



# The Role of the Private Sector to Scale Up Climate Finance in India

Executive Summary

**giz** Deutsche Gesellschaft  
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On behalf of:



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## Project

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# Executive Summary

## Context

India has taken substantial steps to achieve its development objectives while addressing the threats posed by climate change. The Government has introduced National and State Action Plans on Climate Change, set up new institutions such as IREDA to scale up financing and established the Solar Energy Corporation of India (SECI) to facilitate implementation of national strategies. However, reports from the Ministry of Finance and the Low Carbon Expert Group have found that India faces a multi-billion dollar funding gap to implement its climate plans. The reports acknowledge that the bulk of the investments required to implement India's climate plans would come from the private sector.

In this context the public sector has a key role to play by providing the right signals and incentives to drive private investments. Typical barriers, such as high risk perception, lack of upfront

capital and high transaction costs, deter private sector investments. It is important to consider how available public finance can be used to develop "investment-grade" low carbon policy and regulatory frameworks to leverage private funds. In India, this will be crucial to work towards a successful implementation of mitigation schemes and in particular NAMA concepts to achieve transformational change.

In addition to the signals from a targeted low carbon and resilient policy framework, private sector investment decisions are influenced by broader macroeconomic policies, such as electricity market structure, fuel subsidies, central bank guidelines and international financial regulations (e.g. Basel III). Currently, there are conflicting signals from these broader macro-economic policies potentially driving institutional investors towards lower risk investments in tried and tested fields like fossil fuel production.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH contracted Ricardo-AEA and IIEC to review existing private climate finance flows in India and analyse the current challenges and opportunities for the private sector to scale up investment. A key part of the study was to develop a framework to define and measure private climate finance. A number of project developers, financiers, donors and government officials were consulted to obtain relevant information and discuss the findings.

### **The key findings of the report are as follows:**

- Tracking private climate finance flows is very complex, mainly due to definitional issues for public and private climate finance, data confidentiality issues and lack of common

approach (or incentive) to track climate friendly investments. Most forms of private finance in India have been leveraged by international and national public finance.

- Around USD 34 billion has been invested in India to mobilise private climate finance, predominantly in renewable energy, energy efficiency and transport.

- Since 1991, Multilateral Development Banks (MDBs) and bilateral finance institutions (BFIs) have mobilised around USD 8.4 billion leading to leveraged private finance flows.

- Local Private Finance Institutions, along with Local National and Private Banks have accounted for USD 9 billion of private finance in India since 1999.

– A mixture of local and international private investors have financed USD 16.3 billion worth of investment since 2001 and till 2019.

- Private investment will continue to rise in the future, as indicated by India's growing low carbon environment market, and the increasing number of environmental/green funds.
- The private sector in India faces significant institutional, financial, technical and behavioural barriers.

– Lack of policy clarity and engagement with private sector on climate change policy framework are the main institutional and policy barriers.

– There are numerous financial and economic barriers but the short-term nature of the local debt market, high credit risk and the lack of insurance (risk guarantees) particularly stand out.

– There are numerous technical and knowledge barriers leading to a lack of a regular pipeline of bankable projects.

– Limited fora to engage with the private sector and non-compliance with environment and social safeguards are the main behavioural barriers. Large Indian financing institutions (FIs) and corporates comply with voluntary and certain mandatory environment and social safeguard (ESS) standards not replicated by smaller business units.

- The National Mission on Enhanced Energy Efficiency (NMEEE) and the National Solar Mission (NSM) are showing strong potential to engage and leverage private finance by removing key barriers.

- There is strong potential and ambition from the private sector to scale up climate investments, but to do so, there are a number of measures to be taken:

– Regulatory reforms and incentives are required to provide long term certainty and reduce investment risks;

– Indian FIs need to develop new or scale up existing financing instruments, especially long term debt finance and risk guarantee instruments;

– In India only large private FIs and project developers have strong corporate social governance standards; compliance with environmental and social safeguard (ESS) measures is generally low.

- International credit lines have played a key role in scaling up private sector energy efficiency financing in India by addressing capital constraints, strengthening institutional structures and investing in capacity building.
- International NAMA financing can help to scale up private investment by creating the right policy environment, removing sector specific technical barriers, providing different forms of finance and support to implement large public-private programmes.
- International public financing can assist private sector in India to access funds from the GCF by improving compliance with more stringent fiduciary, environmental and social safeguard and MRV standards.

## Tracking private climate finance flows is very complex

There are no clear and agreed definitions for private and public climate finance which often makes it difficult to distinguish climate finance from both sources. Data confidentiality is an issue when tracking private finance. There are also data gaps for certain sectors, often where private institutions readily undertake investments, but are not

necessarily categorised as 'climate action'. Defining the boundaries and scope of low-carbon and climate friendly investments has also been difficult as there is no common approach across all financial institutions.

**Most forms of private climate finance in India have been leveraged by international and national public finance.** A broad range of institutions and sources are involved in mobilising

private climate finance in India. These include – a) multilateral and bilateral institution credit lines, which mobilise commercial financing from Indian FIs by providing funds to the institutions, which they can then on-lend to project developers or implementers, b) private finance leveraged by national public sector banks (e.g. State Bank of India) and financial institutions (e.g. IREDA) in India, c) finance that has been provided by private banks (e.g. Yes Bank) and financial institutions (e.g. IDFC) and d) mixture of local and international private investors (e.g. CDM investments). The data sources used for this study were a combination of project-level and aggregate data from a variety of sources.

**Around USD 34 billion has been invested in India to mobilise private climate finance, predominantly in renewable energy, energy efficiency and transport sectors**

**Multilateral Development Banks (MDBs) and bilateral finance institutions (BFIs) have**

**mobilised around USD 8.4 billion leading to leveraged private finance flows.** International credit lines continue to play a key role, contributing approximately USD 4.4 billion in the last ten years through loans to Indian banks and project developers for investments in energy efficiency within the building technology, industrial applications and renewable energy sectors.

**Local Private Finance Institutions (PFIs) along with Local National and Private Banks have accounted for USD 9 billion of private finance in India.** Most of this investment (USD 8.6 billion) originated from PFIs, mainly in the renewable energy (USD 4.8 billion) and clean technology (USD 3.6 billion) sectors.

**A mixture of local and international private investors have financed USD 16.3 billion worth of investment since 2001 and till 2019.** Renewable energy investments accounted for USD 14 billion, whilst transport investments made up the remainder.

**Private finance investment varies significantly across all sectors in India**



India has seen approximately USD 19 billion of investment in the **Renewable Energy (RE)** sector since 1999. A combination of financial sources and instruments were utilised, however the majority has been a mixture of local and international private investors financing initiatives in the form of debt



**Energy efficiency (EE)** investments (within the building technology, the industry applications and part of the 'Mixed' category) have accounted for approximately USD 3 billion of private finance in India since 1994. The majority, 2 USD billion, of finance has been provided by multilateral development banks (World Bank and ADB) in the mixed EE category.



The **Transport sector** has had an investment of approximately USD 4.6 billion; supporting initiatives in modal shift from road to rail/long distance rail infrastructure; modal shift to public transport and road infrastructure planning and improvements



Private equity being invested in the **Cleantech sector** since 2005 totalled USD 3.6 billion from 116 deals (VCCEdge, n.d.); unfortunately a breakdown of this information was not available due to confidentiality and commercial reasons.



Since 2006 approximately USD 174 million of private finance has been invested in the **Waste Management sector**. This encompasses investment in waste services (municipal and industrial), waste to energy, e-waste management, solid waste processing and recycling.



The **forestry sector** received USD 1.8 billion worth of investment from JICA since 1991 directed towards India's national Afforestation Program. This was provided in the form of ODA loan assistance, and therefore is not strictly private investment.

Private investment will continue to rise in the future, as indicated by India's growing low carbon environment market, and the increasing number of environmental and green funds

**India's Low Carbon Environmental Goods and Services (LCEGS) market in 2011-12 was USD 323 billion.** It was ranked 4th in the world, behind USA, China and Japan respectively. Furthermore, in BNEF's Climates cope 2014 report, which evaluates climate-related investment on a country-by-country basis, India was ranked 4th out of 55 countries reviewed and it had its best performance on Low Carbon Business and Clean Energy Value Chain parameters (BNEF, 2014).

**The estimated total market value of all the financial assets under management (AUM) by the environmental and green funds in India is currently approximately USD 222 billion.**

There are an increasing number of environmental and green funds in India, primarily investing in renewable energy companies, technology providers and infrastructure sectors. The majority of funds reviewed in this study were managed by venture capital firms.

**The Renewable Energy Market in India is anticipated to see investments worth USD 200 billion by 2022.** India has been able to achieve only 13% of its renewable energy potential, which as of March 2014 was 216,918 MW. The planned USD 100 billion investment to develop India's solar market would increase the capacity to approximately 175 GW by 2022.

**The environmental technologies market is currently estimated to be worth approximately USD 9 billion per year, and is expected to grow by 15% annually** (CCI, 2013). In addition to this, it is estimated that the industrial energy efficiency market potential in 2018 will be around USD 27 million (CCI, 2013).

**The water and waste management sectors have investment plans of USD 50 billion over the next five years.** The Indian municipal solid waste (MSW) management market is expected to grow at a Compound Annual Growth Rate (CAGR) of 7% by 2025 while e-waste management market is expected to grow at a CAGR of 10.03% during the same period.

Large Indian FIs and corporates comply with voluntary and certain mandatory environment and social safeguard (ESS) guidelines not replicated by smaller business units

**The Indian business environment is slowly changing its stand from being reactive to government push to proactively undertaking steps to integrate climate concerns into their business practices**

- Most corporates who are disclosing their ESS related practices are either following the IFC performance standards or have signed up to the Equator Principles.
- A handful of corporates have also signed up to the Standard & Poor's Bombay Stock Exchange Carbonex and Greenex and others are disclosing their ESS practices under the CDP India initiative.
- While public sector units and large corporates have taken steps to introduce ESG in their day to day business, SMEs are still lagging behind.

**Investors across the world have become aware of growing climate, environment and social risks and expect FIs and corporates accessing finance to adhere to stricter ESS standards**

- India needs to proactively bring about a change in complying with ESS standards to attract more international finance to and from the private sector.
- SMEs require substantial capacity building/hand holding to comply with international ESS standards. Compliance with ESS standards (for all organisation sizes) could greatly help to scale up climate finance in India.

The private sector in India faces significant institutional, financial, technical and behavioural barriers

**Lack of policy clarity and engagement with the private sector on a climate change policy framework are the main institutional and policy barriers**

- Government of India (GoI) has provided regulatory mechanisms and economic incentives for engaging the private sector but actual deployment has been slow.
- There has been major private sector investment in the RE sector, but government incentives to attract

private investment in other climate-related sectors has been limited.

- The private sector has had limited engagement with the Government of India in climate change decision-making, and in coordinating a national financing strategy that encourages private sector investment in climate-related activities.

**There are numerous financial and economic barriers but the short-term nature of the local debt market, high credit risk and the lack of insurance (risk guarantees) particularly stand out**

- Private sector investment is restrained as the debt market is usually characterised by short-term loans with high interest rates, which raises the cost of capital significantly.
- Indian Banks have enough liquidity but are apprehensive of entering into new business sectors.
- Indian Financial Institutions (FIs) have greater reliance on asset financing using balance sheet assets which deters equity funding. Project financing based on projected cash flows and involving equity investors, banks or other lending institutions that provide loans to the operation is more suitable as it securitises the cash flow.
- Indian insurance companies are not permitted by the Insurance Regulatory and Development Authority (IRDA) of India to develop advanced insurance solutions such as performance guarantees. Corporate clients see the need for performance guarantees and can obtain cover from outside India. Indian insurance companies lack the expertise and are dependent on foreign partners.
- Distribution companies do not pay power generating companies on time affecting their credit risk. This deters banks from lending to power generating companies due to the high risk on return, for these investments.
- It is difficult for external debt to flow to India. External funders have to comply with complex remittance policies and the External Commercial Borrowings (ECB) guidelines are very strict.
- Due to lack of strong policy framework and voluntary requirements, companies are more likely to borrow for production and growth.

**There are numerous technical and knowledge barriers leading to a lack of a pipeline of bankable projects**

- There is limited understanding of climate risks in private sector investments. Private sector engagement in climate change has been limited to greenhouse gas (GHG) accounting, and there has been no use of robust climate risk screening tools by the private sector.
- Technical knowledge of low carbon sectors to increase investments from FIs perspective have mostly been driven by senior management; project officers appraising the project do not have the requisite knowledge of low carbon sectors.
- Significant scale-up of capacity and removal of barriers are still required to create a strong pipeline of investible projects. Bankable projects are increasingly being developed but mainly in the RE sector. Developing a strong pipeline of bankable projects in the EE sector is still a big challenge. Several barriers such as high transaction costs, small project size, lack of EE understanding amongst financial institutions, etc. have hindered the process.
- Financing energy efficiency projects is more risky due to the small size of the projects and dispersed nature of the technologies. Indian FIs (such as TCCL and ILFS) do not currently have the capacity to cater for the project sizes the Energy Service Company (ESCO) market generates.
- Project developers and financial intermediaries find eligibility criteria and reporting requirements of donors to be extremely onerous. International donors have onerous access and reporting requirements and lengthy project application timescales; which disincentives Indian project developers.

**There are limited fora to engage with the private sector and non-compliance with environment and social safeguards are the main behavioural barriers**

- FIs often view compliance with ESS standards as tedious to follow, and do not add value to the monitoring process. Public banks in India are not obliged to adhere to the Equator Principles; there are few private sector institutions, such as IDFC, PTC Financial who are signatories of the framework, but mainly because it is a pre-requisite by large international institutions, such as the IFC, to allocate climate funds.
- The limited open forum for the private sector to engage with the government in developing policy for the country is a barrier for project financiers,

and developers. There has been no clear initiative from the public sector to engage with the private sector in the low carbon space, in particular in the drafting of the national mitigation strategies.

- There is a lack of trust in the private sector to undertake investments in certain sectors, by the public sector. Thus the leveraging does not occur to the extent it should, as there is a lack of initiative to combine public-private sector funds.

## National climate policies are showing positive signs for scaling up private climate finance

**The National Mission on Enhanced Energy Efficiency (NMEEE) and the National Solar Mission (NSM) are showing strong potential to engage and leverage private finance by addressing key barriers**

	NMEEE	NSM
Objective	The NMEEE promotes innovative policy and regulatory regimes, financing mechanisms, and business models to promote energy efficiency	The NSM aims to achieve grid parity for solar electricity through research & development, domestic production, large scale deployment, and long term and predictable policy that encourages private sector participation in the solar business
Institutional / Political	<p>Setting up of committees for implementation of PAT, PRGFEE and VCFEE</p> <p>A robust framework for implementation of the PAT, using highly consultative process</p> <p>Initiation of new programmes e.g. MTEE's Super-Efficient Equipment Programme (SEEP)</p> <p>Creation of EESL (super ESCO) as a corporate entity to provide market leadership under EEFP</p> <p>Assigned state nodal agencies for implementation of the Mission at the state level</p>	<p>FITs, RECs, RPOs, Power bundling, Accelerated depreciation benefit,</p> <p>Asset liability mismatch and non-availability of long term debt is acknowledged by lenders</p> <p>Stricter enforcement of RPOs to steer the market further.</p>
Financial / Economic	Designed and soon to be implemented new financial mechanisms, in the form of partial risk guarantee fund and venture capital fund, building the confidence of FIs to invest in EE	<p>AD benefit, CDM, MDB financing, bank guarantees,</p> <p>Renewable Energy Infrastructure Development Fund (REID), off-grid fund, viability gap funding (VGF), credit guarantees, charge exemptions.</p> <p>Generation Based Incentives, Manufacturing incentives, Off grid incentives</p> <p>Project financing by IREDA and PFC</p>
Technical / Knowledge	<p>Preparing bankable project DPRs, to build capacities of ESCOs to seek financing from financial institutions</p> <p>Standardizing ESCO performance contracts, to assist ease of understanding of such contracts by project implementers and also financiers</p> <p>Developing performance measurement and verification tools, tailored for Indian EE projects</p>	<p>Creation and up-gradation of Solar Energy Centre for R&amp;D</p> <p>Setting up of Solar Energy Corporation of India (SECI) for facilitating financing, training and capacity building, enhancing technical know-how on solar</p> <p>Supporting a number of Centres for R&amp;D in different institutes</p>
Private Sector Engagement	Sub programmes are primarily designed to encourage private sector investment and finance in the various programmes on EE in India by developing a project pipeline and new financing instruments	The NSM been very successful in attracting private sector investment by creating new financing, implementation and regulatory structures

## There is strong potential and ambition from the private sector to scale up climate investments, but to do so, there are a number of measures to be taken

The stakeholder consultation provided some important lessons and suggestions to scale up private sector investments in climate-related sectors. These are summarised below.

### **Regulatory reforms and incentives are required to provide long term certainty and reduce investment risks**

- The role of the public sector to provide clear policy framework and mitigate some of the risks is crucial to remove some of the barriers for private climate finance. It was highlighted that if financing is made available at market rates with longer terms, many of the financing barriers to low carbon sectors could be overcome.
- Private sector participation is expected to increase in the near future once major implementing climate change programmes are launched under the NAPCC missions. It is expected that programmes such as PRGF and Viability Gap Fund, the Energy Efficiency Mission and Green India Mission can attract large private sector investment.

### **Indian FIs need to develop new or scale up existing financing instruments, especially long term debt finance and risk guarantee instruments**

- There are some good lessons to be learnt from private financing instruments currently being used in India (e.g. debt, equity and partial risk guarantees) to finance grid connected solar power projects. Debt based financing compared to equity can reduce the cost of capital.
- Providing performance and risk guarantees are “the need of the hour”, without which large scale and long term investments for climate mitigation is not likely to happen. A realistic

short-term option for project developers to tap into low cost climate finance is to bring in quality projects in RE and EE sectors and access low cost capital by using government or donor backed guarantee structures (e.g. USAID, WB and BEE).

- New financing structures that encourage more equity and long term debt at lower interest rates are already being developed by FIs but need to be scaled up. There is a need for a quasi-equity structure from banks that encourage a move from asset financing to project financing; this should be complemented with new financial insurance products for risk guarantees.

### **In India only large private FIs and project developers have strong corporate social governance standards; compliance with environmental and social safeguard (ESS) measures is generally low**

- Some of the large FIs such as TATA clean tech and Infrastructure Leasing & Financial Services Limited (ILFS) have strong corporate climate change strategies or governance structures.
- Greater recognition and inclusion of ESS/Social Environment Management Standards (SEMS) into investment decisions will help Indian FIs and project developers to access international climate finance.
- There is potential and capacity to develop better climate-related governance and capacity in banks and FIs in India.

## International credit lines have played a key role in scaling up private sector EE financing in India

The EE sector has been a beneficiary of international credit lines addressing capital and

capacity constraints. International finance today is more needed than ever for achieving India’s ambitious development and climate objectives. A brief summary of the main pros and cons of international credit lines supporting private sector investment is shown on top of next the page.

Pros	Cons
<ul style="list-style-type: none"> <li>• Addressed the issues related to insufficient availability of up-front capital for EE projects</li> <li>• Addressed sector specific barriers such as capacity of loan officers, building awareness and develop best available technology lists</li> <li>• Helped in institutional strengthening of the recipient financial institutions for EE projects</li> <li>• Leveraged domestic public and private financing</li> </ul>	<ul style="list-style-type: none"> <li>• Donor credit lines with more stringent requirements were not utilised by FIs and project developers</li> <li>• The borrowers and loan officers had difficulties in evaluating the eligibility of proposed EE projects with respect to this onerous requirement</li> </ul>

### International NAMA finance can help in creating the right policy environment to scale up private investment

- The NAMA mechanism offers a way for international financial support to enable emission reductions across all sectors, and offers the ability to mainstream climate into development finance.
- Better understanding of sector specific barriers and potentials would help dedicated public international NAMA financing to strategically leverage domestic private sector investments.
- International climate finance can provide different forms of finance and support along the NAMA programme and project life cycle trajectory – requiring a blend public and private capital, from international and national sources.
- International climate finance should aim to move from policy to programme NAMAs in India to leverage private finance. India needs to prioritise large scale sector programmes to ensure low carbon and climate resilient growth. This investment can be supported by ‘Programme NAMAs’ that combine government incentives and financial mechanisms to overcome investment barriers and risks, catalyse private investments and improve the profitability for private investors.

### International public finance can assist private sector in India to access funds from the GCF

- The private sector would need support to comply with GCF fiduciary standards. Organisations like

GIZ, World Bank etc. could support FIs and project developers strengthen their fiduciary capacities and showcase best practice through pilots.

- Indian FIs and project developers would also need to improve their ESS standards. International public finance can help private sector to adopt Equator Principles or IFC Performance Standards for accessing funds from the GCF.
- One area where the private sector in India needs urgent support is to design and implement climate resilient and smart cities. India’s city governance and finance structure require substantial capacity building for accessing and mobilising climate finance. Private sector access to GCF modalities could lead to various public-private partnerships and this in turn could lead to huge consortiums to develop climate resilient urban infrastructure.
- International climate finance and GCF could set up guidance teams to help countries develop MRV structure in relation to both finances as well as emission reductions. The GCF could alternatively have a dedicated due diligence team that employs the guidance structure for MRV to assess proposals. It could be made mandatory that only those proposals having good MRV structures in place could be eligible to access international climate finance or funds from the GCF.





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Registered offices: Bonn and Eschborn, Germany

B-5/2, Safdarjung Enclave  
New Delhi 110 029 India  
T: +91 11 49495353  
E: [info@giz.de](mailto:info@giz.de)  
I: [www.giz.de](http://www.giz.de)

### Responsible

Mr. Enrico Rubertus, Project Director

### Authors

Adarsh Varma (Ricardo-AEA), Emily Le-Cornu (Ricardo-AEA),  
Prima Madan (IIEC), Sanjay Dube (IIEC)

### Editors

Tobias Dorr (GIZ), Koyel Mandal (GIZ), Enrico Rubertus (GIZ)

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Matyas Rehak, Galya Andrushko, Wirojsid

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