

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDC597

Project Name	Partial Risk Sharing Facility in Energy Efficiency (P132620)
Region	SOUTH ASIA
Country	India
GEF Focal Area	Climate change
Sector(s)	Energy efficiency in Heat and Power (100%)
Theme(s)	Infrastructure services for private sector development (20%), Climate change (80%)
Lending Instrument	Investment Project Financing
Project ID	P132620
Borrower(s)	Department of Economic Affairs
Implementing Agency	Bureau of Energy Efficiency
Environmental Category	F-Financial Intermediary Assessment
Date PID Prepared/Updated	04-Apr-2013
Date PID Approved/Disclosed	10-Apr-2013
Estimated Date of Appraisal Completion	16-Oct-2014
Estimated Date of First Grant Approval	13-Jan-2015
Decision	

I. Project Context

Country Context

India's continued economic growth and rapid urbanization has led to dramatic increase in primary energy demand. A projected increase in primary energy supply and electricity generation by up to four and six times their current levels, respectively, will provide all households with 'lifeline' electricity consumption by 2031 and sustain economic growth at 8 percent. Energy and peak load deficits were 5.1 and 4.3 percent, respectively, in 2014.

Adopting increased levels of energy efficiency (EE) is necessary not only to manage energy demand, but also to enhance energy security and address local and global environmental concerns. India has substantial untapped energy efficiency potential across various sectors. Recent studies have identified many energy efficiency investment opportunities throughout the economy that would yield high financial returns with short payback periods.

Sectoral and institutional Context

India's Energy Efficiency Potential: The GoI estimates that its overall EE market has an investment

potential of US\$9.77 billion and could save up to 183.5 billion kilowatt hours (kWh) and 148.6 million tons of CO₂ in only five years. Over 25 percent of these estimated savings are expected to be achieved in the industrial sector. Much of this potential lies within micro, small and medium enterprises (MSMEs), as they comprise more than 80 percent of the country's industrial enterprises and lag behind larger industry benchmarks in technology modernization and other energy efficiency measures. Buildings sector can reduce an average of almost 20 percent of current energy usage through energy efficiency measures. Over 70% of the buildings' stock, proposed to be built by 2030, is yet to be developed in India.

Regulatory Mandates and Policy Initiatives: The GoI has recently enacted a variety of regulatory mandates and policy initiatives to tap energy savings opportunities under its National Mission for Enhanced Energy Efficiency (NMEEE). NMEEE aims to address inefficient usage of energy in the country by setting mandatory energy saving targets in industries, stimulating funding for Energy Services Companies (ESCOs), and engaging in market transformation by introducing energy efficient appliances and introducing various different EE financing instruments. By far the largest of these NMEEE initiatives is the Perform, Achieve and Trade (PAT) scheme, a globally unique program that has mandated energy-intensity targets for the country's most energy-intensive industrial sectors.

Financing for Energy Efficiency: Financing for energy efficiency in India, particularly on the demand side, is still nascent, but pioneering institutions have made in-roads and shown interest in the area. Several banks and financial institutions have been actively engaged in EE financing, including traditional lending, seed funding, venture capital finance, MSME loans, mortgage financing, equipment subsidies, and even a small amount of financing to the ESCOs, since 1999. Despite all of the EE potential, most end users on the demand side (such as industries, buildings, municipalities) are unable to implement EE projects on a large scale, because they either lack the technical capacity or have little financial credibility to borrow for EE investments. There are other implementation challenges faced by EE markets in general and those apply to India as well – small size and higher transaction costs, multiple stakeholders and ecosystem problems, and ambiguity on asset creation / ownership- which exacerbates the barriers to EE investments on a larger scale.

ESCOs and Performance Contracting: In many markets, intermediaries – generally energy service companies (ESCOs) – help clients overcome some of the key EE market barriers. ESCOs provide a range of services, including identification of EE opportunities, connection with equipment manufacturers, design and management, construction, maintenance of the EE technology, and structuring transactions that are based on monetized energy savings, and monitoring and verification of the resulting energy and cost savings. In many cases with smaller EE projects, ESCOs can also bundle them to bring down the cost of transactions and financing. However, a robust “energy efficiency ecosystem”, with mature financial institutions and supporting EE policies, is necessary to enable a successful ESCO and energy service performance contracting market.

ESCOs establish credibility through an energy savings performance contract (ESPC) mechanism that guarantees the client (host entity), certain level of energy savings from the identified EE measures, thereby transferring technical project risk to the ESCO. Implementation of the EE measures can then be financed through a “guaranteed savings” model, in which the client finances the project. This approach can be extended to a “shared savings” model, in which the ESCO itself finances the project, thereby also assuming the project's credit risk, and gets repaid through a portion of the client's future monetized energy savings. In this latter case, the client (host entity)

does not make any investments. Irrespective of the two ESCO models to be used to scale up EE investments, the very nature of energy savings performance contracting approach requires that all market participants – clients, ESCOs, and lenders – accept the contract processes and transaction templates. These include ESPC templates, monitoring and verification (M&V) guidelines, appraisal and contractual agreements, etc. However, in India, there currently are neither widely accepted regulations nor established practices or associated legal provisions for the ESCO-implemented transactions.

A shared savings model is often essential when clients cannot – or do not want to – themselves borrow to finance an EE project. In addition, the shared savings model is more acceptable in unproven ESCO markets, as clients are often hesitant to initially trust ESCOs, and having ESCOs assume both technical and credit risk increases clients’ perceptions of their ability to deliver energy savings. An emphasis on introducing the shared savings model was, for example part of the impetus behind the strong growth in China’s ESCO market.

The Indian financial sector boasts of strong and mature financial institutions (FIs) with considerable liquidity in the market. However, there are perceived risks in the mind of FIs which impede investments towards EE opportunities in general, and to lending to ESCOs in particular. The industry, in turn, also needs support towards EE technologies and contractual agreements. Demonstration of ESCO-based EE transactions through this proposed operation – Partial Risk Sharing Facility (PRSF) for Energy Efficiency project – would help alleviate the perceived risks, assist the market actors like ESCOs to have better access to finance, mobilize over US\$127 million of commercial financing for EE investments across various demand side sectors and thereby trigger large-scale EE market transformation.

Relationship to CPS (Country Partnership Strategy) for India 2013-2017

The project is aligned with the second pillar of the India CPS – “Transformation”. The project is aimed at unlocking significant private sector investment potential and catalyzing an energy savings performance contracting market in India by encouraging increased investment in energy efficiency. Promotion of investments in energy efficiency will also reduce the need for increasingly expensive and difficult generation capacity expansions and reduce operating costs for end users, including industries, municipalities and buildings. PRSF will contribute to enhancing energy security, increasing competitiveness, and reducing GHG emissions and local pollutants.

II. Proposed Global Environmental Objective(s) (Display Only - Pulled from PCN)

Proposed Global Environmental Objective(s) (From PCN)

To achieve energy savings by mobilizing commercial finance and participation of ESCOs

The very nature of contracts in the proposed project lend themselves to accurate measurement and verification of energy savings. The primary indicators of the project’s performance would be:

- Annual energy savings achieved by projects that receive PRSF risk coverage (GWh)
- Annual mitigation of CO₂ emissions achieved by projects that receive PRSF risk coverage (million tons; estimated based on the type and amount of energy savings recorded)
- Total number of ESCO-implemented energy efficiency investments whose loans receive credit guarantee from PRSF
- Total amount of financing provided for ESCO-implemented energy efficiency

investments including that from SIDBI and PFIs that receive PRSF risk coverage (million USD).

III. Preliminary Description

Concept Description

Many ESCOs and other performance contractors in India are technically proficient, but, due to a variety of barriers, are unable to scale up their operations, which severely limits India's market for energy efficiency projects and performance contracting. Consultations with key stakeholders, including banks, ESCOs, technology providers, donors, and bilateral institutions, have suggested that lack of access to commercial credit, primarily driven by lenders' high risk perception, is the main barrier. Other barriers include high transaction costs, lack of performance contract standards and energy savings monitoring and verification guidelines, inadequate pilots with replicable contracts, etc. This proposed project aims to assist ESCOs in scaling up their operations by enhancing their access to commercial credit and addressing some of the other barriers. Described below are the barriers this project would target in greater detail:

a. High risk perception amongst lenders: In a rapidly growing economy with governance concerns in terms of legal and contract enforcement issues lax of contracts and laws, lenders prefer to lend to industries that are increasing their margins by the conventional means of 'producing more' rather than 'spending less' through investments that are not very widely understood. Banks are also more conversant with asset-backed lending. EE projects are unconventional, in that they rely mostly on 'not doing something' rather than 'doing something', and they do not lend themselves to asset-backed lending, which causes banks to view them as higher risk. Thus, banks lend to ESCOs for EE projects only at relatively high rates and short maturities, impeding ESCOs' ability to access long-term credit. The project tries to address this barrier by providing lenders a facility to enhance their understanding of these projects by sharing some risk with them. The technical assistance component of the project described below includes components on capacity building and awareness creation for financial institutions likely to lend to the clean energy sector.

b. High transaction costs: The average ticket size for loans for energy efficiency investments is fairly small compared to the loans for capacity expansion in an emerging economy, increasing the transaction costs for lenders. Due to the need to undertake detailed energy audits, energy calculations and detailed engineering design, ESCOs also face high transaction costs to invest and recover its investments from clients. Frequent delays in payments and lack of any legal remedy for such delays, further threaten ESCOs' thin margins from energy savings. Finally, some projects require ESCOs to deal with several distinct entities (building owners, operators and users), which substantially increases the transactions required of the ESCO. Projects that require individual approvals for each transaction typically do not see any significant take-up. This proposed project attempts to overcome this barrier by providing an aggregator, the Preparation Committee, that would aggregate projects into single portfolios to reduce the number of lending transactions required from banks. The IFC's Utility-Based Energy Efficiency Finance program in China, which also has a strong government mandate for energy reductions, used a similar methodology and it has seen significant success.

c. Lack of energy performance contracting standards and energy savings monitoring and verification guidelines: In performance contracting, clear and broadly accepted measurement and verification methodologies are crucial for verification that is mutually acceptable for the ESCO and the client.

Standards and codes for goods and services provide generally acceptable parameters for all the players in a market. Due to the nascent nature of the energy performance contracting market in India, there are no widely accepted codes and standards for such projects. Therefore, each project is forced to prepare its own methods, including energy savings performance contracts and associated

monitoring and verification protocols, which often create information asymmetries between the client and the ESCO. When a client contracts two ESCOs for baseline creation and implementation, each repeats the same measurements, increasing the project's cost and lag time. In India's system with long gestation periods for judicial remedies, interventions like performance contracting, that have inherent information asymmetries in the absence of universally acceptable codes, are susceptible to long court cases, substantially increasing payment risks and transaction costs. Codes allow market players to standardize their products for inter-operability and comprehensibility. The Bureau of Energy Efficiency (BEE) has proposed adopting the international standard code ISO 50001 for monitoring and evaluation of energy audits in India, which is expected to reduce the variation between the various kinds of Measurement & Verification (M&V) systems. The proposed project will support this initiative.

d. Inadequate pilots with replicable contracts: Despite several pilot projects financed by multi-lateral and bilateral aid, the number of pilots that are replicable is fairly small. Due to the inherently specific nature of the projects at different buildings, contracts need to be customized for each project, reducing replicability of successful contracts and increasing transaction costs. Absence of standard templates for contracts and lack of operational guidelines to resolve project specific issues cause a perception of higher risk. The project will address this barrier by partnering with BEE to create templates and operational guidelines that other parties can follow. The proposed operation builds on the existing partnerships with the BEE, the Government of India, the private sector and other stakeholders to scale-up Bank support for energy efficiency in India by utilizing CTF proceeds as well as Bank resources.

Preliminary Project Description: The project development objective is to assist India in achieving energy savings with mobilization of commercial finance and participation of Energy Saving Companies (ESCOs). The PRSF is broadly aimed at addressing various market barriers that impede EE practices and financing, and to catalyze the energy savings performance contracting modality of transactions for implementing EE projects through ESCOs in India. The PRSF will overcome existing barriers in this market by:

- a. Addressing the barriers of access to financing faced by ESCOs, by providing risk coverage to reduce the risks perceived by financial institutions in financing EE projects implemented by ESCOs on performance contract basis,
- b. Engaging financial institutions, host entities and ESCOs and building the former's capacity to finance EE projects on a commercially-sustainable basis and the latter's capacity to structure and seek financing for ESPC- based energy efficiency projects,
- c. Structuring the transactions involved in financing EE projects by standardizing ESPC. Measurement and Verification (M&V) protocols, appraisal and other supporting documents.

The learning from the PRSF is expected to help build the capacity of commercial banks to analyze and appraise loans to EE projects implemented by ESCOs, thereby reducing their risk perception of such EE loans and obviating the need for the type of risk-sharing offered by the PRSF in the future. The operational templates for ESPC, M&V protocols, and appraisal tools will be made available widely ensure that the reduction in financial institutions' risk perception of EE loans and providing increased access to credit for EE in future.

Leverage and co-financing:

The CTF Guarantee of US\$25 million will leverage GEF funds, commercial debt as well as private equity. A GEF contribution of US\$12 million will be used towards the management and operating expenses of the facility and meeting sub-guarantee calls, and a GEF contribution of US\$ 6 million

will be used for technical assistance. When sub-guarantee fees, interest income and facility reflows are included, the total guarantee issuing capacity of the risk-sharing facility will be US\$48 million over 10 years. With an average coverage ratio of 54 percent and an equity contribution of 30 percent for each sub-project, total commercial debt and private investment for energy efficiency investments will be US\$127 million. Therefore US\$25 million of CTF mobilizes US\$127 million of financing from the private sector, as well as US\$ 18 million in GEF financing, making the CTF leverage ratio 1:5.8.

The total project cost is estimated to be US\$43 million, of which the CTF Guarantee will constitute \$25 million and the GEF grant will finance \$18 million. Of the CTF and GEF funds, US\$37 million will be used to support the risk sharing facility and US\$6 million will be provided as TA. The total program cost will include PRSF-covered debt of US\$48 million (amount of sub-guarantees issued over a 10-year period, including rolling over some of the funds in the Facility for a second round of sub-guarantees), uncovered commercial debt (part of the debt of the EE projects that will not be guaranteed by the Facility) of US\$41mn and private co-financing/equity of US\$38mn. Together with TA, the total program cost is therefore US\$133 million.

Proposed Project Structure:

The implementation of the PRSF involves multiple stakeholders, and design elements, modalities and processes, and governance framework to ensure close coordination amongst themselves. A Cooperation Agreement between India and GEF and CTF (with IBRD as implementing entity) along with a CTF Guarantee Agreement with SIDBI and GEF Grant Agreements with each of SIDBI and EESL will lay the legal framework for this proposed operation. All agreements will include references to other key documents, including the Operations Manual.

- SIDBI will, as a Project Execution Agency (PEA), manage the PRSF Guarantee Facility on behalf of India. SIDBI functions under the aegis of Department of Financial Services, Ministry of Finance and the Ministry of MSMEs. The institutions, who will benefit from the PRSF Facility to be managed by SIDBI, will be the PFIs, ESCOs and the beneficiaries (MSMEs, industries, municipalities and buildings). The TA implementing agencies are SIDBI and EESL.
- Both ESCOs and host entity beneficiaries could be the borrowers of energy efficiency loans from PFIs or SIDBI (as a lender) under PRSF. The project (host entity) beneficiaries are the owners, represented by authorized representative, within whose premises the energy efficiency project is to be implemented. The project beneficiaries are: (a) Large industries, including those notified under the BEE's energy consumption norms and standards (i.e., through PAT), or (b) MSMEs, or (c) street lighting (municipalities), or (d) buildings.
- PFIs will be scheduled commercial banks and non-banking financial corporations (NBFCs), regulated by the RBI, that will meet the PFI eligibility criteria for empanelment. The empanelment criteria for PFIs will be laid out in the Operations Manual. SIDBI's lending arm will also be able to benefit from PRSF guarantees, although it would be excluded from CTF guarantee coverage.

II. Project Development Objective(s) / Global Environmental Objective(s)

A. Project Development Objective(s)

The project development objective is to assist India in achieving energy savings with mobilization of commercial finance and participation of Energy Service Companies (ESCOs).

B. Global Environmental Objective(s)

The project development objective is to assist India in achieving energy savings with mobilization of commercial finance and participation of Energy Service Companies (ESCOs).

III. Project Description**Component Name****Comments (optional)****IV. Financing (in USD Million)**

Total Project Cost:	43.00	Total Bank Financing:	0.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			0.00
International Bank for Reconstruction and Development			0.00
Global Environment Facility (GEF)			18.00
Climate Investment Funds			25.00
Total			43.00

V. Implementation**VI. Safeguard Policies (including public consultation)**

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12		x
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)**VII. Contact point****World Bank**

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