriately allocated across countries, it would have created a clear demarcation of the owners and issuers of such debts. Such commitments and obligations can catalyse the creation of financial instruments which can help developing countries finance their capital expenditure (CAPEX) and operational expenditure (OPEX) of green transitions. Multilateral development banks can be effectively leveraged to offer both capital and risk-sharing mechanisms to the developing world. It is important to note that while the numbers that emerge from such calculations may appear large, the actual investment required for mitigation, adaptation, and resilience is significantly higher than these figures.

Building a Network of Green Financing Institutions

The financial architecture of developing countries requires the creation of a network of institutions that will coordinate fund-raising from various entities (commitments made by nation states, grants and transfers by governments or impact funds, commercial equity, and debt funds), and identify the projects or managers to support and grow to fructify these commitments.

It will be necessary for national institutions and local governments to work in tandem. A model institution would be responsible for pointing out any gaps prevalent between investments required and funding available with global and local sources. Its responsibilities would include developing a strong monitoring mechanism and reporting on climate related outcomes of relevant investments.

Creating institutions that establish strong linkages between finances and tangible projects will catalyse local capacity building and deployment. The case study of the Green Growth Equity Fund (GGEF) in India is instructive. Seeded by NIIF with a commitment of US\$ 170 million along with a matching commitment from the Foreign, Commonwealth & Development Office (FCDO) of the UK, GGEF has gone on to become one of the largest single-country, climate-focused funds in emerging markets with a corpus of US\$ 740 million. The fund has attracted marquee investors from around the globe, including the Green Climate Fund bringing in impact capital. GGEF has deployed these funds in various investments in the areas of solar rooftop, utility scale renewable company, e-buses, and waste and water management. This helps develop the local economy based on many commercially viable and sustainable projects.

There is also a need to document the impact of the investments. Over the last few years, many organisations have taken on Environmental, Social, and Governance (ESG) principles as a key mandate when it comes to investments. There is a large demand for professionals who can help assure various stakeholders that the measurements and disclosures are fair representations of the underlying reality. The science and art of measurement and disclosures is still developing. A global governance mechanism can help set broad guidelines on how to integrate the non-financial disclosures with the financial ones. Cross-country and cross-sector learnings can be shared by intermediated by standard setting bodies for professionals. This will allow facilitating knowledge-sharing. Over time, the standards for climate-related disclosures will become the norm.

Conclusion

The current financing and investing organisations will need to massively scale up while new ones will need to channel a considerable amount of funds to transition to Net Zero. Identifying gaps in the four vectors, and mitigating the existing challenges is critical for seamlessly linking the relevant capital to the appropriate projects. This would be a crucial step to step up the readiness of developing economies in accessing private climate finance.

Addressing New Climate Realities Through ESG: The Role of Corporate Governance

Shailesh Haribhakti and Suyash Agrawal

CLIMATE CHANGE is not a 'me or you' issue; it is a crisis that humankind must face together. Climate change is increasingly taking shape, sooner than expected and faster than imagined, destroying more than humanity has insured. Notably, the countries and communities that will be most affected by these changing weather patterns have contributed the least to cause it. The generations that stand to be the most at-risk in the future have the least say in climate-related policy and politics. Wars are raging, global distrust is peaking, and corporations are profiteering, even as climate activism is failing and people are suffering.

In this dire situation, who can be the torchbearer of change? Which societal structures are the most suited to deliver on the promise of a better tomorrow? Is it in their interest to act? What must they do, and how must they prioritise? Where are the opportunities to decarbonise while creating value for stakeholders? The role of corporates, their investors, board of directors, management teams, and employees has never been more critical. To better understand the role corporates can play, it is essential to review the evolution of the world economy and the social contract (see Figure 1).



Figure 1: Evolution of the World Economy and the Social Contract

Evolution of the world economy
Business models, population and rising temperatures are all interlinked

	Up to the 19 th Century	20 th Century	21 st Century
Dominant Business Model	Colonialism	Capitalism	Entrepreneurialism/ Consumerism
Key Drivers	Countries and Dynasties	Corporations	Citizens
Metrics	Power	Profits	Purpose
Population Figures	1850 – 1.2 Bn 1900 – 1.6 Bn	1950 – 2.5 Bn 2000 – 6.1 Bn	2010 – 6.9 Bn 2020 – 7.8 Bn 7x growth
Global Emissions (CO2)	1850 – 196.9 Mn Tons 1900 – 1.95 Bn Tons	1950 – 6 Bn Tons 2000 – 25.23 Bn Tons	2010 – 31.61 Bn Tons 2020 – 34.91 Bn Tons 175x growth
Global Mean Annual Temperature	1880s – 13.73 degree Celsius	1900s – 13.74 degree Celsius 1960s – 13.99 degree Celsius	1990s – 14.31 degree Celsius 2020s – 14.91 degree Celsius

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Source: China Europe International Business School and You Commit, We Implement (YCWI) Research¹

During the peak of colonisation in the 19th century, powerful countries in the West exerted their force on weaker ones to exploit their resources. This started unravelling in the twentieth century, which was marked by two world wars, the liberation of several erstwhile colonies, massive post-war industrialisation, the rise of corporations, and a race between the US and the former Soviet Union to establish supremacy.

The 21st century is seeing unprecedented nuclear stockpiles, global warming, mass pandemics, and a failing economic agenda. Indeed, the top five risks in the modern world are either environmental or social.² Resolving these critical risks requires scrutinising the social contract, the implicit agreement on which all societies rest. It is an accord that balances the roles and responsibilities of corporations and states with that of individuals. While the exact terms keep evolving based on the law of a society, the larger idea is to keep humanity harmonised. But now, this contract appears to be breaking globally.³

While every country faces its individual problems, the premise remains the same. Corporations started to write rules in the liberalised economies, making way for monopolies. On the other hand, China seemed to have combined top-down authoritarianism with the efficiency of capitalism. As corporations grew bigger, governments in liberalised economies ceded control. Focused on shareholder value, corporations failed to

deliver on environmental and social agendas. Instead, global warming, unbridled consumer price inflation, fear of constant surveillance, human rights violations, and mass wealth disparity emerged.

This widening gap between corporate, social, and government agendas calls for those in power to become accountable and transparent. As such, a pressing unprecedented need to deliver on the environmental, social, and governance (ESG) imperative has emerged.

The ESG Imperative

Corporate governance is the measure of how well companies are run. It is a set of rules, practices, and processes by which firms are directed and controlled. The board of directors acts as stewards of the company and is accountable to investors. It is entrusted with guiding the management while balancing the interests of all stakeholders.

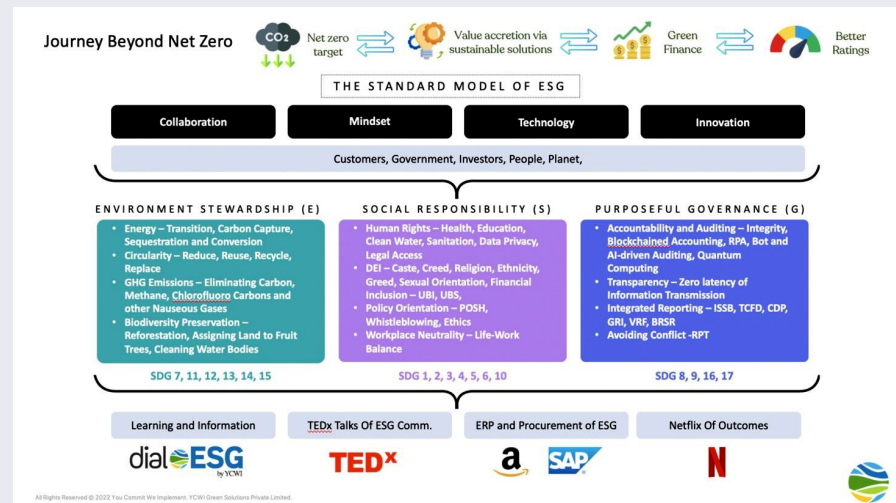
Today, shareholder primacy has taken a backseat. It is not enough for companies to merely make profits. They must actively contribute to restoring the environment, manage climate risk, present a duty of care towards their employees, and balance the expectations of all stakeholders. Boardrooms must actively steer management teams to account for the new realities of climate change. At the core of this manoeuvre will lie a deep understanding of the tenets of the ESG framework—a mindset or tool to deliver on the promise of “conscious capitalism”.⁴ ESG is an attempt to refocus on stakeholder primacy over shareholder value, to think long-term value over short-term profits, to drive the equitable distribution of opportunities, and to restore the ecological balance.

Research across multiple sectors has shown that global companies that have adopted sustainability with a defined net-zero target have managed to attract green finance and better ratings. They implement sustainable solutions that drive enterprise value accretion and report transparently. Committing to a net-zero target requires active efforts towards mitigation and reduction. A multiyear decarbonisation plan must follow a target commitment. Implementing sustainable solutions is often integral to achieving ambitious targets. These solutions enhance profitability and operational efficiency. Better ratings performance is often the most favourable outcome of all ESG-focused initiatives.

All organisations need to make their net-zero commitments considering scopes 1, 2 and 3 emissions.^{a,5} Companies must believe that a change in their business model will lead to better unit economics. When driven by lower costs of operation, ESG will take root. ESG can be driven through collaboration, a change of mindset, and the adoption of exponential and converging technologies and rapid high-skill innovation. This will be exercised by five economic interests: customers, governments, investors and bankers, the larger public, and the planet.

The Sustainable Development Goals (SDGs) are a common universal language to communicate efforts in the areas of impact. They have been extensively used and mapped into the standard ESG model (see Figure 2).

Figure 2: The Standard Model of ESG



Source: You Commit, We Implement (YCWI) Research⁶

E is for environmental stewardship, and encompasses the following:

- Energy transition, carbon capture, carbon sequestration, and carbon conversion to energy
- Circularity in terms of reducing, reusing, recycling, and replacing
- Efforts of significant importance to eliminate greenhouse gas emissions and other noxious gases that do not permit safe breathing

^a Scope 1 are an organisation's direct emissions; Scope 2 are the indirect emissions; and Scope 3 are the indirect emissions attributable to upstream and downstream activities across the organisation's value chain.

- Biodiversity preservation, including reforestation and cleaning air and water bodies

SDG-7 (affordable and clean energy), SDG-11 (sustainable cities and communities), SDG-12 (responsible consumption and production), SDG-13 (climate action), SDG-14 (life below water), and SDG-15 (life on land)⁷ support environmental stewardship.

S is for social responsibility, which includes:

- Human rights, particularly the right to high-quality healthcare (including telehealth^b)
- Access to education, clean water, sanitation, data privacy and legal remedies
- Diversity, equity, and inclusion, and no discrimination based on caste, religion, ethnicity, gender, or sexual orientation
- Financial inclusion through instruments of universal basic income and universal basic services
- Policy orientation, particularly on sexual harassment, whistleblowing, unethical conduct, workplace neutrality, and work-life balance

SDG-1 (no poverty), SDG-2 (zero hunger), SDG-3 (good health and well-being), SDG-4 (quality education), SDG-5 (gender equality), SDG-6 (clean water and sanitation), and SDG-10 (reduced inequalities) relate to social responsibility.

The G stands for purposeful governance, and includes:

- Accountability through independent and thorough auditing that will deliver integrity
- Blockchain accounting and robotic process automation to drive auditing through the large-scale deployment of machine learning, artificial intelligence, and quantum computing
- Transparency and zero latency in information transmission

^b For instance, the mapping of the genome, microbiome, the availability of blood markers, and all DNA representations in the cloud so that a medical practitioner in any part of the world can treat a patient located anywhere else.

- Integrated reporting on the six capitals,^c while mapping critical elements of other frameworks (such as the Task Force on Climate-related Disclosures, Global Reporting Initiative, Value Reporting Foundation, and the Climate Disclosure Project)
- Avoiding greenwashing, even as regulation must accommodate for heuristics and defined deviations to make reporting and assurance more usable for investors
- Avoiding conflicts that may arise due to related party transactions
- The G in the ESG equation supports SDGs 8, 9, 16 and 17.

SDG-8 (decent work and economic growth), SDG-9 (industry, innovation, and infrastructure), SDG-16 (peace and strong institutions), and SDG-17 (partnering for the SDGs) support purposeful governance.

Significant progress across each of the E, S, and G sub-elements can only be achieved when supported with initiatives that encourage a deeper understanding of the ESG agenda, both for an organisation's internal benefit and as a template for others.

Bringing ESG and Climate Action to Life

While regulators are doing their bit, laws and guidelines mean nothing without honest and committed enforcement. Boards must push for the implementation of ESG through a closed loop of strategy integration, capital investment, and good governance. This must be supported by continuous measuring, monitoring, and reporting.

Strategy integration

Corporations can enhance the magnitude of their environmental and social impact by causing fundamental strategic shifts in their organisational purpose, ethos, and decision-making rationale. Corporates must identify critical risk areas, reimagine business models, deploy new-age technology-driven solutions and continuously track outcomes. To seamlessly integrate ESG values, boards must push for the following:

^c The six capitals are financial, manufactured, intellectual, human, social, relationship, and natural, as propagated by the Integrated Reporting Framework.

- **Building ESG-competence:** Boards must ensure they have the necessary awareness, exposure, and knowledge of ESG-related risks and opportunities. The combined experiences and skills of board members must equip them to discuss and implement climate-related strategies freely. Board members must devote significant resources towards educating themselves on the nuances of ESG. App-based gamified learning modules, TedX-type talks, and creative audio-visual content will help organisations bring ESG to the centre of all decision-making.
- **Understanding geopolitical risks and impacts:** Staying informed on global events and estimating their effects on macroeconomics, climate change, and supply chains is crucial. Risk management and scenario analysis must lie at the core of the board agenda and decision-making.
- **Embedding SDGs in strategy and assessing the economics of impact:** The sustainable economy has the potential to unlock US\$12 trillion in economic value and 380 million jobs by 2030.⁸ A rethink from an SDG lens must drive process improvements, product redesign, and strategic integrations.
- **Net-zero target and Science Based Targets initiative (SBTi) adoption:** To build a company-wide culture of climate consciousness, boards must actively push for adopting a net-zero target validation by the SBTi. This must be supported by scientific baselines, a wide greenhouse gas (GHG) inventory, and a multiyear strategy with interim targets.
- **Diversity, equity, and inclusion:** Most underserved communities, tribes, cultures, and genders that are disproportionately impacted by climate change have the least representation in policy, politics, and corporate leadership. Boards must sensitise themselves to the interconnectedness of sustainability and social agendas.

Capital investment

While mindset change will drive the evolution of organisational strategy, on-ground implementation is driven by capital allocation, the deployment of innovation and technology, and continuous monitoring. Boards must

no longer see ESG and building climate resilience as an additional cost but as an opportunity to reform, raise green capital, and create value. Capital must find a way for the following:

- **Deployment of decarbonisation technology in order of potential to drawdown:** Corporates must create a GHG inventory to identify critical sources of emissions in their manufacturing processes and supply chain networks. Value accretive solutions must be deployed at scale to reduce carbon impact. An enterprise resource planning (or an integrated management plan) for sustainable procurement must record and rate all vendors.
- **Human capital development:** The pandemic has highlighted life's impermanence and transient nature. People want more than just financial security; they want to lead fulfilling and healthy lives; they seek purpose, independence, and development. As such, an investment in ESG training will accrue returns for years.
- **Biodiversity preservation and community enhancement:** Corporates must perform a detailed assessment of the impact of their operations on neighbouring communities, and the environment. Focused efforts and investments to revitalise ecosystems and rehabilitate impacted communities bring organisations the necessary social capital and credibility to operate in vulnerable regions.
- **Automating auditing, compliance, and governance:** Investments must be made to enable accounting with blockchain and link it with real-time auditing and reporting. Creating a transparent ecosystem from recording to reporting must be the aim of this activity.
- **Sustainable communication:** Leveraging new-age tools and platforms such as blogs, videos, podcasts, research papers, and reports to drive stakeholder engagement and build goodwill through climate action.

Good Governance

As ESG and climate take centre stage in boardroom conversations, the sustainability governance landscape is rapidly evolving. Regulators and investors increasingly demand that companies be transparent and

accountable for their climate-related actions. Good governance involves maintaining stakeholder expectations, corporation action, and public perception. To enable better climate governance, boards must push for:

- **Double materiality:** Rate critical issues on their impact and relevance to the company and stakeholders. Assessing stakeholders' perception of risks helps build long-term strategy and priority of actions.
- **Framework-based reporting:** Reporting bodies and regulators have developed comprehensive reporting frameworks to standardise disclosures. These include the Global Reporting Initiative, Integrated Reporting, Climate Disclosures Project, Task Force on Climate-related Financial Disclosures, and the Business Responsibility and Sustainability Reporting framework (which is specific to India). Compliance with such frameworks will give the needed regulatory push for climate debates in boardrooms.
- **ESG governance structures:** Firms can consider creating an ESG Council as a board-level committee, and can constitute chief experience officers and corporate social responsibility and sustainability heads.

Corporate action should no longer be driven by rating upgrades alone. It is essential to focus on improving and enhancing the ecosystem. Corporations must strive to make the future better than the past. Shifts in strategy, business models, capital allocation, and governance structures will reveal the full economic value of a sustainable and social transformation.

Endnotes

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Green Debt: Realising the Potential of Green Bonds in Emerging and Developing Economies

Promit Mookherjee

THE LACK OF FINANCIAL flows to green sectors remains the biggest impediment to climate action in the Global South. Emerging and developing economies (EMDEs, not including China) will need to spend on climate action around US\$ 1 trillion per year by 2025, according to a recent report jointly commissioned by the COP26 and COP27 presidencies.¹ This will be in addition to much of the infrastructure investment that will be needed in these economies to fulfil their agenda pertaining to the Sustainable Development Goals (SDGs).

This will require substantially scaling up all types of financial instruments towards climate action. In particular, private capital, both domestic and international, will have to play a critical role in mobilising such a quantum of resources. However, private capital flows to green sectors remain scarce. Around 70 percent of the finance available to developing economies has been contributed by the public sector, largely drawn from domestic resources.² The key reason for this has been attributed to the perceived risks associated with investing in developing countries, such as delays in project implementation, policy uncertainty, and currency risks. In this context, the bonds market, noted for its risk-alleviating features, has become an important conduit for private green investments.



This essay assesses the benefits and challenges that countries in the Global South will need to navigate to maximise the utility of green bonds. It identifies some key imperatives for scaling up these instruments in a sustainable manner.

What Is a Green Bond?

As per the Green Bonds Principles,³ a green bond is defined as “any type of bond instrument where the proceeds will be exclusively applied to finance or refinance, in part or in full, new and/or existing eligible Green Projects.” Like any other bond, these are fixed-income instruments, the key difference being the fact that proceeds can only be used for predefined green projects. These bonds are part of the broader universe of sustainable debt instruments, which have grown in response to sharpening investor focus on environmental and social objectives.

Sustainable debt instruments are linked to two kinds of outcomes. ‘Activity-based products’, which include green bonds, can be used to finance or refinance a specific project, which has direct environmental or social benefits. ‘Behaviour-based’ products tie the financial characteristics of a debt, such as the interest rate, to a sustainability target, measured through predefined key performance indicators (KPIs). These bonds are essentially utilised by businesses to raise additional money to help meet their environmental, social and governance (ESG) targets.

Green bonds belong to the first category and can be utilised to finance specific infrastructure projects, related to prespecified green sectors, such as renewable energy, clean transportation, sustainable waste and water management systems, energy-efficient and green buildings and biodiversity conservation.

Table 1. From Green Bonds to Social Bonds: A Comparison

Instrument	Objective	Nature of outcomes	Purpose	Total market as of 31 December 2021	Proportion of sustainable debt
Green bond	Raises funds for projects with specific environmental benefits.	Activity-based	Environmental projects	US\$ 1.6 trillion	57%
Sustainability-linked bond	A debt instrument with specific financial or structural characteristics tied to the issuer's sustainability objectives, based on predetermined KPIs.	Behaviour-based	Institutional ESG targets	US\$ 135 billion	19%
Sustainability bond	Raises funds to deliver a combination of environmental benefits and social outcomes. This has elements of both green and social bonds.	Activity-based	Environmental and social projects	US\$ 520.5 billion	5%
Social bond	Raises funds for projects that deliver positive social outcomes. Examples include access to healthcare and education.		Social projects	US\$ 538.8 billion	19%

Sources: Bloomberg⁴ and Climate Bonds Initiative⁵

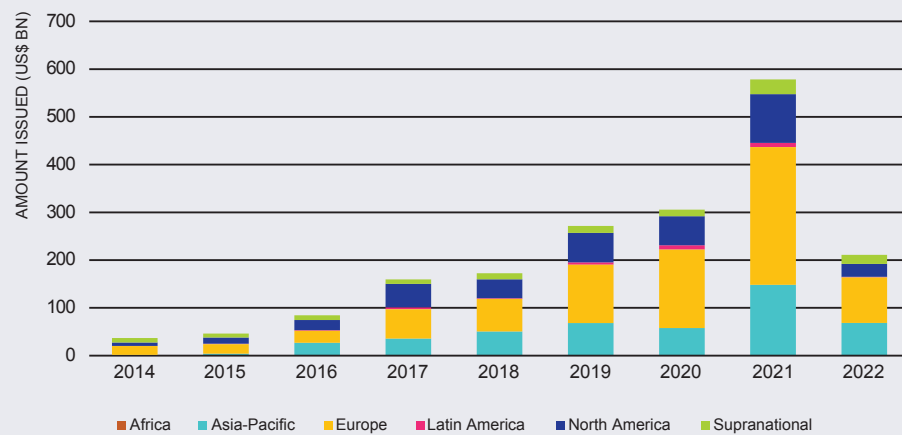
Green Bonds Remain Concentrated in Developed Economies

The soaring popularity and increasing utility of green bonds is evident from the rapid growth of these instruments. Between 2017 and 2021, annual green bond issuances increased almost fourfold, crossing the half-a-trillion mark (US\$ 522.7 billion) in 2021. The total size of the green bond market was estimated at US\$ 1.6 trillion in 2021, accounting for around 56 percent of the total sustainable debt market.⁶

However, the current green bond market continues to be dominated by certain geographies. Historically, Europe has been the most prolific issuer; it accounted for 50 percent of all green bond issuances in 2021.

The Asia-Pacific accounted for 26 percent of issuances in 2021, with China accounting for 70 percent of these. Africa and Latin America lag far behind, together accounting for less than three percent of all issuances in 2021. Thus, green bonds have largely been concentrated in the developed world, with estimates from the Climate Bonds Initiative suggesting that emerging economies made up only 21 percent of all issuances in 2021. However, the growth rate of these bonds has been progressively improving in emerging economies, particularly in the Asia-Pacific and Latin America.⁷

Fig. 1. Distribution of Green Bond Issuances, by Region



Source: Climate Bonds Initiative⁸

There has also been a significant evolution in the kind of issuers taking up green bonds. While most of the issuances in the initial years were from supranational entities, current issuances are from a much wider base. If we particularly look at emerging economies, a broad set of issuers have taken to green bonds. The private sector made up a large share of issuances in 2021, with corporations accounting for 53 percent of all green bond issuances, up from just 24 percent in 2017.

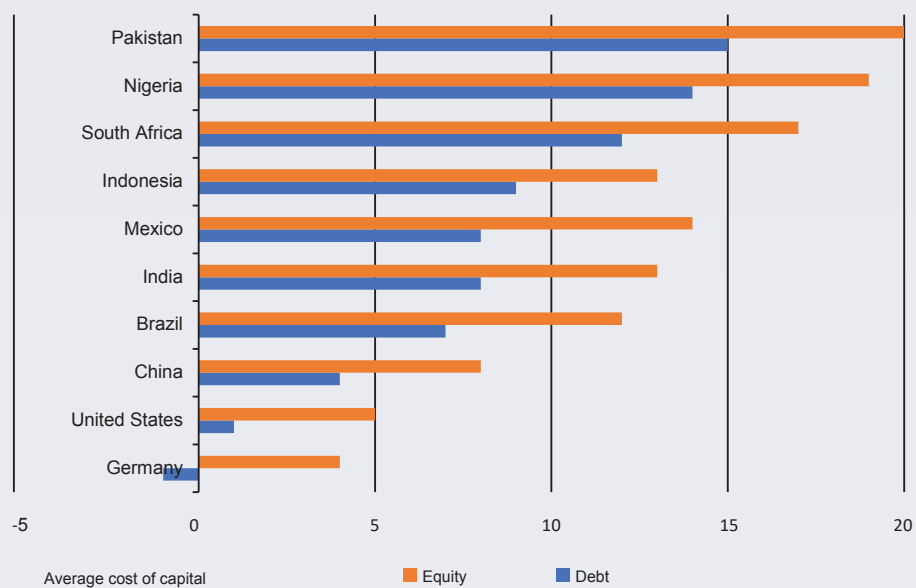
Importantly, green bonds have become a key method of raising funds for the public sector as well, with sovereign, local and government-backed entities making up 15 percent of all issuances. Public development banks (PDBs), constituting only eight percent of all issuances, can perhaps be counted as the one stakeholder that has not taken up green bonds in a significant way, but has substantial potential to be a catalytic force in the bonds market. These banks have unique capabilities and can make several other kinds of private investments crowd around. This will be discussed later in this article.⁹

The Promise of Green Bonds for EMDEs

Future growth in the green bonds market is expected to be driven by the growing interest in these instruments in emerging economies of Asia, Latin America, and Africa. Green bonds provide an effective financing solution for EMDEs due to some specific characteristics, which are discussed in the succeeding paragraphs.

First, high financing costs remain a key barrier to green investments in the Global South. The International Energy Agency (IEA) estimates that the nominal financial costs for both debt and equity instruments can be up to seven times higher in EMDEs, compared with those in the United States and Europe (Fig. 2). The premium reflects the high perceived risks associated with investment in less developed markets. They are also symptomatic of a home bias for both individual and institutional investors in more developed economies.¹⁰ This can also be gauged on the basis of the high financing costs for even mature technologies. For example, Weighted Average Cost of Capital (WACC) for solar PV financing for India was around 10.4 percent in 2020, more than double the cost of capital for the Organisation for Economic Co-operation and Development (OECD) countries¹¹ – this despite India being the fourth largest market for solar PV and exhibiting a growth rate far higher than those in many of the OECD nations.

Fig. 2: Cost of Capital (Debt and Equity), Nominal Values (By Region, 2020)



Source: IEA¹²

Green bonds can be a means to reduce the cost of capital since these bonds are often issued for lower yields, compared with traditional bonds, known as the ‘greenium’. Several studies have now shown that green bonds experience a statistically significant, positive premium over traditional bonds.^{13,14} For example, an analysis of the green bond issuances between 2014 and 2021 by the Federal Reserve found that green bonds have a yield spread that is 8 basis points lower, relative to conventional bonds.¹⁵ However, premiums for green bonds have so far been observed largely in developed economies, particularly in Europe.

The relatively smaller size and the recent growth of the green bonds market in EMDEs makes it difficult to draw firm conclusions. However, a study in 2021 did find that the greenium observed in EMDEs in particular was around 3.4 basis points, but only in the secondary market.¹⁶ As the market for green bonds grows, however, the same reasons that led to substantial greeniums in the developed market—oversubscription and willingness to accept lower returns for green investments—should hold in EMDEs as well.

Second, even if green bonds are not associated with premiums, their specific characteristics can expand the investor base for developing economies. This is important to solve the capital supply problem that EMDEs face due to less mature capital markets, which cannot adequately direct funds to low-carbon projects. In particular, green bonds can be an effective means to reverse the home bias by providing a stable entry point for newer international investors and building confidence in the green tech ecosystem, which can translate into further investments in the future. These bonds can also have a positive impact on the demand side, potentially improving business performance by attracting new customers, who may get inspired by the environmental credentials of the firm issuing green bonds.

Finally, green projects face the issue of short debt tenures as well. Green projects, particularly large-scale renewable energy projects, have long payback periods and uncertain business models. These projects, ideally, require long-term debt with tenures ranging from 12 to 15 years. However, the banking systems in EMDEs, which are the major source of debt finance, prefer lending for shorter debt periods. Past experiences with non-performing infrastructure assets also lead to a low appetite for taking on riskier debt, associated with newer renewable projects.

Green projects are largely more suitable for lenders with traditionally longer debt tenures—e.g., insurers and pension funds. The longer tenures of green bonds seem to suit the needs of long-term investors, making them an ideal instrument to channel such investments into green sectors. They also provide an efficient solution for long-term investors to hedge interest risks across liabilities while meeting the increasing imperative to invest sustainably. However, the attractiveness of green bonds rests on having a robust framework for avoiding issues of greenwashing. This is particularly important for pension funds and insurers, who have to ensure clear buy-ins from their investors, given the considerable premium.

Sustainably Scaling Up Green Bonds in EMDEs

The potential for green bonds in EMDEs is fairly clear. However, these instruments continue to face several challenges, as is evident from their slow growth.

The first issue is related to scale. The issuances of green bonds need to achieve a certain scale, particularly for attracting international investors. Underdeveloped capital markets and often inadequate regulatory and governance frameworks hinder large issuances in EMDEs. Second, the lack of a clear pipeline of green projects that are perceived to be bankable, limits investments to certain sectors and hinders investment in developing capabilities for assessing green bonds.

Third, the administrative cost for green bond labelling in EMDEs continues to be higher than that in developed economies. Specialised capabilities and domestically available guidance for green bond issuances are limited in these nascent markets, leading to dependence on more expensive international sources. The risk of greenwashing also looms large and is a crucial reason for often subdued interest in green bonds in EMDEs.

Finally, poor debt management and lack of public resources are persistent problems in developing economies. An overdependence on debt instruments for infrastructure investments has already led to a debt crisis in many of these economies. Thus, issuances of green bonds cannot be seen as a silver bullet for all cases and need to be contextualised within the broader debt situations in these economies.

EMDEs must therefore consider some critical enabling actions for scaling up these instruments sustainably:

- **Creating a clear framework for green finance:** The financing gap in EMDEs will require large-scale mobilisation of several forms of capital. Different green sectors will have unique capital structures, requiring specific forms of capital to scale up at the pace needed to achieve Nationally Determined Contributions (NDCs) and beyond. To provide direction to a wide spectrum of investors, an overall financing framework is needed with a granular understanding of the different areas requiring capital. Of course, such a framework will need to identify the areas of prioritisation for domestic public expenditure. However, it must also clearly identify avenues for scaling up international finance, both private and supranational, to catalyse climate action. This framework should clearly delineate the role of debt in green transition and identify a country priority list of green projects for debt finance. It must also clearly identify the stages of green projects where bonds can be useful. This will not only be an important step for debt management that will be prudent, but also a key signal to achieve scale in the green bonds market.
- **Institutional guidelines for green bonds:** Achieving scale in the green bonds market will require improving transparency and building integrity in the market. A prerequisite for this will involve developing watertight guidelines for the issuances of green bonds and clearly identifying a taxonomy for projects, which can fall into these categories. Existing financial regulators must take the lead in developing these guidelines. Existing green bond principles can provide a reference point but will need to be adapted to the national context in a deliberative manner, taking inputs from stakeholders in the financial community as well as in the real economy. The public sector can also take the lead in implementing these guidelines through large-scale sovereign issuances.
- **Incentivising green bonds:** Subsidies can be a useful tool in nascent green bonds markets, both for encouraging greater issuances and for building demand. Singapore's Sustainable Bond Grant Scheme is one such example, wherein the Monetary Authority of Singapore offsets up to US\$ 100,000 in terms of additional expenses incurred for an external review of green bonds. Until a domestic ecosystem

for green bonds labelling can be developed, such subsidies can be an effective way of reducing administrative costs. Furthermore, green bond issuers must also look at innovative ways to recoup administrative costs. Utilising the green premium to recoup the cost of labelling is one possibility. However, this must be carried out carefully, without lowering the yield to an extent that it reduces demand. Instead, the yield can be lowered in a staggered manner. Incentives can also be an important way to generate a greater demand for these instruments; tax breaks for investments in green bonds can also be a useful tool in this respect. Essentially, subsidies do not need to be a long-term strategy but can be an important tool for building the initial scale in the green bonds market.

- **A greater role for public development banks (PDBs):** Public development banks can play a catalytic role for the green bond market, but they have so far played a limited role in most EMDEs.¹⁷ Government backing and high credit rating of PDBs allow them to borrow at favourable rates from private investors. Thus, they are ideally placed to offer a highly attractive option for investors looking to buy green bonds and build momentum for the whole green bonds market. Their credibility can also be leveraged to alleviate risks associated with these instruments. This can be implemented through multiple channels. PDBs can act as anchor investors for issuances, building investor confidence in other issuing companies and expanding the possible pool of investors. They can also issue guarantees and provide first-loss guarantees for various green bond issuances. This will go a long way in reducing the risk perception and improving expected returns, thereby attracting newer investors, including larger institutional investors. PDBs also have substantial technical capabilities, which can be leveraged for preparing a broader framework for green bond issuances, providing technical assistance for the issuance of sovereign green bonds.
- **Easing regulations for international investment:** International investors often face steep regulatory and compliance challenges, which hinder their ability to invest in EMDEs. Furthermore, taxation structures in these economies often place a heavier burden on foreign international banks and financial institutions with the aim of developing a more robust domestic banking system. To attract a wider base of investors and receive more foreign capital, EMDEs

must focus on refining regulatory systems and taxes. In some cases, such moves may be difficult to implement politically, but there is a veritable scope for finding short-term workarounds. Reducing the need for international green investors to set up domestic accounts can be an example in this regard. This can be facilitated by issuing green bonds in local currencies that can be cleared in other currencies on foreign exchanges. Governments in EMDEs must find a way to strike a balance between the imperative to create domestic financing capabilities and the increasing need to access international capital for green investments.

Conclusion

It is clear that EMDEs will need to scale all forms of private capital to achieve their climate ambitions. Within this universe, green debts provide a unique instrument that can alleviate several risks associated with green investments. However, some of the challenges associated with underdeveloped markets, which green bonds aim to meet, restrict the growth of these instruments. Policymakers in these geographies must make concerted efforts to take full advantage of these instruments through targeted interventions, aimed at defining the role of debt in green transition, improving transparency, reducing regulatory burdens, and providing the right incentives for green bonds.

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The Role of Multilateral Development Banks in Climate Finance for Developing Countries

Esther Choi and Valerie Laxton

THE 2015 PARIS AGREEMENT aims to limit global average temperature increase to well below 2°C of pre-industrial levels, preferably to 1.5°C, as strongly reiterated at UNFCCC COP27 and by G20 in November 2022. Meeting its goals entails restructuring economies and societies, for example by investing in decarbonised and renewable energy sources, effectively adapting to the impacts of climate change, and facilitating a just transition that equitably distributes the costs and benefits of climate action. This requires mobilising, aligning, and deploying significant amounts of all types of financial resources—domestic, international, public, and private.

Multilateral development banks (MDBs) lie at the nexus between the public and private sectors and have goals that are intrinsically developmental—often referred to as ‘global public goods’. Their commitment to the current global climate goals is key. In recent years, part of the debate on delivery of these goals has moved from MDBs distributing or lending capital to mobilising it.¹ Yet, further action is required to mobilise the volumes of additional public and private capital needed to mitigate and adapt to climate change while delivering on development goals. Specifically, the work of MDBs on mobilising private investments, particularly in developing countries, faces challenges and mobilisation experiences to date have not resulted in acceleration. Some opportunities for leveraging private-sector investments alongside MDBs in support of the Paris goals could come from:



(i) using, replicating or scaling instruments that have proven successful; (ii) accelerating project pipelines; and (iii) spurring new partnerships. This will be elaborated upon in a latter section of this article.

Aligning Public and Private Financing with the Paris Goals

Public and private entities that finance projects in countries around the world need to align their frameworks and metrics to bring the Paris Goals within reach by 2030. Ultimately, aligning all financial flows to planetary boundaries has the potential to transform countries, regions, and sectors. With MDBs committing to aligning practices back in 2017,² counterpart public and private entities are going through similar processes, as are other development finance institutions. Achieving this in practice requires conducting internal and external consultations, defining institution-wide strategies, creating internal frameworks to design aligned operations from beginning to end of the operations cycles, and establishing results indicators to track progress and achievements.

Through their mandates and reach, MDBs channel billions of dollars' worth of financial support every year, covering all types of financing instruments and investments. For example, the 2021 Joint Report on MDBs' Climate Finance illustrated that their collective contributions to climate finance in low- and middle-income countries amounted to US\$50.7 billion that year. Over the last five years, the World Bank Group delivered over US\$83 billion in climate finance.³ Even though the level of ambition could be stepped up,⁴ the activities generated by these financial flows—through policy support or through investments—directly and indirectly, have significant implications in countries and for communities.

However, effective modalities offered by MDBs—such as syndication, public-private partnerships, guarantees, and risk transfers—have so far been underutilised, and have not resulted in a level of mobilisation of private investment that is commensurate with expectations. Indeed, MDBs have mobilised only 26 cents of private capital for every dollar of MDB investment in low- to middle-income countries in 2020, and 25 cents in 2021.⁵ This figure falls short of some estimates that every public dollar needs to mobilise nine private dollars to fill the climate investment gap.⁶

MDBs and Their Unique Positioning in the Financial Architecture

Despite this track record on private finance mobilisation, MDBs can play a significant role in bridging the investment gap and aligning financial flows, based on their comparative advantages. MDBs could play to their strengths by using: (i) the convening power to mobilise public and private stakeholders to create the needed synergies for maximum impact on climate and development outcomes; (ii) the ability to finance projects at rates that are lower than market rates, which enables using multiple types of financing instruments and structures; (iii) the scalability of interventions owing to peer learning and exchange of best practices across MDBs; and (iv) the capacity to intervene multiple times or in different sectors and adopt a ‘programmatic’ approach that has the potential to have long-term transformative impacts (economy-wide and sector-wide).

MDBs interact with public-sector counterparts and private stakeholders. Some banks, such as the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), are predominantly focused on government support; others, meanwhile, like the European Bank for Reconstruction and Development (EBRD) or International Finance Corporation (IFC), focus primarily on private entities. They can explore different routes depending on what their positioning is:

- i) MDBs whose activities are mostly public-sector based can contribute to building an ‘enabling environment,’ supporting governments and facilitating public sector and public finance management, which can have far-reaching implications for the capabilities of partner countries to align with the Paris goals.
- ii) MDBs whose financial support is primarily channeled through private sector activities can co-finance projects with the private sector directly or indirectly through their private-sector arms and incentivise climate-related investments alongside ensuring a just and equitable transition through project design, impact and results frameworks, and systematic monitoring of these projects.

Evaluating the ‘Success’ of Private Investment Mobilisation

Observers have analysed volumes of crowding-in of private investment as a measure of success. Using this yardstick, they have found that MDBs have yet to deliver the amounts hoped for. This is particularly the case in low-income countries, where MDBs and private-sector participants face various country- and market-specific challenges at different stages of the project cycles. For private-sector-focused MDBs in low-income countries, where the investment environment is perceived as riskier, the project preparation and deployment phases can end up being lengthy. Furthermore, MDB loans can sit on their balance sheets for many years until repayment, limiting their lending capacity. As a result, lending or project financing by MDBs has been perceived as ‘conservative’. What can then alleviate the challenges faced by MDBs when the goal is private-sector mobilisation in developing economies?

The July 2022 report to the G20 on MDBs’ Capital Adequacy Frameworks adds relevant insights.⁷ Increasing lending headroom to increase impact is identified as an aspect that shareholders could tackle steadfastly to free up MDBs’ lending capacity to support climate mitigation, adaptation, and the just energy transition. Some of the recommendations stand out as potential avenues to attract and combine private and philanthropic capital that align with climate and development objectives. The report also suggests, for example, how the Multilateral Investment Guarantee Agency (MIGA) could take on the risk of a portfolio of climate-related lending in middle-income countries.

More generally, if the priority is climate and development, and it is the recommended strategic angle that shareholders require MDBs to pursue, financial decisions should be guided by these strategic objectives. The report recommends that the definition of ‘risk’ be amended accordingly. Private investors routinely undertake operations and innovate in ways that entail some degree of risk. Public-sector and private-sector experiences and capabilities in risk management can be combined to propose smart instruments as solutions for the climate, nature, and people. This represents a distinct opportunity.

Leveraging Private-Sector Investments Alongside MDBs

Approaches to mobilising the private sector have been tested by several MDBs. The urgency to align financial flows with the Paris climate goals, development goals, and the just transition imperative, brings with it opportunities to scale instruments and practices by MDBs that deploy such investments in complex environments.

- i) MDBs can deploy effective financial tools and structures to mobilise private investment so that additional capital and market-building capacity can be deployed for climate projects

For example, securitisation of MDB assets can attract private investment into operating assets at scale. It can help MDBs free up balance sheet space to invest in new assets in sectors and stages where private investment is not yet forthcoming. The African Development Bank's (AfDB's) Room2Run shows how an MDB can act as an originator of loans and share credit risk with private investors while focusing on climate and development outcomes. The first-ever synthetic securitisation of an MDB's portfolio of private-sector loans,⁸ Room2Run has securitised US\$1 billion of existing non-sovereign loans and shifted mezzanine credit risk to private investors. It is expected to free up US\$650 million in capital for additional lending without requiring further capital from shareholders. AfDB intends to use this additional headroom primarily for loans to the renewable energy sector.

MDB guarantees can also mobilise a significant amount of private climate finance, with some estimates of public guarantees offering a fifteen times multiplier effect⁹ because they can cover and backstop payment obligations and other risks. The Asian Development Bank's (ADB's) Pacific Renewable Energy Program (PREP) addresses both short-term liquidity risk via a donor-backed letter of credit guarantee to cover the off-take obligations of power utilities and long-term liquidity risk via a partial risk guarantee to address political risks and termination payment.

The Africa Co-Guarantee Platform (CGP) is another example of meeting guarantee and credit enhancement requirements for Africa's infrastructure investments. Absent risk mitigation products, such investments would not take place.

ii) MDBs can accelerate project pipelines

Building a strong pipeline of projects can help attract capital and trigger a transformative impact in countries and sectors. So far, MDBs have placed emphasis on technical assistance for project origination and transaction advisory support, in addition to project financing itself. This ‘upstream’ engagement can be an important part of the dialogue with partner countries. For example, PREP’s technical assistance offers streamlined processes to reduce the high transaction costs associated with small transaction sizes in the Pacific, and assists with capacity building in environmental and social safeguards that can, in turn, support the governments with receiving and implementing other climate funding sources.

For PREP, the ADB’s Private Sector Operations Department (PSOD) and the Pacific Department (PARD) work together to identify pipeline transactions, with PSOD responsible for processing guarantees and project financing and PARD leveraging its relationship with the Pacific power utilities. This also illustrates the need to bring down siloes within institutions to support pipeline development.

iii) MDBs can initiate and replicate partnerships to create synergies

MDBs provide climate finance and implement projects, but they also act as convenors. By coordinating and facilitating partnerships among different partners who would otherwise not connect, MDBs create a space that seeks complementarities and synergies. The CGP is an example of several entities coming together in a coordinated manner. AfDB hosts CGP, with African Exim-Import Bank, African Trade Insurance Agency (ATI), GuarantCo, the Islamic Corporation for the Insurance of Investment and Export Credit (ICEIC), and the African Union’s Development Agency (AUDA-NEPAD) as members. The platform combines institutions with different risk mitigation products to work on specific projects in Africa to mobilise investment in certain sectors.

MDB partnership can take multiple shapes. By partnering with philanthropies and impact investors, MDBs can tap into sectors and stages of project financing that are not as accessible. Given their mission-oriented nature, philanthropies can bring in a different set of priorities. For example, the Inter-American Development Bank (IDB)

has announced a partnership with the Rockefeller Foundation that will create a financing instrument dedicated to expanding energy access, supporting energy transition, and protecting the climate in Latin America and the Caribbean. A series of partnerships between IFC and Amundi (Build Back Better Emerging Market Sustainable Transaction strategy, Amundi Planet Emerging Green One Fund), Europe's largest asset manager, is another example of forming a partnership to mobilise capital and could provide perspective for other asset managers and institutional investors.

Key Conditions for Replication

Some forms of risk sharing, transfers of risk, and risk pooling are embedded in the examples highlighted in the previous section. Provided these approaches prove successful, scaling them requires going beyond 'mitigating' risks, and ensuring that the upside scenarios can materialise in a majority of cases. Though these examples are context-specific, some of the conditions for replicating or scaling could be the following:

First, developing a coherent institutional approach to de-risking, taking advantage of each department's or institution's strengths. For example, in the RenovAr program, Argentina's first energy auction program to catalyse private investments for its renewable energy sector, IFC has worked on improving the design from the private investors' perspective, while the World Bank has worked on a guarantee program to support the financing. This came about by avoiding the silos within the MDB and working in close partnership with the government.

Second, deploying programmatic and holistic approaches for a transformative impact, instead of incremental changes from a project-by-project approach. For example, PREP focuses on addressing the entire lifecycle of energy (from generation to transmission to end-use) in partner countries instead of developing a single asset. This has helped save on setup costs, which can be leveraged by more market participants and for larger financing volumes, unlocking access to investors who felt more comfortable at this ticket size, and has helped incorporate lessons learnt from individual project experience into one broader approach.

Third, creating a space to design and implement financial innovation to test new approaches and use traditional instruments in a new context.

Securitisation, for example, had become increasingly common in financial markets since the 2008 global financial crisis but had not been attempted by an MDB. ADB's Room2Run marks a break from this as a direct response to the G20 action plan.

Fourth, the task of joining forces to align with the Paris goals and the goals of the 2030 Agenda needs to be encapsulated in consistent frameworks for reporting and monitoring results. This will simplify the landscape and help ensure that mobilisation efforts deliver coherent outcomes and stimulate further participation of private sector in these endeavours.

Finally, engaging shareholders to impress the role of MDBs in financing climate and development, and ensuring a just transition towards these global goals is key. MDBs and the private sector could agree to communicate about the direction that co-investments take, such that they clearly signal alignment with shared climate and development priorities. Shareholders could communicate these priorities in the context of multilateral engagement, notably at G20 gatherings, where the Troika (India, Indonesia, Brazil) could help clarify the role of MDBs in delivering cohesively on these policy priorities in the coming years.

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Multilateralism and Climate Finance: Towards a Greater Role for the G20

Shruti Jain

THE PRINCIPLE OF 'Common but Differentiated Responsibilities', enshrined in the UNFCCC, underlines the need to address existing disparities in resources available to countries for climate action. In this regard, the 2009 Copenhagen climate negotiation was a turning point in climate diplomacy. It was there where the developed nations committed to a goal of jointly mobilising US\$ 100 billion by 2020 to address the needs of the developing countries.¹

Yet, that year, the developed countries fell short: they mobilised total climate finance of only US\$ 83.3 billion, and of this, the contribution of private climate finance was grossly inadequate at US\$ 13.1 billion. While the precise size of mitigation and adaptation needs is not known, the climate finance requirements are likely to increase as developing countries begin to transition towards a low-carbon economy. To achieve adaptation goals and the Paris Agreement's temperature targets, the required global investments are estimated to range between US\$3 to US\$6 trillion annually until 2050.²

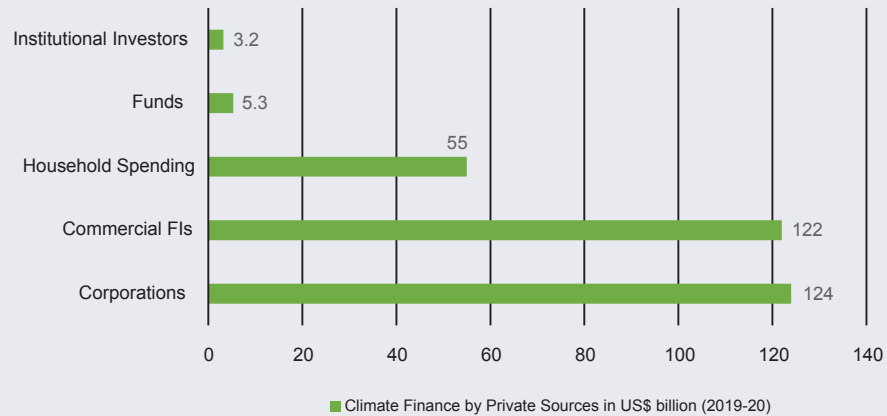
Sectoral Trends in Private Climate Finance

1) Source Split: According to the *Climate Policy Initiative 2021* report, private climate investments provided 49 percent of the total climate finance (US\$ 310 billion) in 2019-20. Of the private climate investments, corporations accounted for the largest share (40 percent), followed by commercial financial institutions (39 percent), household spending (8.70 percent), and direct climate finance



from funds (0.8 percent) and institutional investors (0.5 percent). Corporations allocated their largest share of finance into renewable energy projects, followed by low-carbon transport. For commercial financial institutions, the largest share of finance went towards energy systems. Moreover, household spending mainly included battery electric vehicles (BEV), followed by small-scale solar panels and solar water heaters.

Figure 1: Climate Finance by Private Sources in US\$ billion (2019-20)



Source: Climate Policy Initiative 2021

However, it is critical to note that while climate finance by private sources has increased over the years, the average annual lending of private institutions towards fossil fuels remained steep. According to data from the Rainforest Action Network (RAN), financing of fossil fuels by the world's 60 largest banks has reached US\$ 4.6 trillion since the adoption of the Paris Agreement.⁴ Of these banks, 55 were from G20 countries—of which, 78 percent belonged to developed countries.⁵

2) Thematic Split: Historically, **mitigation** finance has accounted for a larger share of climate finance as compared to adaptation finance.⁶ While there is a persistent gap between adaptation and mitigation finance, it has been steadily narrowing since 2016. In 2020, mitigation finance was 1.69 times adaptation finance, as compared to 2016, when mitigation finance was 4.1 times adaptation finance.⁷

a) Mitigation finance: The two focus areas for mitigation finance are energy and transport.⁸ While mitigation finance was primarily financed through private capital, the majority of the renewable energy investments were made in developed countries, and

the emerging economies remained mainly underrepresented. Regions such as Latin America and the Caribbean, South Asia, and Sub-Saharan Africa—home to 90 developing and emerging economies—attracted less than 11 percent of the total investments in renewable energy.⁹ In the transport segment, private actors have played a key role in BEV finance. However, investment in low-carbon rail and public transport was led by public investors at 69 percent.¹⁰ Furthermore, the infrastructure development for EV charging remains slow—the European countries failed to meet the recommended electric vehicle supply equipment (EVSE) per EV targets of 2020.¹¹

- b) **Adaptation finance:** The *UNEP Adaptation Gap Report 2021* suggests that annual adaptation costs in developing countries could reach somewhere between US\$ 155 to US\$ 330 billion by 2030.¹² There is a persistent gap in adaptation finance, especially in the developing economies—financing needs for 58 developing countries approximately range around US\$ 70 billion per year from 2020 to 2030.¹³ Indeed, the number could be still higher given how the economic impacts of climate change are higher than reported in published studies. The highest reported needs were in agriculture, followed by infrastructure, water, and disaster risk resilience.¹⁴ Most of the adaptation finance has been funded by public actors—with multilateral DFIs accounting for the largest share.¹⁵ Only about 5 percent of the total adaptation finance was funded by private actors, which included corporations and institutional investors. UNEP AGR 2021 has noted that for many countries, adaptation and mitigation finance was exceedingly being funded by domestic public finance as compared to international sources. For instance, an August, 2022 analysis of India’s adaptation funding found that 94 percent of it was done by domestic public finance (Central and State government budgets).¹⁶

3) Geographical Split: The climate finance flows are skewed towards certain geographical regions. The majority of the flows are concentrated in East Asia and Pacific, Western Europe, and the United States and Canada.¹⁷ Consequently, climate finance in regions with developing countries was funded primarily by public finance; in developed countries, mostly by private. The percentage

of private finance to total climate finance was highest in the US and Canada, and lowest in Sub-Saharan Africa. Moreover, three-fourths of the total climate finance is being deployed in the country from where it is sourced¹⁸—this reveals a strong risk aversion for international investments.

Table 1: Private and Public Climate Finance, by Region (in US\$ billion, 2019/2020 annual average)

Region	Public Climate Finance	Private Climate Finance	Private finance (% of total climate finance)
US & Canada	4	79	95.18
Western Europe	43	62	59.05
Eastern Europe & Central Asia	20	13	39.39
Other Oceania	1	8	88.89
Latin America and the Caribbean	18	17	48.57
Sub-Saharan Africa	17	2	10.53
The Middle East & North Africa	9	7	43.75
South Asia	19	11	36.67

Source: Climate Policy Initiative 2021

Challenges in Mobilising Private Climate Finance

There is sufficient empirical evidence to suggest that there is a need to scale up private sector engagement to close the climate finance gap, especially in the Global South. However, there are significant barriers that impede the mobilisation of private climate finance:

- a) **Lack of investable projects:** Private actors find it difficult to identify investments in emerging and developing economies that are liquid and safe.¹⁹ Limited investment-grade EMDEs not only make it difficult for investors to build diversified bond portfolios, but also leave many EMDEs without the required private sector climate financing.
- b) **High costs of mitigation and adaptation investments:** Private investment is concentrated in a few sectors such as renewable energy because of the higher commercial viability and competitiveness of renewable technologies—which makes them attractive investment opportunities, with or without public support.²⁰

The lack of commercial viability and high upfront costs for most other sectors makes the investments unattractive for private actors. The investment costs in EMDEs are also exacerbated due to their climate-sensitive creditworthiness.²¹

- c) Unattractive risk-return profiles:** In developing countries, private financiers face a different set of risks that discourage them from investing in mitigation and adaptation-related projects.²² Usually, there are high political and regulatory risks associated with EMDEs—this includes irregular policies or regulations that can adversely impact infrastructure-related investments. The risks related to the macroeconomic environment in EMDEs resurfaced during the pandemic. Among others, macroeconomic risks involve high debt vulnerabilities, as well as currency and liquidity risks. Moreover, technical risks such as the lack of skills of operators and managers add to the constraints of private actors' investment in climate-resilient projects.
- d) Gaps in adaptation finance:** In terms of adaptation finance, monitoring and evaluation mechanisms continue to be missing and are present in only one-quarter of countries.²³ UNEP's AGR 2021 suggests that more focus is given to outputs in place of outcomes. Moreover, the investors have limited capacity to integrate the value of adaptation outcomes and to price climate risks for project assessments or return calculations—making it even more difficult for the private actors to invest in adaptation-related projects.²⁴
- e) Information asymmetry:** Another crucial constraint for the private sector engagement in climate finance is the lack of common taxonomies and data disclosure standards, large data gaps, and inadequate classification for sustainable investment.²⁵ Data unavailability also prevents the determination of domestic financing gaps and a granular understanding of climate finance requirements. In terms of adaptation finance, there is a lack of clarity in understanding the contribution of national adaptation plans and strategies to actual climate risk reduction. Moreover, Small Island Developing States (SIDS) typically face limitations related to insufficient data to prove their climate vulnerability for adaptation projects.²⁶ The reason for the lack of available data in SIDS includes the disproportionately high costs of feasibility assessments and limited human resources to analyse and interpret the data.

G20's Role in Mobilising Private Climate Finance

Over the years, the G20 leaders have sought ways to leverage private climate finance flows with public funds at the international and national levels. In 2012, the G20 Finance Ministers set up the Climate Finance Study Group under Mexico's G20 presidency with a view to "consider ways to effectively mobilize resources taking into account the objectives, provisions and principles of the UNFCCC."²⁷ In the past, the CFSG worked to identify institutional and market barriers to green finance. The study group worked on identifying ways to improve the effectiveness of selected policy options for private sector engagement such as green bonds and risk-sharing tools (e.g., subordinated debt, guarantees, mezzanine finance and lines of credit, and local currency financing).²⁸

Consequently, G20's Financial Stability Board set up the Task Force on Climate-related Financial Disclosures as an advisory body to address the concerns around inadequate climate-related risk and opportunities disclosures. The Task Force released its first set of recommendations in 2017. In 2021, the Italian presidency elevated the SFSG to the Sustainable Finance Working Group and established the first G20 Sustainable Finance Roadmap, which focussed on the growing role of private sectors in accelerating sustainable recovery.²⁹ Following COP26 in 2021, the International Financial Reporting Standards Foundation announced the formation of the International Sustainability Standards Board (ISSB) to develop a global baseline of high-quality sustainability disclosure standards to meet the investors' information needs.³⁰ Under the Italian G20 presidency, the G20 initiated the G20 Framework for voluntary support to Integrated National Financing Frameworks (INFFs).³¹ The INFFs essentially aim at strengthening countries' planning and strategy processes to finance SDGs at the country level.

Under the Indonesian presidency in 2022, the focus was around strengthening public-private cooperation in scaling up sustainable finance, particularly for SMEs within EMDEs.³² The G20 finance ministers and central bank governors have also highlighted the role of policy levers in incentivising the participation of private capital in sustainable investment and ensuring just transition. The discussion of the SGWG^a has focused on non-pricing tools that support low-carbon

a US and China were the co-chairs of the SFWG under the Indonesian presidency.

climate transition such as fiscal subsidies for green projects, sectoral policies and regulations that encourage the use of electric vehicles, green infrastructure and renewable energies or decommission existing coal-fired plants.³³ The SFWG has also suggested setting up a high-level transition finance framework that could work towards identifying transition activities, identifying reporting practices related to transition plans, developing transition-relevant financial instruments, and developing voluntary policy options to incentivise investment to support the transition.³⁴

Achieving the Paris Agreement obligations and enhancing private sector engagement in climate finance will not be possible without the lead of G20 members in the coming years. With the consecutive presidency of three developing countries—the G20 has an opportunity to combine strong climate action with inclusive agenda building.

- 1. Address information asymmetry for adaptation finance:** Given the wide knowledge and data gaps that exist, especially under adaptation projects, G20's SFWG can play a crucial role in enabling data availability and technical knowledge to help investors make informed decisions about investment selection and portfolio management. Despite the availability of certain data on the financing requirements, there is no substantive database for EMDE's individual adaptation goals, strategies, regulations, planning and outcomes. The SFWG can consider setting up an Adaption Finance Task Force that can help EMDEs establish institutional and legal frameworks to monitor their progress towards adaptation action plans and set clear adaptation targets. The SFWG can provide common and interoperable metrics framework to integrate the value of adaptation outcomes into project assessments and calculations for returns. Furthermore, it can provide common definitions for what qualifies as adaptation finance.
- 2. Address risks associated with climate finance:** Despite the formation of the TCFD and other disclosure mechanisms, adoption of recommendations continues to be slow.³⁵ According to the Climate Disclosure Standards Board (CDSB), several challenges lie ahead in TCFD adoption, especially those related to scenario analysis.³⁶ The Task Force on Climate-related Financial Disclosure must aim toward developing capacity building in developing countries by providing

further guidance and standards that will support disclosures. The Task Force could guide EMDEs to translate TCFD recommendations into implementable policy frameworks by providing technical assistance for INFFs. Furthermore, the G20 can enable EMDEs' central banks in developing forward-looking tools such as scenario analysis and stress testing.

3. Identify financing tools and policies to incentivise private actors:

To attract private sector climate finance, the SFWG can enable the deployment of innovative financial instruments, including blended finance, in EMDEs. In the case of blended finance, public sector resources can cushion the risks in EMDEs and encourage private sector climate investment. The G20 must aim toward building a framework that ensures that blended finance can be tailored to support EMDEs' local needs, capacities and priorities as well as lead to local market development. Moreover, it can ensure that transparency regarding blended finance is maintained and remains accessible to different stakeholders.

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G20 and Sustainable Climate Finance: Experiences from the Indonesian Presidency

Tiza Mafira

OPPORTUNITIES TO MOBILISE more climate finance is a key theme of discussion in the latest G20 meetings, which culminated in the Summit hosted by Indonesia in November 2022. The urgency of responding to the climate crisis was already acknowledged at the previous Rome Summit with the launch of G20 Sustainable Finance Roadmap.¹ While this roadmap remains “flexible and voluntary in nature”,² it has paved the way for the formation of the G20 Sustainable Finance Working Group (SFWG), tasked to discuss the following priority themes in 2022³:

- Developing a transition finance framework
- Improving the credibility of financial institutions’ commitments
- Scaling up sustainable finance instruments with a focus on accessibility and affordability
- Discussing policy levers that incentivize financing and investment that support the transition

Reflecting on recent SFWG discussions for each priority theme, this essay examines key opportunities that Indonesia’s G20 presidency has presented to push for a more united global front in mobilising just and sustainable climate finance.

Significance of the G20

Formed in 1999 to achieve international financial stability in the wake of global economic recession caused by the 1997-1999 financial crisis, the G20 now finds itself at the culmination of not one but many crises



impacting global financial stability. The world is just emerging from a long pandemic, is witnessing a war in Ukraine and experiencing raging extreme weather in countries in the Global North and South. The climate crisis is a central policy discussion in all these catastrophes, with growing demands for a post-pandemic green economic recovery, a transition to clean energy while weaning away from the dependence on fossil fuel imported from Russia, and urgent action to mitigate or adapt to worsening extreme droughts, floods, and shortages of basic needs.

What can the G20 do in the face of such a challenging and systemic crisis? As past achievements will attest, quite a lot. After the 2008 financial crash, G20 leaders called for prudential and financial supervision rules to be strengthened.⁴ This led to an outline of new international financial regulations, many of which materialised over the next few years. These included stronger capital requirements for banks (adopted in 2010 in Basel III regulations), strengthening supervision of the financial sector (which led to the formation of the global Financial Stability Board), and stronger efforts to combat tax havens. Other policies included controls on remuneration, which Europe acted upon by enacting a ceiling on traders' bonuses. The G20 is viewed as having successfully restored stability after 2008 and preventing a 2010 Euro crisis from becoming a global crisis.⁵ It is also apparent that G20 outcomes do not only result in voluntary norms but can also lead to mandatory financial regulations.

Indonesia Presidency and Opportunities for More Sustainable Climate Finance

Each of the priority themes under the SFWG have provided at least two advantages for Indonesia: first, to benchmark the country's financial sector progress against progress being made at the global level, bearing in mind that finance, like trade, operates on a global scale enabled by global standards; and second, to show leadership and broker breakthroughs to move the global financial architecture towards meaningful climate action.

- **Transition Finance**

Transition refers to having a deliberate and orderly shift from a high-emissions economy to a low-emissions one. A key discussion around transition is how to define and differentiate between activities

that are green and those in transition. The G20 SFWG discusses methods of identifying green activities that are being developed around the world, and how to ensure they can help drive investment towards those activities. The most common methods are principle- and taxonomy-based approaches. A common set of principles, or taxonomies, are important to help financial institutions and project owners identify relevant investments that support the transition. There needs to be consistency and comparability between different approaches to facilitate the large-scale flow of capital to support climate transition.

As Indonesia's Financial Services Authority has released the first version of a Green Taxonomy⁶ in January 2022, this discussion is timely. Indonesia could provide insight into how national taxonomies may respond to global or regional taxonomies currently being developed and vice versa. The EU Taxonomy⁷ takes a principles-based approach, and the ASEAN Taxonomy⁸ takes the traffic-light based approach of categorising activities as red-amber-green. The EU Taxonomy is designed to improve transparency and disclosures among government actors and financial market participants across the entire economy, and is therefore more readily adaptable in all member states and aligned with other taxonomies. Meanwhile, the ASEAN Taxonomy is structured into two tiers—Foundation Framework (sector-agnostic and interoperable across all member states) and Plus Standards (comprising metrics and thresholds for certain targeted sectors)—to facilitate an early adoption among member states while laying out a longer-term vision and aiding an orderly transition to more rigorous standards.

Indonesia's Green Taxonomy adopts the Foundation Framework as it classifies and colour-codes activities as green-yellow-red based on their contribution to climate change mitigation. However, the extent to which its taxonomy is interoperable with other taxonomies, including but not limited to the ASEAN taxonomy, could use more definition. For example, Indonesia should develop clear metrics and thresholds for the yellow category and targeted sectors with more detailed transition measures to operate under ASEAN's Plus Standards.

Comparability and consistency between different taxonomies are crucial to enable green investment. Following Indonesia's G20 presidency, both the urgency and opportunities remain for the next leadership to engage governments and investors, involve private sector to provide early responses, regularly evaluate whether all existing initiatives are enough and well aligned to move the needle, and identify ways to further harmonise and improve them.

Another discussion is how to ensure that the transition mitigates negative social and economic impacts, or how it can be a just transition. In a private sector roundtable discussion convened by the SFWG in April 2022, participants viewed the topic of a just transition as not yet adequately addressed in the existing transition finance frameworks and private sector green portfolios. The G20 could fill a gap in designing a widely agreed upon just transition framework, with key standards and impact measurement criteria that are applicable across multiple jurisdictions and helpful to financial sector decision-makers.

- **Improving the credibility of financial institutions' net-zero commitments**

Several sustainable finance pledges have surfaced over the years, but 2021 saw a spike in the number of financial institutions making net-zero commitments. These include private sector coalitions combined under the Glasgow Financial Alliance for Net Zero (GFANZ), which consists of the Net Zero Asset Owners Alliance, the Net Zero Asset Managers Initiative, the Net Zero Banking Alliance, the Net Zero Insurance Alliance, the Net Zero Investment Consultants Initiative, and the Net Zero Financial Service Providers Alliance.⁹

As of April 2022, the GFANZ “represents over 450 major financial institutions from across 45 countries, controlling assets of over \$130 trillion”.¹⁰ However, these commitments remain dominated by financial institutions in the Global North. Through 2021, 89 percent of net-zero targets were set by institutions in the UK, US, European Union, or other Organisation for Economic Co-operation and Development (OECD) countries. Only a handful of financial institutions from developing economies made net-zero targets. This trend has persisted throughout 2022—88 percent of the 76 net zero

pledges came from OECD countries.¹¹ Financial institutions in the developing world, including Indonesia, could do more to commit to net zero and there are signs of rising interest. In Indonesia, an industry-led push to increase corporate net-zero commitments has been recently launched, led by the Indonesia Chamber of Commerce's Net Zero Hub.¹²

While improving the global spread of net-zero commitments is important, it is equally important to ensure these pledges have credibility. Analysis shows that commitments vary in scope and often have wide loopholes. For example, mitigation targets have focused on reaching net zero by 2050, but only 12 institutions have made further interim emissions targets.¹³ Pledges to invest more in climate solutions have yielded little detail on the sectoral and geographical focus of those investments. Some fossil fuel exclusion pledges allow for continued investment in companies with up to 40 percent of revenues derived from coal, or restricting fossil fuel exclusion to certain portions of an institution's business, such as project finance as opposed to general corporate lending.¹⁴

G20 governments should articulate systematic support for these flawed but important voluntary commitments, moving beyond net-zero policy signals and into the realm of enabling transparency, accountability, and measuring overall quality of commitments. Pushing for the establishment of near-term interim emissions targets, for example, could be a practical and impactful agenda for the grouping. Strong government support could pave the way for mandatory transition plans and mandatory disclosure of net-zero progress in the near future.

- **Enhancing the accessibility and affordability of sustainable finance**

Sustainable finance is riddled with barriers preventing it from scaling and becoming widely accessible. There is still a lack of awareness and expertise, a perceived risk in providing finance to climate projects, and a high cost of sustainable finance when compared to vanilla financial products. At the G20 Sustainable Finance Working Group, several options to overcome these persistent barriers are being discussed, including to scale up blended finance and

derisking facilities, introduce policy incentives, and deploy digital technologies (fintech) to keep transaction costs low.

As a country that has set significant climate targets but struggles to mobilise sufficient financing to meet those targets, these discussions are particularly important for Indonesia. Climate finance flows in Indonesia continue to be dominated by financing from the public sector, mostly from the state budget.¹⁵ This is in contrast with India¹⁶ and South Africa,¹⁷ where climate financing comes mostly from the private sector. Current private sector investment in climate action constitutes only 9 percent (or US\$21.3 billion between 2015 and 2019) of the total investment needs of US\$250 billion in achieving Indonesia's 2030 climate goals.

Following its G20 presidency, Indonesia should continue to promote and throw its full weight behind global, systems-wide solutions to these barriers. From the finance supply side, more can be done by public institutions to take on first tranches and first losses, the riskier aspects of climate projects. Multilateral development banks (MDBs) are being criticised for holding back on taking on riskier projects to avoid lowering their overall credit rating, leading to calls for MDBs to step up more on climate finance.¹⁸ From the demand side,¹⁹ project pipeline development remains a problem, making it worthwhile to urge more support for increased investment planning capacity, more engagement with local banks, local small and medium enterprises, and local jurisdictions to build bankable pipelines.

- **Discussing policy levers that incentivise financing and investment that support the transition**

Well-crafted public policies can shift markets, and can range from fiscal spending, subsidies, monetary policies, financial regulations, carbon pricing, and carbon markets, among others. The G20 is working to understand the implications of a range of policy levers and their ability to incentivise sustainable investment.

This discussion proves timely for Indonesia, which launched a carbon pricing regulation at COP26 in Glasgow in 2021 and is preparing to launch a limited implementation of a carbon cap and tax scheme on coal plants.²⁰ In addition, the Indonesian finance ministry,

central bank, and Financial Services Authority have each issued policies to support and encourage sustainable finance mobilisation, ranging from fiscal incentives, green loan-to-capital ratios, green taxonomies, and disclosure requirements, among others, while working towards policies embedding climate considerations within financial governance, such as through climate risk assessments and ESG integration. Whether these policies will be effective in mobilising sustainable finance depends on the design and impact measurement.

What is clear is that Indonesia has ample experience and insight in enacting policy levers that make sense for a developing country context. This can be a valuable contribution to push for global goals with differentiation. For example, the IMF recommends a global carbon price starting from US\$25 per ton for low-income countries, US\$ 50 per ton for middle-income countries, and US\$75 per ton for high-income countries.²¹ The IMF has emphasised the importance of global cooperation on carbon prices to hasten the transition to a green economy without compromising a country's competitiveness.²² Meanwhile, Indonesia's planned carbon tax will start at US\$2.1 per ton.²³ While far behind the recommended price, the approach and phased roadmap behind setting a starting carbon price in a developing country is informative and can leverage a push for the G20 to collectively put its weight behind common carbon pricing parameters that work across several jurisdictions.

The four technical themes that will continue to be discussed at the G20 SFWG should be treated as an opportunity to create lasting changes in the global financial system and respond to the most challenging crisis humankind has ever faced—a planetary climate crisis. As the SFWG continues to develop and refine a multiyear Sustainable Finance Roadmap,²⁴ it is fair to say that much is expected of the next G20 Summit to be hosted by India. History has shown how strategically placed the G20 is in pushing for financial architecture reform. At the very least, there remains a critical opportunity to foster leadership in tackling the problems causing climate finance gaps and mobilising just, affordable, and sustainable climate finance around the world.

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Conclusion: Putting Private Capital at the Centre of Climate Action

Mihir Sharma

Climate action that does not centre the role of private capital will fail. There is a simple reason why this is the case: The green transition is, in fact, a green *transformation*.

Greener growth—and, in the case of India and its peers, green development—requires an unprecedented transformation of every aspect of the economy. Multiple crucial sectors, from agriculture and construction to energy and manufacturing, would need to change their processes and priorities for a green transformation to take hold and be sustainable.

Such an economy-wide transformation is not possible without the active participation of the private sector. Even in countries with a large public sector, such as India, private-sector participation remains essential.

Can the private sector be goaded into action purely by regulatory constraints or government subsidies? While it is a difficult task anywhere, it is even more formidable in the countries of the global south where state and regulatory capacity is limited. The most efficient and impactful lever we have to alter the behaviour of private players is finance. It is through enlisting and re-incentivising private finance that the limits of state capacity and resources can be transcended.

This is the framework within which the essays in this volume ought to be understood: the use of finance as a lever to induce change in the private sector, and thus, the overall trajectory of the economy.



Pricing is the most fundamental tool of the market economy and modern finance. Ensuring that market mechanisms work smoothly to enable an economy-wide green transformation would require us to use the pricing mechanism and put a price on carbon. Without carbon pricing, the subject of the first two essays in this compendium, financial action will be limited, if at all it can attempt to function. Countries without active pricing systems—such as the United States—will be less effective at both climate action and economic growth than those that have chosen to directly incorporate the costs of carbon into their pricing framework. Frameworks such as the Inflation Reduction Act that seek to induce climate action from the private sector without an active carbon pricing component are inefficient, and therefore, far more expensive than is required. They are also less adaptable and reactive to shifts in technology; they tie up administrative and financial resources that could prove to be more effective if used elsewhere; they limit the flow of finance to locations that would provide the most carbon mitigated per dollar; and they distort supply chains. In a world with proper carbon pricing, the task of identifying innovations to enable low-carbon growth pathways would be effectively undertaken by private finance.

However, pricing is not the only tool to shift the incentives facing private capital. ESG finance, the subject of the fourth essay in this compendium, has emerged in response to a change in shareholder preferences. There are inherent limitations, of course, to the ESG alternative. Profits and earnings are a clear, single metric—and one on which all investors and shareholders can agree. What constitutes a proper investment in terms of environmental, social and governance factors is a question, however, that would elicit multiple different answers from shareholders. It should not surprise us, therefore, when ESG “scores” for a single company from different sources are not comparable. A careful distinction must be drawn between such natural variation and deliberate “greenwashing”—two phenomena which sceptics too often tend to conflate.

Shifting the incentives facing private capital, however, is not sufficient to enable it to finance a green transformation in the global north. Equally necessary is ensuring that the task of financial globalisation is extended to green and sustainable finance. Tech startups, for example, can assume they face a nearly borderless world when it comes to raising funding from the global markets; this is not the case with those in the public or private sector on the frontlines of climate action in the emerging world.

We are thus required to evaluate the quality of the channels through which properly incentivised private capital can flow from north to south. The third essay in this volume identifies the institutions that need to be built to ensure these channels work properly. It calls for a “network of institutions” that could facilitate fundraising from a multitude of entities, including patient private capital, and connect those to domestic market participants. It is a market intermediation task that requires those skilled in international finance.

A well-regulated and transparent market for emerging-economy green bonds could also widen this north-south channel, as explained by the fifth essay. This could particularly enhance the financing available for longer-gestation projects in the green infrastructure sector. Supporting the development of such an emerging-economy green bonds market would, however, require regulators to create clear guidelines that could be easily implemented and monitored, as well as institutional reform.

The institutions best placed to repair the north-south channel are, however, failing in their task. Calls for reform of the multilateral development banks are, in particular, reaching a crescendo. The sixth essay in this compendium describes how these banks can be made fit-for-purpose in an era when green growth is the priority of their target countries.

Thus, as the previous essays explain, there are two additional mechanisms by which the incentives facing global private capital can be shifted: regulatory and institutional. The most likely location where such changes to the global regulatory and institutional environment could be discussed, agreed upon, and implemented is the G20 grouping. The last two essays in the volume are presented from the perspectives of the previous and current presidencies of the G20.

The simplest argument for incorporating private capital into climate action is one of scale: “billions to trillions” has become a mantra in this space. But scale measured in dollars misses the human importance of financial rewiring. A shift in the incentives of private capital through pricing, shareholder activism, regulation and institutional support creates much-needed intermediation capacity. The problem is not just the availability of finance, but the lack of suitable avenues for it to be deployed, and of actual people to deploy and monitor its activity. The

act of centring private capital in climate action would also dramatically increase the pool of human resources available to the climate battle. This might in itself be the most important thing we could do over the next decade to make sustainable green growth a reality.

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