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BUREAU OF ENERGY EFFICIENCY
(Ministry of Power, Government of India)

Operations Manual for Partial Risk Guarantee Fund for Energy Efficiency(PRGFEE)

(DRAFT COPY)

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EXECUTIVE SUMMARY

1.1 Background

Bureau of Energy Efficiency (BEE) has appointed Darashaw & Co. Pvt. Ltd. (Darashaw& Co.) to develop the documents for Partial Risk guarantee Fund for Energy Efficiency for giving the partial guarantee to Participating Financial Institutions as empanelled with the BEE(PFI). The project is a part of BEE's project titled "Development of documents for Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and Venture Capital Fund for Energy Efficiency (VCFEE)".

1.2 Brief Overview of the Manual

The manual is designed to facilitate the Implementing Agency(IA) to appraise the energy efficiency projects proposals submitted by the PFI. The manual provides the standard documents including evaluation process, energy performance contract, Monitoring & Evaluation document, Guarantee agreement between PFI and IA required for the PRGFEE.

2 ENERGY EFFICIENCY-INTRODUCTION

2.1 Energy Efficiency (EE)

Energy Efficiency (EE) project refers to any process, technique or equipment that helps to achieve reduction in energy consumption to perform a designated operation to achieve same or better level of output while maintaining or improving processing time, quality, performance and safety with minimal environmental impact.

2.2 Advantages/ Importance of Energy Efficiency

The following are major advantages of implementing EE projects:

- Reduction in energy consumption, thereby adding directly to the profits or bottom-line of the company
- Lowering the vulnerability to energy prices for unit/corporate that has implemented EE projects
- Reducing the need for investment in newer power plants and import of energy
- Reducing the dependence on conventional resources like oil and natural gas
- Reducing emissions of air pollutants

2.3 National Action Plan on climate change (NAPCC)

Realizing the growing challenge of climate change and its likely impacts on the Indian economy, the Government of India (GOI) released the National Action Plan on Climate Change (NAPCC) in June 2008, with the objective of achieving a sustainable path of development that simultaneously advances economic and environmental objectives. The NAPCC enunciates eight key National Missions Figure below guiding the country through the climate change.

- National Solar Mission
- National Mission on Enhanced Energy Efficiency
- National Water Mission
- National Mission for a Green India
- National Mission for Sustaining the Himalaya Ecosystem
- National Mission for Sustainable Agriculture
- National Mission on Strategic Knowledge for Climate Change
- National Mission on Sustainable Habitat

2.4 National Mission for Enhanced Energy Efficiency (NMEEE)

NMEEE as a key component of the NAPCC reflects the GOI's increased and renewed emphasis on achieving energy efficiency in Indian economy. This Mission by promoting innovative policy and regulatory regimes, financing mechanisms, and business models seeks to not only create, but also sustain, markets for energy efficiency in a transparent and time bound manner. In addition to the ongoing schemes and programme the NMEEE puts in place four new initiatives to enhance energy efficiency mention in Figure below.

PAT

- A market based mechanism to enhance cost effectivness of improvments in energy efficiency in energy intensive large industries through certification of energy saving that could be traded

MTEE

- Accelerating the shift to energy efficient appliances in designated sectors through innovative measures that make the products more affordable

EEFP

- Energy Efficiency Financing platform: A mechanism to finance DSM programmes in all sectors by capturing furture energy savings

FEEED

- Framework for Energy Efficient Economic Development: Developing fiscal instruments to promote energy efficiency

2.5 Bureau of Energy Efficiency (BEE)

The government of India enacted the Energy Conservation Act 2001 (EC 2001) in September 2001 with an objective to promote and enforce the progressive regime of Energy Conservation. The Act laid the foundation for establishment of BEE. BEE's objective was to facilitate the Central Government in formulation of a regulatory framework for energy efficiency and conservation in India, promote energy efficiency by increasing awareness via dissemination of information for efficient use of energy and its conservation, and develop promotional financing schemes.

2.6 Energy Service Company (ESCO)

An energy service company (ESCO) is one that offers comprehensive, customized energy saving solutions to its customers. An ESCO is engaged in developing, installing and financing comprehensive, performance-based projects aimed at energy efficiency or load reduction of facilities owned/operated by customers. Typical services provided by most ESCOs include:

- Energy Audit and formulation of Detailed Project Report (DPR)
- Implementation of EE projects (Includes undertaking implementation and project monitoring)
- Procurement of equipments to be installed
- Arranging Finance (equity and Debt) for the project in select cases
- Equipment maintenance and operation

The ESCOs empanelled with BEE are eligible under PRGFEE. The update list of ESCOs is readily available on the website of BEE at https://beeindia.gov.in.

2.7 Implementation Agency (IA)

For implementing and operationalizing the PRGFEE program, BEE shall appoint an Implementation Agency (IA) in terms of the Implementation Agency Agreement (IA Agreement).

Role and Responsibility of IA: IA shall be *inter alia* responsible for managing the PRGFEE fund, issuance of PRGFEE guarantees in favour of the PFIs and generally responsible for implementing and operationalizing the PRGFEE program in accordance with its roles and responsibilities as identified under the IA Agreement and this OM.IA shall not be liable to undertake any additional role and responsibility and any cost associated therewith unless specified under the IA Agreement, RFP or the OM or mutually agreed upon in writing between the IA and the BEE.

Review of Performance of IA and Penalty: Quarterly performance of IA will be reviewed by BEE and Supervisory Committee. The following penalties shall be applicable in case of significant variation in actual guarantees committed and non-performance on the part of IA:

(a) IA shall be responsible to commit guarantees equivalent to minimum 80% of the PRGFEE fund available with it in any year. If significant variation is found in actual guarantees committed with respect to the commitment made by IA, the Supervisory Committee may levy a penalty equivalent to 5% of the annual management fee (of the year in which such determination is made) and in case of noticing any major non-performance (such as point (b) below or any other major issue) on the part of Implementing Agency, the case may be presented before Supervisory Committee which may take any disciplinary action against the Implementing Agency on the recommendations of BEE;

(b) In case NPA exceeds 15% of the total fund corpus (excluding guarantee fee, application fee and interest amount) the process of committing any further guarantees by IA shall be immediately stopped, and the guarantee mechanism and the performance of IA shall be immediately reviewed by BEE/ Supervisory Committee.

In the event of (b) above, it shall be examined by Supervisory Committee that whether the reason for default was either commercial or technical in nature and the role of IA shall be examined in that scenario. In the event of carelessness found at the end of IA, a penalty not exceeding 5% of the annual management fee shall be levied for that particular year (in which event b has occurred). The operational parameters with respect to the procedures to be followed by the IA prior to issuance of PRGFEE guarantees, during the subsistence thereof and at the time of handling claims raised by PFIs have been established in detail hereunder. The IA is mandatorily required to follow the said procedures during the aforesaid stages of PRGFEE program. As long as the IA carries out its roles and responsibilities in accordance with the said procedures, no penalty shall be levied on the IA on account of non-performance or breach of the terms hereof or the IA Agreement. This clause shall be read in harmony with clause 15 of the IA Agreement.

3 PARTIAL RISK GUARANTEE FUND

3.1 About Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE)

The Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) is risk sharing mechanism to provide PFIs with a partial coverage of risk involved in extending loans for energy efficiency projects. The guarantee provided by the fund will directly support financing of energy efficiency projects by:

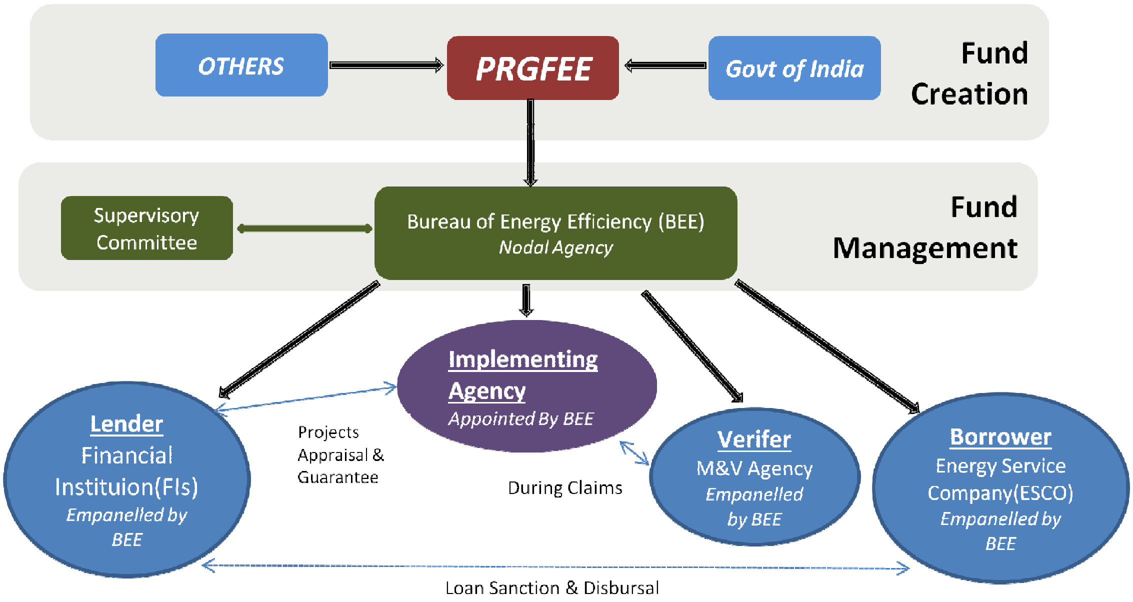
- Addressing credit risk and barriers to structuring the transactions involved in financing energy efficiency projects.
- Engaging commercial financial institutions and building their capacity to finance energy efficiency projects on a commercially sustainable basis

A Financial Institution empanelled as a Participating Financial Institution (PFI) with the BEE will be eligible to participate under PRGFEE. Under PRGFEE, the PFI can take guarantee from the IA or through its designee before disbursement of loan to the borrower. The IA shall be Public Sector Financial Institution or a consortium of entities including a Public Sector Financial Institution, selected by BEE for implementing all the activities under PRGFEE.

The support under PRGFEE will be limited to government buildings, private buildings having commercial and multi-storey residential accommodations, municipalities, small & medium enterprises and industry.

Unless otherwise specified by BEE, the PRGFEE shall be operational till the fund corpus allocated by GOI for the same, is exhausted or for a total of 10 complete years from the date of commencement of the program whichever is earlier.

Institutional Structure of PRGFEE:



3.2 Objective of PRGFEE

The main objective of PRGFEE is to scale-up Energy Efficiency investments through Energy Savings Performance Contracting (ESPC) route in India.

The PRGFEE will support the financing of energy efficiency projects by:

i. Addressing the risks and barriers faced and/or perceived by the financial institutions to financing ESCOs for implementing ESPC-based EE projects in India,

ii. Structuring the transactions involved in financing EE projects by standardizing appraisal and other supporting documents, and

iii. Engaging PFIs and building their capacity to finance EE projects on a commercially-sustainable basis

3.3 Type of Guarantee and Risk Sharing Mechanism

PRGFEE will act as a first-loss and subordinated recovery guarantee, to be placed in a guarantee reserve account and paid out to PFIs in the event of energy efficiency projects becoming a non-performing asset (NPA). PRGFEE shall be used for promoting energy efficiency in India through the ESCO route. The amount paid out will be equal to the agreed-upon percentage of the outstanding principal and will not cover the interest or any other fees owed to the PFI by the borrowing entity.

3.4 Guarantee Details

- The Fund shall give a guarantee for a maximum 50% of the loan, subject to the principal amount actually disbursed, provided, by the PFI and in case of EE account becoming NPA, the fund shall
  - Cover the first loss subject to maximum of 10% of the total guaranteed amount
  - Cover the remaining default outstanding principal amount actually disbursed amount on pari-passu basis up to the maximum guaranteed amount.
- The IA shall finalise the percentage of guarantee for each guarantee facility.
- PFI shall take guarantee from the PRGFEE before disbursement of loan to the borrower i.e. ESCO subject to payment of guarantee fees.
- The Guarantee for any one project shall not exceed **Rupees Three crore (Rs.3crore)** per project or 50% of the sanctioned loan amount (subject to the principal amount actually disbursed), whichever is less.
- The PRGFEE Guarantees issued in favour of the PFIs shall not be deemed to automatically cover any top-ups or additional loans provided to the Borrower.

3.5 Guarantee Tenure

- The maximum tenure of the Guarantee will be five (5) years from the date of first disbursement of the EE Loan or the last date of the operational period of PRGFEE or the date on which any claim raised under a Guarantee (as approved by the IA) is settled (or rejected), whichever is earlier.

3.6 Type of Guarantee

- Under the PRGFEE, only individual project guarantees will be given initially. Subsequently, based on the experience of Supervisory Committee it could be extended to portfolio guarantees, after approval of portfolio guarantee rules by Ministry of Power.

3.7 Application and Guarantee Fee

- The PRGFEE shall charge an application fee of 0.1% of the maximum guaranteed amount applied for, by the PFI at the time of application. This fee is non-refundable.
- Each EE Loan, eligible under PRGFEE will entail a one-time Guarantee Fee of 1%, plus applicable service tax, of the amount guaranteed for each project, if borrower is a male entrepreneur and payable after approval and before signing of guarantee agreement. In case the borrower is a female

entrepreneur, the Guarantee fee would be 0.50% plus applicable service tax of the amount guaranteed for each project, provided that:

- ESCO company is managed by one or more female entrepreneurs who have stake not less than 51% of the total equity.

- Upon signing of the Guarantee Agreement and disbursement of first tranche of the loan by the bank , this fee shall be non-refundable. However in case of non-disbursement of first tranche of loan within six months from date of signing of guarantee agreement, 50% of the guarantee fee shall be refunded to the PFI on recieval of such request from the PFI maximum within a period of nine months of signing of guarantee agreement, beyond which the guarantee fee shall be non-refundable.
- The Guarantee Fee will be valid from the date of disbursement of the EE Loan till the end of the Guarantee tenure for the EE Loan.
- Both Guarantee fee and application fee shall be deposited in PRGFEE fund and would be utilized for administrative expense in addition to 5% of the total corpus of the PRGFEE fund.

3.8 EE Loan Agreement

- The details of the EE Loan, as mutually agreed between the PFI, and the Borrower, will be documented in the Loan Agreement.
- The PFI may suitably incorporate other relevant clauses, as per its documentation procedures, in the loan agreement without omitting/ modifying/ contradicting the prescribed guidelines under the scheme. The PFI shall also include standard clauses provided by IA and/or BEE in the EE loan agreement.

3.9 EE Loan Repayment Mechanism

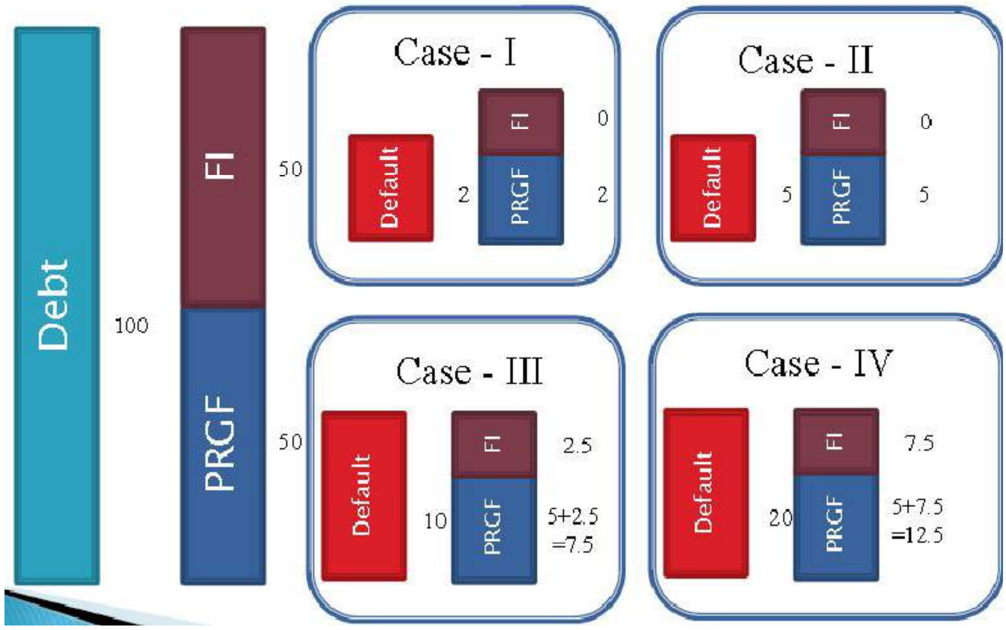
- The EE Loan repayment will be done in accordance with terms and conditions of the Loan Agreement and routed through the Trust and Retention Account (TRA).
- The TRA will be valid for entire EE Loan tenure, and not only the Guarantee Tenure.

3.10 Guarantee Claim

- The Guarantee covered under PRGFEE will be a percentage of the outstanding principal loan amount at the time of the Guarantee Claim. In case of EE account becoming NPA, the fund will:

a) Cover the first loss subject to maximum of 10% of the total guaranteed amount

Note: Calculation method for first loss will be as follows:



It has been assumed that loan amount (assuming that the entire loan amount has been disbursed) is Rs. 100 lakh and guaranteed amount Rs. 50 lakh.

Case I: If default amount is Rs.2 lakh which is less than 10% of total guaranteed amount i.e.Rs. 5 lakh then the liability for the entire outstanding amount of Rs. 2 lakh will be borne by PRGFEE.

Case IV: If default amount is Rs. 20 lakh which is more than 10% of total guaranteed amount i.e. Rs. 5 lakh then Rs. 2 lakh will be reimbursed by PRGFEE.

b) Cover the remaining outstanding principal amount on pari-passu basis upto the maximum guaranteed amount

In the context of PRGFEE coverage of remaining amount on pari-passu basis shall mean that after taking into account the liability towards first loss, the liability for the remaining outstanding principal amount shall be borne by PRGFEE and the PFI in the same proportion in which the risk pertaining to the loan was agreed to be borne between PRGFEE and the PFI at the time of issuance of PRGFEE Guarantee.

Accordingly, while submitting the Guarantee Claim Form, the PFI is required to state the Guarantee Claim amount in accordance with the illustration provided under 5.2.1 herein below.

- In case PFI declares the EE Loan as an NPA, based on the instructions and guidelines issued by the Reserve Bank of India from time to time, call up the EE Loan, and make necessary application in the prescribed guarantee claim form to the IA for approval of the guaranteed claim (as per guarantee agreement) at the time of NPA declaration.
- Upon receipt of application in the prescribed guarantee claim form from PFIs for approval of their claim, the IA will get the measurement and verification of the claimed amount done by the Measurement & Verification (M&V)agency empanelled by BEE and based on the recommendations of M&V agency and submission of relevant guarantee documents shall provide its approval or rejection of the claim by IA. Once the claim of the PFI has been approved by the IA in writing, the same shall be presented by the PFI to the issuer of PRGFEE guarantee for recovery of the claimed amount. The claim of the PFI shall not require any further scrutiny thereafter and shall be made good promptly with a period not exceeding 15 working days from such presentment.
- Once the PFI avails the Guarantee Claim, as outlined above, the particular EE project will no longer be eligible under the provisions of the PRGFEE.

3.11 Subrogation of rights and recoveries on account of claim paid

- The PFI shall furnish to the PRGFEE, the details of its efforts for recovery, realization and such other information as may be demanded or required from time to time.
- The PFI or a security trustee appointed by it shall hold lien on assets created out of the credit facility extended to the borrower, on its own behalf and on behalf of the IA.
- The PRGFEE shall not exercise any subrogation rights and that the responsibility of the recovery of dues including takeover of assets, sale of assets, etc, shall rest with the PFI.
- Every amount recovered and due to be paid to the PRGFEE/IA shall be paid without delay, and if any amount due to the PRGFEE remains unpaid beyond a period of thirty (30)working days from the date on which it was first recovered, interest shall be payable to the PRGFEE by the PFI at the rate of 4% above the base rate of State Bank of India for the period for which payment remains outstanding after the expiry of the said period of thirty (30) working days.

3.12 Minimum Eligibility of Projects

Eligible projects under the PRGFEE, for which Participating Financial Institution (PFI) can apply for a guarantee, could be credit facilities extended by PFI to ESCO for energy efficiency projects. The support under PRGFEE shall be for the government buildings, private buildings having commercial and multi-storey residential accommodations, municipalities, small & medium enterprises and industry.

a. Each Eligible Project should meet the following criteria:

i. Seek to achieve demonstrable energy savings and mitigation in emissions of greenhouse gases;

ii. Propose a viable method to monitor and verify energy and greenhouse gas emission savings;

iii. Be a new project, not refinancing existing projects or any outstanding obligations of the Eligible Borrower; and

iv. Use viable technology and be developed with competent energy audit/feasibility studies;

v. Project must be implemented by BEE empanelled ESCO on performance contracting mode, where there is a defined agreement which link payment to certain level of energy savings.

b. Besides, meeting the above mentioned eligibility criteria the project should also ensure that minimum 70% of the eligible loan amount should be towards the cost of the investments required for implementation of the EE project which shall include expenditure on purchase, erection and commissioning, installation or retrofit/ modification of the equipment etc. contributing to energy savings and 30% for others; or

   the project can be a joint project of Renewable Energy and Energy efficiency with a component of 50% for the cost of the investments required for implementation of the EE project as above and 50% for RE and other costs.

c. Loan amount below Rs. 5 Lakh will not be considered under PRGFEE.

3.13 Projects not eligible under PRGFEE

i. any project in respect of which performance risks are additionally covered under a scheme operated or administered by deposit insurance and credit guarantee corporation or the Reserve Bank of India, to the extent they are so covered;

ii. any project in respect of which performance risks are additionally covered by Government or by any general insurer or any other person or association of persons carrying on the business of insurance, guarantee or indemnity, to the extent they are so covered;

iii. any project, which does not conform to, or is in any way inconsistent with, the provisions of any law, or with any directives or instructions issued by the Central Government or the Reserve Bank of India, which may, for the time being, be in force;

iv. any project proposal by energy service company which has not repaid any portion of the amount due to a PFI (under any other facility extended by PFI), for a guarantee invoked under PRGFEE, or under scheme mentioned under clause (a) or (b) or (c) above;

v. projects covering performance risks under any kind of State government or Central government beneficiary scheme; and

vi. the defaulters listed by Credit Information Bureau (India) Limited or Reserve Bank of India.

3.14 Minimum Eligibility of PFIs to be empanelled with BEE under PRGFEE

i. Should be a scheduled commercial bank (other than regional rural bank)or public financial institutions (registered under section 4A of the Companies Act 1956 (1 of 1956))or non-banking financial companies with the certificate of registration from Reserve Bank of India, registered under the category of non-deposit taking non-banking financial companies, Systemically Important Core Investment Company not raising public deposit or Infrastructure Finance Companies.

ii. Should have a minimum net worth of INR 300 crore or its equivalent in foreign currency in at least two of the last three (3) years

iii. Should be in active business for a minimum period of 5 years and profitable for last 3 years

iv. Should have appraised and sanctioned at least 5 loans for energy savings/ renewable energy projects/ power projects/ infrastructure projects in last three years.

v. Should not be involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract

vi. Should not be black-listed by any Central/ State Government/ Public Sector Undertaking in India

vii. The above points (ii to iv) will not be applicable for Public sector banks (other than regional rural banks).

3.15 Minimum Eligibility of Borrowers for their project to be guaranteed under PRGFEE.

i. No borrower shall be eligible under the PRGFEE unless-

a. the BEE's empanelled energy service company; or
b. the joint venture of energy service companies formed under the laws of India where the BEE's empanelled energy service company shall have share capital of at least 50%,

Provided that the PFI and its affiliates, subsidiaries, joint ventures, associates do not own, separately or in the aggregate, directly or indirectly, more than 10% of the total issued and outstanding share capital of such entity;

ii. the loan proceeds shall be utilized for the purpose of financing an eligible borrower's investment in goods and services intended for the energy efficiency projects.

3.16 Minimum Eligibility of M&V Agency to be empanelled with BEE under PRGFEE.

i. The M&V Agency should have at least one BEE Certified Energy Auditor/Certified Energy Manager/Certified M&V Professional on the team (including Team Leader of the bidding entity with minimum 15 years of experience each)
ii. The M&V Agency should have minimum 5 years of experience in the energy sector (energy efficiency and audit) since its inception and profitable for a minimum of last three years. The team should have a minimum of 5 full-time, permanent personnel.
iii. The turnover of the M& V agency should be in excess of Rs. 1 Crore in the previous three financial years. Also it should have made profits for atleast two years during last three financial years.
iv. Preferably, the M&V Agency should have multiple (more than one) offices across India
v. The M&V Agency should provide its incorporation type and registration number. The M&V Agency should establish that it's incorporation guidelines

does not prohibit it from undertaking role mentioned in clause 3.17.2 of this OM.

vi. The M&V agency should not have any kind of relation with ESCO and Facility owner during last three years.

3.17 Roles and Responsibilities of key stake holders

3.17.1 Roles and responsibilities of PFI

i. PFI shall get empanelled with BEE by signing an MoU with BEE to participate under PRGFEE. The schematic representation of application process for empanelment is at Appendix 11.

ii. The PFI shall evaluate credit applications by using prudent banking judgment and shall use their business discretion/due diligence in selecting commercially viable proposals and conduct appraisal of the borrowers with normal banking prudence. The PFI shall also undertake technical, financial, and economic appraisal of EE loan applications as per the guidelines defined in Operations Manual for PRGFEE

iii. The PFI shall closely monitor the borrower account.

iv. The PFI shall ensure that it can enforce its liability and enter into subsidiary agreement if necessary.

v. The PFI shall sign the EE Loan Agreement with the Borrower.

vi. The PFI shall sign agreement for, and ensure establishment of a Trust and Retention Account (TRA) inter alia with the Borrower and the Trustee Bank (if required)

vii. The PFI shall safeguard the primary securities taken from the borrower in respect of the credit facility in good and enforceable condition.

viii. The PFI shall ensure that the guarantee claim in respect of the credit facility and borrower is lodged with the PRGFEE in the form and in the manner and within such time as may be specified by the PRGFEE in this regard and that there shall not be any delay on its part to notify the default in the borrowers account which may result in the PRGFEE facing higher guarantee claims. The PFI shall not try to raise any claims under the guarantee on the issuer of the PRGFEE guarantees until the verification of claims by the IA has been completed.

ix. The PFI shall submit the application form along with supporting documents to IA for evaluation of proposals under PRGFEE.

x. PFI has to provide all the clarification as desired by IA during evaluation of proposal within stipulated timeline.

xi. shall take guarantee from the PRGFEE before disbursement of loan to the borrower that is ESCO subject to payment of guarantee fees.

xii. The PFI shall submit verification report with complete due diligence to enable the IA to process its claim under the guarantee.

xiii. The payments of guarantee claim by IA or the person designated by it to the PFI does not in any way take away the responsibility of the PFI to recover the entire outstanding amount of the credit from the borrower. The PFI shall exercise all the necessary precautions and maintain its recourse to the borrower for entire amount of credit facility owed to it and initiate such necessary actions for recovery of the outstanding amount, including such action as may be advised by the IA.

xiv. The PFI shall comply with such directions as may be issued by the IA, from time to time, for facilitating recoveries in the guaranteed account, or safeguarding its (its designee's) interest as a guarantor, as the IA may deem fit and the PFI shall be bound to comply with such directions.

xv. The PFI shall, in respect of any guaranteed account, exercise the same diligence in recovering the dues, and safeguarding the interest of IA in all the ways open to it as it might have exercised in the normal course if no guarantee had been furnished by the IA. The PFI shall, in particular, refrain from any acts of omission or commission, either before or subsequent to invocation of guarantee, which may adversely affect the interest of the IA as the guarantor. In particular, the PFI should intimate the IA while entering into any compromise or arrangement which may have effect of discharge of waiver of personal guarantee(s) or security. The PFI shall also ensure either through a stipulation in an agreement with the borrower or otherwise, that it shall not create any charge on the security held in the account covered by the guarantee for the benefit of any account not covered by the guarantee, with itself or in favor of any other creditor(s) without prior approval of the IA. Further the PFI shall secure for the IA, through a stipulation in an agreement with the borrower or otherwise, the right to list the defaulted borrowers' names and particulars on the website of BEE.

xvi. Submit progress report on a quarterly basis to IA, and submit annual performance report to BEE.

xvii. At least one senior officer of empanelled PFIs should attend annual meeting conducted by Implementing Agency to soundboard their experiences and suggestions on successful running of PRGFEE, under the presence of BEE.

xviii. Comply with directions as may be issued by Supervisory Committee, from time to time

xix. If IA/Supervisory Committee want to add any further points under this scope of work, PFI has to adhere to.

xx. The PFI shall be required to follow approved/ notified Rules for operationalization of PRGFEE as well as the Operations Manual prepared for PRGFEE.

3.17.2 Roles and Responsibilities of M&V Agency

i. The M&V agencies will be responsible for conducting an independent assessment of the energy efficiency project and the loss claimed by the lending Financial Institution.

ii. The Scope of Work of the M&V agency appointed to be acted upon in case of a claim under the PRGFEE guarantee is detailed in the following three major Tasks under which there are specified sub-tasks.

A. Task 1: Pre-site visit desk review:

a. Review the project design including the EE measures implemented

b. Review the M&V protocols for the project, as per the energy services agreement between the ESCO and the project host.

c. Review the baseline data and any measurements conducted and reported by the ESCO or project host prior to and post implementation

d. Review any M&V reports submitted to the IA

e. Comment on the efficacy and appropriateness of the M&V protocols and the related definition of the baseline and pre- and post-installation data collection and measurements relative to the energy efficiency measures implemented

f. Review any documented reasons for non-performance of the implemented energy efficiency measures and non-repayment of the loan

g. Prepare a report on initial observations regarding shortcomings (if any) and efficacy of the EE measures and M&V methodology for the project.

B. TASK 2: Site visit and interviews with concerned ESCO and Project Host

a. Conduct site visit at the location of the project host to identify and document:

i. definition of the baseline

ii. physical inspection of EE measures implemented

iii. measurement approach used for defining the baseline and the post-installation energy consumption

iv. periodic reports prepared by the ESCO or project host on post-installation performance, if any

v. data collection systems implemented, including any metering

vi. application of the agreed upon M&V protocols

vii. reasons for non-performance or poor performance of the EE measures, if any.

b. Conduct any additional measurements and inspections of the energy efficiency measures a data collection and metering, as appropriate.
c. Conduct interviews with the concerned project host, ESCO and any other parties involved in the implementation process to identify any issues with the implementation and performance of the energy efficiency measures.
d. Conduct interviews with the Participating Financial Institution (PFI) that has provided the loan to the project.
e. Document clearly the loss claimed by the PFI against the PRGFEE guarantee and identify the main reasons for such loss.

C. TASK 3: Detailed Assessment and Submission of Report

a. Performa detailed assessment of the results of the site visit and define any unresolved questions/ issues.
b. Conduct a common meeting with all stakeholders, i.e., project host, ESCO, PFI and any others involved in the implementation and M&V process as well as the IA to discuss any issues and questions and review the overall findings of the site visit and the interviews conducted.
c. Prepare a detailed Draft Final Report based on the overall findings of the site visit, meetings and discussions, assessments and analyses, and recommendations for the IA regarding the validity of the claim against the PRGFEE guarantee.
d. Incorporate comments as appropriate and prepare Final Report.

3.17.3 Roles and Responsibilities of IA

The following are the functions of the implementing agency, namely:-

i. assist the BEE in scrutinizing and evaluating the documents submitted by PFI for empanelment with BEE under PRGFEE and submit recommendations to BEE;

ii. appraise guarantee applications of PFI with respect to guidelines approved by Supervisory Committee, and sign the guarantee agreement either by itself or through its designee with the participating financial institution on receipt of the guarantee application, along with the guarantee fee, and other supporting documents;

iii. be independent of the appraisal carried out by the PFI, and of the development of the project by the eligible borrower;

iv. shall assess and review the progress reports and statement of accounts provided by the PFI on utilisation of the fund and in case of any deviations from the agreement, accordingly bring them to the notice of the Supervisory Committee in each quarter;

v. update the Supervisory Committee, in every Supervisory Committee meetings, on the progress of the scheme (including guarantees committed or claimed, and other updates) since previous meeting and also submit a quarterly report to BEE regarding the progress and status of scheme;

vi. shall each year issue an audited report setting out the accounts showing the income and expenditure under PRGFEE;

vii. to collect guarantee fee and application fee from PFI and deposit it into PRGFEE Administrative Account, which shall be managed by BEE for administrative use such as empanelment process, for consultant fee, for administrative fee of IA, for media or workshop or seminar or conference cost, for M&V agency fee, and for other administrative expense of Project team of BEE;

viii. obliged to pay only a quarterly interest at RBI's prevailing repo rate minus 2% (200 bps) (treasury charges – for meeting cost of any taxes on the interest earned by IA) on the balance of PRGFEE Fund account maintained by the IA. This quarterly interest on corpus amount shall be deposited in the PRGFEE Administrative Account for the purposes of enabling BEE to meet administrative expenses. In this regard BEE has represented to IA that pursuant to Section 49 of the Act, BEE has been exempted from tax on its income or profits and accordingly, IA shall not be liable to deduct any tax at source. However, in the event any action is taken against the IA in this regard by any relevant authority BEE shall provide the necessary support to IA to defend such an action and to indemnify IA;

ix. conduct random due diligence on the appraisal documents on a sample of energy efficiency loans disbursed by PFI and cancel the risk cover for that particular energy efficiency loan, if deviations are found;

x. appoint independent M&V agency empanelled by BEE on receipt of Guarantee Claim from PFI, which shall be based on the rates subsequently decided by BEE and shared with IA;

xi. the cost of M&V agency shall be reimbursed to implementing agency by BEE;

xii. process the guarantee claim procedure and, if found appropriate and mutually agreeable based on the report submitted by the M&V agency, provide the guarantee coverage;

xiii. convene an annual meeting with the empanelled PFI to soundboard their experiences and suggestions on successful running of PRGFEE;

xiv. market PRGFEE both with PFI and the end users and energy service company to ensure their participation, and prepare pipeline of projects;

xv. be responsible for preparation of marketing material and education of potential stakeholders about the Fund;

xvi. shall provide a written assurance, along with the institutional structure relating to the independence of implementing agency staff from the review, appraisal and financing of the projects that are put up for guarantee facility to PRGFEE. Further, total guarantees provided to the IA itself under PRGFEE (where any of the members of the Consortium acts as a PFI) shall be limited to 10% (in aggregate) of the total fund value.

3.17.4 Roles and responsibilities of BEE

i. Act as the nodal agency for PRGFEE;

ii. Regularly update the list of BEE's empanelled energy service companies on the BEE's website;

iii. Appoint implementing agency which shall be a public financial institution or a consortium of entities including a public financial institution selected through competitive bidding;

iv. Regularly monitor the performance of implementing agency, and in case of any non-performance on the part of implementing agency the BEE shall impose penalty on implementing agency;

v. Empanel M&V agency by signing memorandum of understanding with them, and fix the lowest rates on which the implementing agency shall be paying to the measurement and verification agency for their services and the same shall be reimbursed to implementing agency by BEE;

vi. Empanel the participating financial institutions under PRGFEE by signing memorandum of understanding with them;

vii. Carryout annual visits to few projects (selected on random sampling basis) being covered under PRGFEE and submit reports to Supervisory Committee;

viii. Manage the PRGFEE administrative account with the approval of Director General, BEE and utilise it for administrative use like for empanelment process, for consultant fee, for administrative fee of implementing agency, for media or workshop or seminar or conference cost, for M&V agency fee, and for other administrative expense of project team of BEE;

ix. Utilise maximum five percent of the total corpus of PRGFEE for Energy Efficiency may be utilized to meet administrative expense related with the fund provided that, interest on corpus amount along with guarantee fee and application fee shall also be utilised for meeting administrative expense.

3.17.5 Roles and responsibilities of Supervisory Committee (SC)

i. The Supervisory Committee is the apex body providing guidance as well as monitoring progress in PRGFEE.

ii. Provide approvals and take decisions on matters of policy, modification of rules, and PFI compliance as and when they arise.

iii. To approve Operations Manual for PRGFEE covering detailed roles and responsibilities of all the stakeholders including IA, Participating Financial Institution, Borrower (ESCO) and Beneficiary, and other documents required for operationalization of PRGFEE along with guarantee approval as well as guarantee claim procedure.

iv. Regularly review the lending performance and process compliance of the empanelled PFIs and take decision on potential de-empanelment of a particular PFI from PRGFEE for any reason whatsoever.

v. Committee shall meet at least once in each quarter to monitor the funds being managed by IA and approve the fund money which would be transferred from BEE to IA.

vi. Maximum 5% of the total corpus of PRGFEE may be utilized to meet administrative expenses related with the fund. Both Guarantee fee and Application fee shall be deposited in PRGFEE fund and would be utilized for administrative expense in addition to 5% of the total corpus of the PRGFEE fund.

4 PROJECT APPRAISAL UNDER PRGFEE:

4.1 Application for Assistance

The applicant seeking financial assistance for an EE project is required to furnish details as per prescribed EE loan application form (Appendix 1).

The Energy Audit Report and the project feasibility report should be enclosed with the EE loan application.

4.2 EE Project Appraisal

Post submission of the application form, IA would formally register the application.

Detailed project appraisal, which would entail the following:

1. Appraisal of PFI, ESCO, Facility owner
2. Technical appraisal of the documents (DPR, ESCO Agreement, M&V Document etc.)
3. Financial Appraisal of the project
4. Environmental Appraisal
5. Economic Appraisal
6. Legal Appraisal

4.3 Appraisal of ESCO

The promoter/ Promoter Company/ company's background, creditworthiness, track record and their past dealings with institutions/ banks should be ascertained. A proper evaluation of the promoter/ Promoter Company is an important part of the overall EE project appraisal.

Also since every bank has its own unique company appraisal mechanism, individual banks could use their respective company appraisal mechanism when appraising a new customer/promoter. However, an indicative checklist to facilitate promoter appraisal is given below. An indicative framework for promoter information has also been included in the Application Form.

4.4 Technical appraisal of the documents (DPR, ESCO Agreement, M&V Document etc.)

The technical appraisal of an EE project would primarily focus on three fundamental issues:

1. Are the projected energy saving realistic? Is the basis of calculation appropriate?

2. Which technology will be used for the EE project, and whether it fits with the existing technology/processes at the facility?

3. Are there any drawbacks like impact on production or production schedules during implementation of the project?

4.5 Financial Appraisal of the project

Financial Appraisal of an EE project would review the estimated cost of the project, proposed means of financing, financial and cash flow projections, viability parameters and sensitivity analysis (see Appendix4). The past record of the promoters should also be examined with reference to financial statements viz. profit &Loss Account; balance sheet and cash flows for the at least the past three years.

i. Project cost

The various components of the project cost submitted by the borrower should be thoroughly examined as also the basis of the cost estimates. Realistic estimates should be used so as to prevent cost over-runs and or to avoid over estimation of costs.

The main components of the project costs and key issues to be considered during appraisal are discussed below:

I. Pre-operative and preliminary expenses
II. Equipment cost
III. Design and Engineering Fees and project implementation charges
IV. Interest during construction period
V. Contingencies

ii. Means of Financing

The proposed means of financing of an EE project should be reviewed so as to assess whether the project is funded adequately, and whether the proposed capital structure for funding the project is in line with the bank's credit guidelines and policies. Some of the important sources of finance for an EE project are defined below:

I. Promoters Contribution: A certain percentage of the capital cost of the project should be met by promoters contribution to ensure that they have a reasonable stake in and commitment to the project promoters contribution could be in the form of:
   a. Equity-share capital or unsecured loans from promoters/associates
   b. Internal Accrual from the existing company
II. Term Loans: in cases where the project is to be funded by a consortium of lenders, it should be ensured that the other expected

sources of loans are properly tied up, since any gap in the project funding would adversely affect the project.

iii. Profitability projections/ project cash flow:

Profitability estimates, projected cash flow and balance sheet should be prepared for both the specific EE project (s) and the company as a whole. The projections should cover the entire duration of the loan.

Key Assumptions:

I. Capacity Utilization: For a retrofit EE project, the present/ immediate past level of capacity utilization achieved by the company would be a good benchmark.

II. Estimated Energy Savings: Estimation of Energy Savings of this manual for a checklist of items to be reviewed on the calculation on energy savings. Average industry energy consumption per unit of output produced, if available, may be a good benchmark for projected average energy consumption per unit of output produced post-EE implementation at the plant/facility. However, difference may still exist on account of plant/facility specific factors like age of the plant, the conditions prevailing in the facility capacity utilization etc.

III. Operating, maintenance and repair (OM&R) expenses

OM&R expenses for an EE project may include the following:

- Equipment replacement costs
- Manpower costs
- Cost for spares and tool

iv. Financial Viability parameters

The viability parameters recommended for EE projects could be divided into:

1 Key financial parameters: Include Internal Rate of Return (IRR), Debt Service Coverage Ratio (DSCR), Debt-Equity Ratio, and Asset Coverage Ratio

2 Other financial parameters: Payback period, Interest Coverage Ratio, and Net Cash Accrual Ratio.

4.6 Environmental Appraisal

The environmental appraisal assesses the pollution level of the given facility post EE project implementation, and compares the same with the level pre implementation of the EE project. In case, where pollution level increases post-EE implementation requisite environmental clearances may be required.

I. Government Notification:

The ministry of Environment & Forests is the apex body in the administrative structure of the Central Government, for the planning, promotion, co-ordination and overseeing of the implementation of environmental programmes.

Ministry of Environment and Forests (MOEF) notifications S.O. 60 (E), dated 27/01/1994 on Environment Impact Assessment and its subsequent amendments vide S.O. 356 (E) dated 4/5/1994, S.O. 318(E) dated 10/4/1997, S.O. 319 dated 10/4/1997, S.O. 73 (E) dated 27/1/2000, S.O. 1119 (E) dated 13/12/2000, S.O. 737 (E) dated 1/8/2001, S.O. 1148 (E) dated 21/11/2001, S.O. 632 (E) dated 13/06/2002 states.

"expansion or modernization or new project of any activity if pollution load is to exceed the existing one shall not be undertaken in any part of India unless it has been accorded environmental clearances by central government in accordance with the procedure hereinafter specified in this notification"

II. Compliance with Statutory Requirements:

The PFI shall implement the procedures to ensure that each approved project complies with the environmental, health and safety standards.

Energy efficiency retrofit projects are modernization projects as they modernize the projects as they modernize the existing facility by improving processes, installing energy efficiency equipments, converting wasted energy to useful energy etc.

4.7 Economic Appraisal

IA will appraise the economic benefits of the project at macro level (see Appendix 7).

4.8 Legal Appraisal

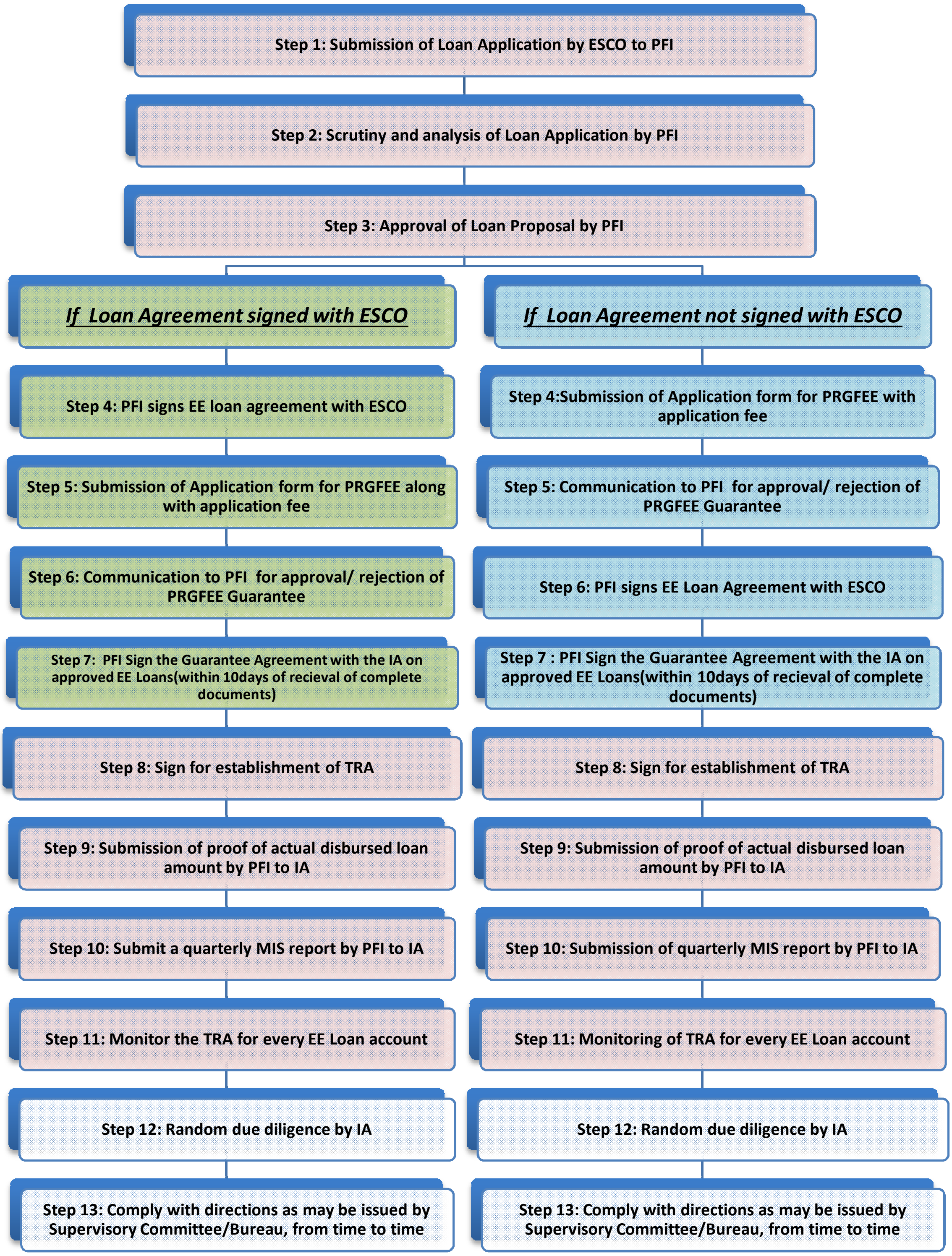
Prior to proving the guarantee IA should ensure that all necessary legal documentation is completed.

5 GUARANTEE PROCESS

5.1 Guarantee issuance process

The IA shall be required to follow the due process and appraisal guidelines/norms as contained herein prior to issuance of PRGFEE guarantees in favour of the PFIs.

Once IA approves the project for issuance of PRGFEE guarantees, it shall either issue PRGFEE guarantees by itself or instruct the relevant bank appointed by it to issue the PRGFEE guarantees in favour of the PFIs. The IA shall not be required to issue PRGFEE guarantees or incur any other financial obligation beyond the amount of PRGFEE fund available with it at any time. Broadly, the following steps would be followed with respect to issuance of PRGFEE Guarantees (unless otherwise permitted by the IA on a case to case basis):



Step 1: Submission of Loan Application by ESCO

Empanelled ESCO approaches the empanelled PFI with a request for a loan for establishing an energy efficient project. Amongst other information, the request would be accompanied by the letter of acceptance from the project facility owner accepting the proposal for establishing the energy efficient project at the project facility of the facility owner and ESCO Performance Contract.

Step 2& 3: Scrutiny and analysis of Loan Application by PFI and subsequent approval/rejection of loan application

PFI after conducting necessary due diligence and appraisal of the Project as per the energy efficient project appraisal and monitoring policy of the PFI (as communicated to the IA and BEE from time to time) accepts/rejects the loan application and if approved issues the in-principle sanction letter approving the Loan Amount on the terms and conditions contained therein. In case of rejection the project shall not be referred to PRGFEE.

Process explained from step 1 to 3 above will remain same and rest of the process to be followed on case to case basis as illustrated in table below

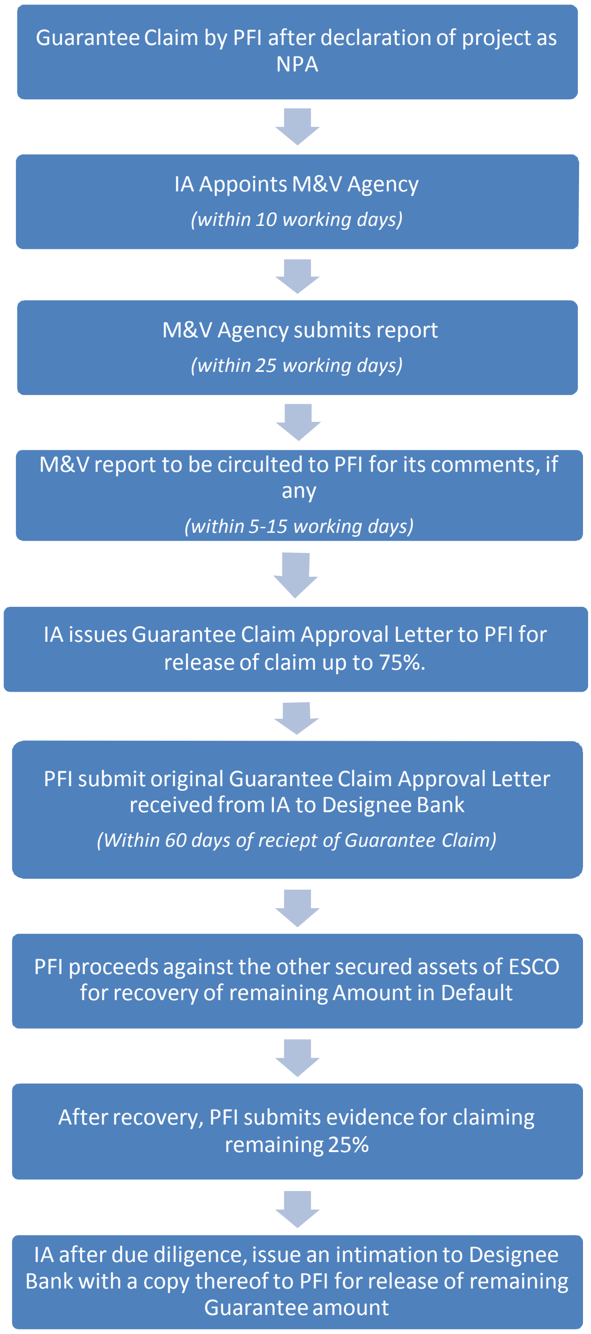
If Loan Agreement signed with ESCO	***If Loan Agreement not signed with ESCO***
Step 4 : PFI signs EE loan agreement with ESCO Thereafter, the PFI will sign the loan agreement with ESCO for the sanctioned amount. However, no disbursement be made under the said loan in case of seeking guarantee under PRGFEE. ESCO would also enter into agreement with the facility owner where Energy Efficiency project would be implemented.	**Step 4 : Submission of Application form for PRGFEE with application fee** Simultaneously or thereafter, PFI applies to IA (along with the applicable Application Fee in accordance with the terms hereof) for seeking support of the PRGFEE guarantee available under PRGFEE towards lending for the Project, by submitting an Appraisal Report and essential information as required by IA for approval of the PRGFEE guarantee. IA after completing the necessary due diligence based on the information submitted by PFI approves (or rejects) the amount for which PRGFEE Guarantee could be issued in favour of the PFI.
Step 5 : Submission of Application form by PFI to IA for PRGFEE along with application fee	**Step 5:Communication to PFI for approval/ rejection of PRGFEE Guarantee** If approved, communicates

PFI applies to IA (along with the applicable Application Fee in accordance with the terms hereof) for seeking support of the PRGFEE guarantee available under PRGFEE towards lending for the Project, by submitting an Appraisal Report and essential information as required by IA for approval of the PRGFEE guarantee.	the same to the PFI vide its approval letter.
Step 6:Communication to PFI for approval/ rejection of PRGFEE Guarantee If approved, IA communicates the same to the PFI vide its approval letter.	**Step 6: PFI signs Loan Agreement with ESCO** Pursuant thereto PFI signs the Loan Agreement with ESCO.
Step 7 : PFI signs the Guarantee Agreement with the IA on approved EE Loans Based on the detailed evaluation, the project would be considered for granting guarantee. The share of guarantee would be decided by IA based on the eligibility and evaluation of the project within 10 working days of receipt of the same and sign the Guarantee Agreement(s) with PFI supported by a Bank Guarantee (substantially in the format provided in Appendix 3 hereto and upon receipt of the Guarantee Fee). In case of non-adherence for a particular EE Loan, Implementing agency will intimate the PFI and provide a period of 10 working days to resubmit the completed documentation. In case the resubmitted documentation by the PFI, within the specified timelines, is complete, the IA will sign the Guarantee Agreement(s) for the	**Step 7: PFI signs the Guarantee Agreement with the IA on approved EE Loans** Pursuant to signing of Loan agreement, simultaneously or thereafter, PFI and IA execute the Guarantee Agreement supported by a Bank Guarantee (substantially in the format provided in Appendix 3 hereto and upon receipt of the Guarantee Fee). The share of guarantee would be decided by IA based on the eligibility and evaluation of the project within 10 working days of receipt of the same. In case of non-adherence for a particular EE Loan, Implementing agency will intimate the PFI and provide a period of 10 working days to resubmit the completed documentation. In case the resubmitted documentation by the PFI, within the specified timelines, is complete, the IA will sign the Guarantee Agreement(s) for the respective EE Loan, else, that particular EE Loan will

respective EE Loan, else, that particular EE Loan will not be covered under PRGFEE.	not be covered under PRGFEE.
Step 8: Sign for establishment of TRA The PFI shall sign agreement for, and establishment of a Trust and Retention Account (TRA) inter alia with the ESCO the Beneficiary and the Trustee Bank (if required)	**Step 8: Sign for establishment of TRA** The PFI shall sign agreement for, and establishment of a Trust and Retention Account (TRA) along with the ESCO and the Beneficiary and the Trustee Bank (if required).
Step 9: Submission of proof of actual disbursed loan amount by PFI to IA Regular Loan a/c statement has to be submitted by PFI to IA for the particular EE loan.	**Step 9: Submission of proof of actual disbursed loan amount by PFI to IA** Regular Loan a/c statement has to be submitted by PFI to IA for the particular EE loan.
Step 10: Submission of quarterly MIS report by PFI to IA The PFI shall submit progress report on a quarterly basis to IA, and submit annual performance report to BEE.	**Step 10: Submission of quarterly MIS report by PFI to IA** The PFI shall submit progress report on a quarterly basis to IA, and submit annual performance report to BEE.
Step 11: Monitor the TRA for every EE Loan account The PFI shall ensure interest and principal repayment, as per terms and conditions of the Loan Agreement, through the TRA.	**Step 11: Monitor the TRA for every EE Loan account** The PFI shall ensure interest and principal repayment, as per terms and conditions of the Loan Agreement, through the TRA.
Step 12: Random due diligence by IA IA shall conduct random due diligence on the appraisal documents on a sample of EE loans disbursed by PFIs and cancel the risk cover for that particular EE loan, if deviations are found, wherein project becomes ineligible for being granted any	**Step 12: Random due diligence by IA** IA shall conduct random due diligence on the appraisal documents on a sample of EE loans disbursed by PFIs and cancel the risk cover for that particular EE loan, if deviations are found, wherein project becomes ineligible for being granted any guarantee coverage or borrower is found

guarantee coverage or borrower is found to be fraudulent.	to be fraudulent.
Step 13: Comply with directions as may be issued by Supervisory Committee/ BEE, from time to time	**Step 13**: Comply with directions as may be issued by Supervisory Committee/ BEE, from time to time

5.2 Guarantee claim process



Step 1: Submit the Guarantee Claim Form, as prescribed in the OM, to IA within a maximum period of one year from date of declaration of the project as Non-

Performing Assets (NPA) providing all the necessary details in relation to the Project, loan account etc. including the claim of PFI against PRGFEE Guarantee calculated in accordance with the illustration provided in 5.2.1 below ("**Claim Amount**").

Step 2: IA will appoint an Independent M&V Consultant within 10 working days from the date of receipt of Guarantee Claim Form from the PFI, to assess the default in the EE Loan.

Step 3:IA will ensure that the M&V report is submitted within 25workingdays of appointment of the Independent M&V Consultant and future processing of the Guarantee Claim will depend on this M&V report. A copy of the M&V report will be circulated to the concerned PFI for its comments; and

- In case, no comment is received within 5 working days of receipt of the report, it would be deemed that the M&V report is final and legally binding on all the concerned parties;
- The comments/ objections, if any, would be formally discussed and mutually agreed between Independent M&V Consultant, and the PFI, within 15workingdays of submission of the Guarantee Claim Form.
- Based on the mutual agreement on the M&V report, IA will decide on the processing of the Guarantee Claim.

Step 4: In case, the Guarantee Claim is found to be fraudulent, or in the event of serious deficiencies, such as inadequate appraisal/ renewal/follow-up/conduct of the project or multiple lodgment of claim, or suppression of any material information for the settlement of claims, etc., the IA will issue a letter communicating the rejection of the Guarantee Claim to the PFI and the Issuing Bank ("**Guarantee Claim Rejection Letter**") and will propose to Supervisory Committee for de-empanelment of the PFI from PRGFEE for future Guarantee Application (s) new EE Projects, while continuing other existing EE Projects under PRGFEE with the PFI. In case, the Guarantee Claim is determined to be genuine, IA shall communicate its acceptance thereof and approving the release of up to the maximum extent of 75% of the Claim Amount (kindly refer to the illustrations provided under 5.2.1 for the relevant calculation) in accordance with the terms of the OM by issuing a letter to the PFI and the Issuing Bank ("**Guarantee Claim Approval Letter**").

Step 5: The PFI shall thereafter, submit the demand certificate (*along with the original of the Guarantee if so required by the Issuing Bank*) and the original of the Guarantee Claim Approval Letter received by it from the IA with the Issuing Bank, pursuant to which the Issuing Bank shall promptly process the release of the amount stated in the Guarantee Claim Approval Letter without further scrutiny of the Guarantee Claim.

Step 6: The PFI shall thereafter proceed ESCO for recovery of the remaining Amount in Default (not covered by the Guarantee) and the proceeds of the same shall be distributed on *pro rata* basis amongst the PRGFEE and the PFI in accordance with the terms of the OM.

Step 7: Upon the completion of the recovery process from the ESCO and the consequent *pro rata* distribution of the proceeds of such recovery, the PFI shall submit the necessary Guarantee Claim Form along with the relevant documentary evidence and all other information as may be sought by the IA, towards release of the remaining Claim Amount (being 25% of the Claim Amount).

Step 8: The IA shall undertake appropriate due diligence of the documents submitted by the PFI and if found appropriate shall issue an intimation to the Issuing Bank with a copy thereof to the PFI for the release of the remaining Claim Amount (being 25% of the Claim Amount) to the PFI and the Issuing Bank. Pursuant thereto the Issuing Bank shall promptly process the release of the amount stated therein without further scrutiny of the Guarantee Claim and the Issuing Bank and/or the IA shall have no further obligations hereunder or under the Guarantee.

5.2.1 Illustrations of Guarantee claim

Illustration 1: (CLAIM AMOUNT CALCULATION WHERE CLAIM AMOUNT IS EQUIVALENT TO FIRST LOSS UNDER PRGFEE GUARANTEE)

A.	Loan Amount	Rs. 100 Lakh
B.	Actual Disbursed Loan Amount	Rs. 80 Lakh
C.	PRGFEE Guarantee Limit (in percentage)	40% of B
D.	PRGFEE Guarantee Limit (amount)	Rs. 32 Lakh
E.	Outstanding Loan Amount at the time of declaration of NPA	Rs. 3.2 Lakh
F.	Calculation of Claim Amount under PRGFEE Guarantee	10% of D (First Loss) + 40% of NIL (Liability for the remaining outstanding amount (i.e., E minus amount covered under First Loss above) to be covered proportionately between PFI and PRGFEE. In this case this amount will be NIL as no amount will be outstanding after taking account First Loss

		above.) = 3.2 + 0 = Rs. 3.2 Lakh
G.	75% of the Claim Amount to be settled within 60 days of receipt of the Guarantee Claim Form	Not Applicable (Reason: As entire Claim Amount is covered under First Loss itself, the entire Claim Amount shall be settled within 60 days of receipt of the Guarantee Claim Form)
H.	25% of the Claim Amount to be paid on conclusion of recovery proceedings by the PFI and the same being credited to PRGFEE on a proportionate basis	Not Applicable (Reason: As entire Claim Amount is covered under First Loss itself, the entire Claim Amount shall be settled within 60 days of receipt of the Guarantee Claim Form)

Illustration 2: (REGULAR MODEL)

A.	Loan Amount	Rs. 100 Lakh
B.	Actual Disbursed Loan Amount	Rs. 80 Lakh
C.	PRGFEE Guarantee Limit (in percentage)	30% of B
D.	PRGFEE Guarantee Limit (amount)	Rs. 24 Lakh
E.	Outstanding Loan Amount at the time of declaration of NPA	Rs. 62 Lakh
F.	Calculation of Claim Amount under PRGFEE Guarantee	10% of D (First Loss) + 30% of 59.6 (Liability for the remaining outstanding amount (i.e., E minus amount covered under First Loss above) to be covered proportionately between PFI and PRGFEE) = 2.4 + 17.88 = Rs.

		20.28Lakh
G.	75% of the Claim Amount to be settled within 60 days of receipt of the Guarantee Claim Form	75% of Rs. 20.28= Rs.15.21 Lakh (settled within 60 days of receipt of the Guarantee Claim Form)
H.	25% of the Claim Amount to be paid on conclusion of recovery proceedings by the PFI and the same being credited to PRGFEE on a proportionate basis	25% of Rs. 20.28= Rs.5.07 Lakh (paid on conclusion of recovery proceedings by the PFI and the same being credited to PRGFEE on a proportionate basis)

Illustration 2: (Total loan amount disbursed and stands outstanding at the time of Guarantee Claim)

There may be a scenario in which PFI avails PRGFEE's guarantee on certain EE loan, total loan amount disbursed and stands outstanding at the time of Guarantee Claim

A.	Loan Amount	Rs. 100 Lakh
B.	Actual Disbursed Loan Amount	Rs. 100 Lakh
C.	PRGFEE Guarantee Limit (in percentage)	40% of B
D.	PRGFEE Guarantee Limit (amount)	Rs. 40 Lakh
E.	Outstanding Loan Amount at the time of declaration of NPA	Rs. 100 Lakh
F.	Calculation of Claim Amount under PRGFEE Guarantee	10% of D (First Loss) + 40% of 96 (Liability for the remaining outstanding amount (i.e., E minus amount covered under First Loss above) to be covered proportionately between PFI and PRGFEE) = 4 + 38.4 = Rs. 42.4Lakh, However as it is exceeding the maximum guaranteed amount, the

		PFI can claim an amount of Rs. 40Lakhs only of which Rs.4Lakhs shall be covered as first-loss and Rs. 36Lakhs as liability for remaining outstanding to be covered under PRGFEE.
G.	75% of the Claim Amount to be settled within 60 days of receipt of the Guarantee Claim Form	75% of Rs.36.00 Lakh= Rs.27 Lakh (settled within 60 days of receipt of the Guarantee Claim Form)
H.	25% of the Claim Amount to be paid on conclusion of recovery proceedings by the PFI and the same being credited to PRGFEE on a proportionate basis	25% of Rs. 36Lakh= Rs.9 Lakh (paid on conclusion of recovery proceedings by the PFI and the same being credited to PRGFEE on a proportionate basis)

6 MEASUREMENT & VERIFICATION

6.1 About Measurement and Verification (M&V)

"*Measurement and Verification*" (*M&V*) is the process of using measurement to reliably determine actual *savings* created within an individual facility by an energy management program. *Savings* cannot be directly measured, since they represent the absence of *energy* use. Instead, *savings* are determined by comparing measured use before and after implementation of a project, making appropriate adjustments for changes in conditions.

M&V activities consist of some or all of the following:

- meter installation calibration and maintenance,
- data gathering and screening,
- development of a computation method and acceptable estimates,
- computations with measured data, and
- Reporting, quality assurance, and third party verification of reports.

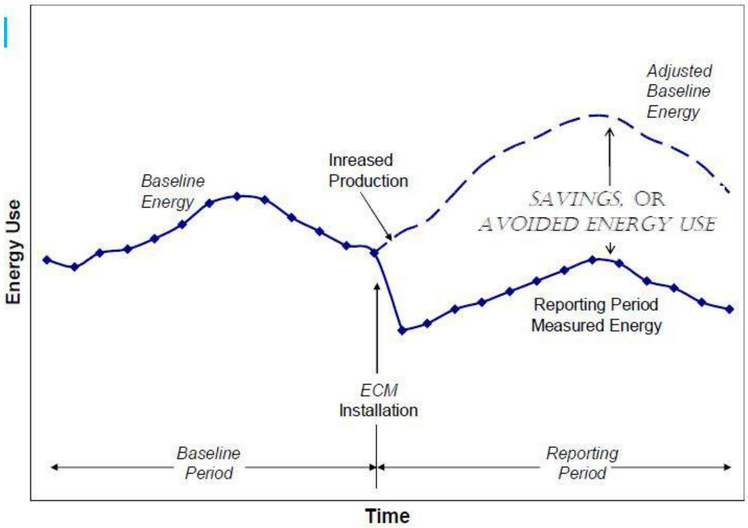
When there is little doubt about the outcome of a project, or no need to prove results to another party, applying *M&V* methods to calculate savings may not be necessary. However, it is still wise to verify (initially and repeatedly) that the installed equipment is able to produce the expected savings. Verification of the potential to achieve *savings* is referred to as *operational verification*, which may involve inspection, commissioning of equipment, functional performance testing and/or data trending. IPMVP-adherent *M&V* includes both *operational verification* and an accounting of *savings* based on site energy measurements before and after implementation of a project, and adjustments, as described above.

M&V is not just a collection of tasks conducted to help a project meet IPMVP requirements. Properly integrated, each M&V task serves to enhance and improve facility operation and maintenance of savings. M&V activities overlap with other project efforts(e.g. collecting data to both identify ECMs and establish energy baselines, commissioning and operational verification of installed ECMs, and installing monitoring systems to track and maintain savings persistence, etc.). Identifying these project synergies and establishing roles and responsibilities of involved parties during project planning will support a coordinated team effort. This can leverage complementary scopes and control M&V-related costs.

Process Timeline		
Plan Identify ECMs Document baseline energy Plan and coordinate M&V activities Design ECMs	Install Install ECMs Commission Verify Operations	Maintain Gather data Verify Savings Report Document project feedback Assure persistence

6.2 International Performance Measurement & Verification Protocol(IPMVP) Framework

Energy demand *savings* cannot be directly measured, since *savings* represent the absence of energy use or demand. Instead, *savings* are determined by comparing measured use or demand before and after implementation of a program, making suitable adjustments for changes in conditions.



As an example of savings determination process, above Figure shows the energy-usage history of an industrial boiler before and after the addition of an energy conservation measure (ECM) to recover heat from its flue gases. At about the time of ECM installation, plant production also increased.

To properly document the impact of the ECM, its energy effect must be separated from the energy effect of the increased production. The "baseline energy" use pattern before ECM installation was studied to determine the relationship between energy use and production.

Following ECM installation, this baseline relationship was used to estimate how much energy the plant would have used each month if there had been no ECM (called the "adjusted-baseline energy"). The saving, or 'avoided energy use' is the difference between the adjusted-baseline energy and the energy that was actually metered during the reporting period. Without the adjustment for the change in production, the difference between baseline energy and reporting period energy would have been much lower, under-reporting the effect of the heat recovery.

It is necessary to segregate the energy effects of a savings program from the effects of other simultaneous changes affecting the energy using systems. The comparison of before and after energy use or demand should be made on a consistent basis, using the following general Equation:

Savings = (*Baseline Period Use* or Demand –*Reporting Period Use* or Demand) ± Adjustments

The "Adjustments" term in this general equation is used to **re-state the use or demand of the *baseline* and *reporting periods* under a common set of conditions**. This adjustments term distinguishes proper *savings* reports from a simple comparison of cost or usage before and after implementation of an *energy conservation measure* (*ECM*). Simple comparisons of utility costs without such adjustments report only cost changes and fail to report the true performance of a project. To properly report "*savings*," adjustments must account for the differences in conditions between the *baseline* and *reporting periods*.

The baseline in an existing *facility* project is usually the performance of the *facility* or system prior to modification. This baseline physically exists and can be measured before changes are implemented. In new construction, the baseline is usually hypothetical and defined based on code, regulation, common practice or documented performance of similar *facilities*. In either case, the baseline model must be capable of accommodating changes in operating parameters and conditions so "adjustments" can be made.

For Greenfield Energy Efficiency projects, the baseline energy use can be modeled, as no energy use data exists prior to implementation. Here, Greenfield projects are defined as the start-up projects, where the investment starts with a bare site in a Greenfield. In case of Greenfield projects the promoters shall be required to prepare pre-feasibility study for the smooth functioning of the project and the baseline energy use can be inferred with due consideration of the following on energy usage:

- **Energy regulations, codes, standards and policy**– The use of available energy regulations, codes, and standards is encouraged in order to provide a convenient, clearly defined, and consistent baseline energy use.
- **Common practice** – under certain circumstances, the use of "standard practice" or "market standard" may be more appropriate for baseline development. The key issue is to have the actual baseline development process well-documented and replicable.
- **Comparison with similar systems/projects (eg. buildings) without any of the proposed energy savings measures implemented** –A similar system or facility which already exists in close proximity or with comparable conditions to the Greenfield project could be used for assessment of baseline energy use.

In buildings, the baseline can be determined by means of a detailed computer simulation method. This method is applied when no baseline data exists for measurements and these simulation tools are already available in India.

Regardless of the M&V strategy used, similar steps are taken to verify the potential for the installed energy conservation measures (ECMs) to generate savings. Verifying the potential to generate savings can also be stated as confirming that:

- The baseline conditions were accurately defined
- A suitable project specific M&V plan was developed
- Proper equipment/systems were installed and are performing to specification
- The equipment/systems continue to have the potential to generate the predicted savings

6.3 Responsibilities and Tasks of the M&V Agencies:

Details of the roles and responsibilities of M&V Agencies are mentioned in clause 3.19.2 in this OM.

7 ENERGY SAVINGS PERFORMANCE CONTRACT

Offering the complete range of energy services has been suggested as the solution to increasing the pace of adoption and implementation of energy efficiency projects in the country. ESCOs have made significant contributions to the growth of energy efficiency business globally. Under the ESCO model, ESCOs provide a range of services, including energy analysis, design, installation, financing, and maintenance of the energy management and other technologies. ESCOs may also offer business and financing models under which customers effectively pay for the energy services from a portion of actual energy savings achieved. ESCOs receive payments based on demonstrable results (that satisfy the performance guarantees provided by the ESCO). In most ESCO models, a large part of the project risks are assumed by the ESCO.

7.1 Purpose of the contract

A performance contract guarantees that the cost savings from an energy efficiency improvements project will pay for the costs of the improvements at a facility.

ESCO Implementation model

The growth rate of the ESCO market in India has been very slow. The ESCOs face several constraints in their operations, in obtaining finances, besides facing credibility issues with clients. BEE has come forward with an empanelment scheme for ESCOs to promote energy efficiency through credible ESCOs. BEE has empanelled 125 ESCOs following a due process.