



Energy Efficiency Programme for Small and Medium Enterprises (SMEs)

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BEE's initiatives in SME sector

BEE-SME program

EE Technology
Demonstration through
direct back ended
subsidies to units

Capacity Building
Workshops

Energy Mapping
Performance
Banchmarks

GEF-UNIDO-BEE

Promoting energy
efficiency and renewable
energy in selected MSME
clusters in India

(12 SME Clusters)

Increase capacity &
Demand of EE –Product
and Services

Strengthening policy,
institutional and decision
making frameworks in the
country

GEF-WB –BEE

Increase demand for EE
investment in targeted clusters ,
Build their capacity to access
commercial finance.

5 Clusters

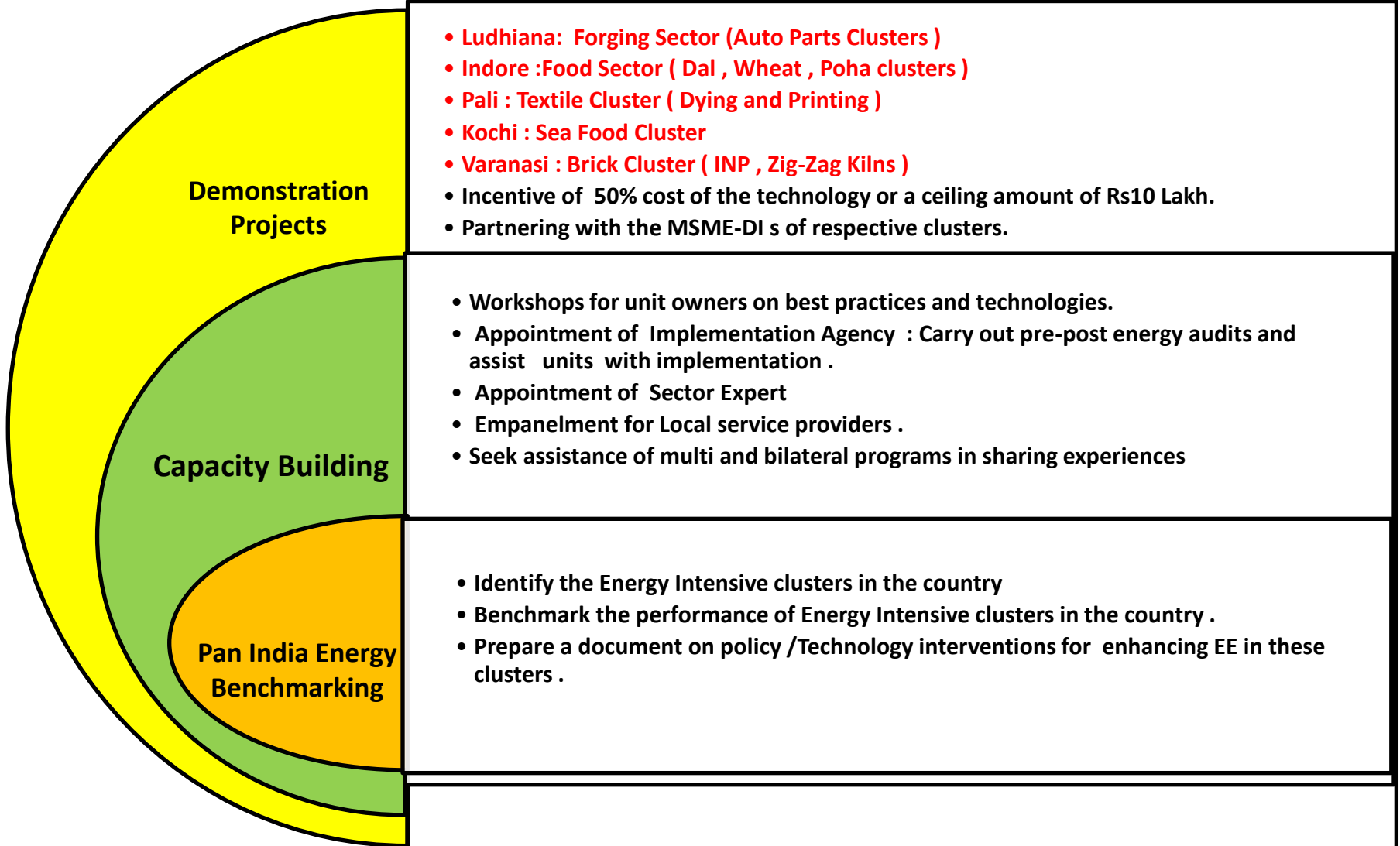
**Building Capacity &
Awareness**

**Increased Investment in
Energy Efficiency**

Knowledge Management

BEE - SME Program

Program Activities



Project Deliverables

1. Implementation of Technology demonstration projects

- ❖ Demonstration of 10 best identified technologies of selected 5 energy intensive sectors
- ❖ 100 technology demonstration projects to be implemented in 5 sectors.

2. Technical Assistance and Capacity Building

- ❖ Sharing of the BoP and BAT
- ❖ Development of case studies , print materials and audio visual of BATs& BOPs
- ❖ Capacity building in clusters through SDAs, National level workshops for stakeholders.

3. Mapping of the SMEs on pan India basis.

- ❖ Development of Pan India level Sector specific reports and policy plans .
- ❖ Launch of National Policy Document on Energy Efficiency in SMEs.

Synergies of BEE-SME Program MoMSME schemes

1. There is a two member committee Chaired by AS and DC, MoMSME to explore ways of aligning the activities of BEE with those of MoMSME in the XII plan under its SME scheme.
2. AS & DC suggested BEE to target following clusters :
 - a. **Food (Indore, M.P.)**
 - b. **Sea food (kochi, Kerala)**
 - c. **Forging (Ludhiana, Punjab)**
 - d. **Brick (Varanasi, UP)**
 - e. **Textile (Pali, Rajasthan)**
3. MSME-DI to support BEE in its SME initiatives and BEE to promote the TEQUP scheme in its workshops

Implementation Framework

Step .1

Constitution of cluster level steering committee

- a) Director, MSME-DI of the cluster,
- b) BEE is (convener)
- c) President, cluster Association

Shortlisting of units and oversee implementation of EE Demos

Step.2

Open invite for participation to SME units for the implementation of Demonstration projects

+

Invitation for empanelment of LSP and Technology Providers

Step. 5

Base line audits in the selected 20 units of the cluster by BEE- IA

Step.4

Signing of MoU with each of the twenty units of the cluster.

Step.3

Physical verification of units by BEE agency to select 20 units on the recommendation of committee

Step.6

1. Implement Demos in the 20 units.
2. Preparation of DPRs and audio visual recordings, Case

Step.7

Post Audits steering committee approves release of subsidy to units upon satisfaction of completion

Step. 8

Direct release of subsidy through e-transfer in the account of unit owner on the receipt of original bills from the units and proformas indicating completion of demos from IA .

Varanasi – Brick Cluster



- About 300 brick manufacturing units in the cluster
- Zig-zag technology is one of the technology options identified to enhance energy efficiency of brick making units in the cluster
- Local industry association (Int Nirmata Parishad) and individual brick kiln entrepreneurs
- TERI, New Delhi is engaged to carry out various planned activities in the cluster
- ***Baseline audits were completed in all the brick kiln units***
- ***Two of the units have already converted their existing kilns into zig-zag design***

Ludhiana - Forging Cluster

- More than 1500 Small and Medium Enterprise (SME) forging units operating in the various industrial pockets in and around Ludhiana, manufacturing products suitable for automotive, industrial and agricultural sector.
- Two technologies identified to enhance energy efficiency of forging units in the cluster – Induction Heating Furnace & Special Purpose Machines
- Baseline audits were completed in all the 20 forging units
- Eight units have already implemented the suggested technologies – realized energy savings 20 to 40%
- Post implementation audit is completed



Glimpses of technologies Implemented



Induction heater installed at C-Forge (India)



Induction heater installed at Global exports



SPM – turning installed at NN Products



Induction heater installed at Soga toka Industries



SPM – turning installed at Bharat International



SPM – turning installed at Khalon International



SPM – turning installed at Mehram Industries



SPM – drilling installed at Bharat International



Pali – Textile Cluster



- ➔ More than 350 Textile Dyeing and Finishing units with production capacity of 5.5 million meter per day
- ➔ Local industrial bodies
 - ▶ District Industrial Center, Pali
 - ▶ Rajasthan Textile and Hand Processors Association (RTHPA), Pali
- ➔ Baseline audits were completed in 11 textile units
- ➔ **Identified Technologies**
 - Economizer in Thermic fluid exit,
 - Air-preheater (APH) in steam boiler,
 - Waste heat recovery (WHR) with kier boiling unit,
 - Temperature Monitoring & Control in Jigger Machines Advanced Float Trap systems
 - Condensate Recovery System (CRS) in Jet Dyeing Machine,
 - Oxygen based automation and control system in boiler,
 - Installation of VFD for blowers of thermopac & boiler
 - New energy efficient boiler

Indore – Food Cluster



- ➔ More than 200 (Dal + Poha) processing units in Indore and Ujjain industrial area
- ➔ Baseline audits were completed in 14 units and implementation is in progress
- ➔ **Identified Technologies – (average energy saving potential is 25 to 30%)**
 - Replacing old and inefficient motors with EE motors
 - Installing Oxygen Sensor, fuel control and damper control
 - Installation of VFDs
 - Replacement of existing compressor with energy efficient compressor system
 - Substitution of fuel - saw dust based to gas based burner

Kochi – Sea Food Cluster



- More than 65 units in Kochi sea food cluster
- Baseline audits were completed in 8 units
- **Identified Technologies – (average energy saving potential is 15 to 20%)**
 - Replacement of reciprocating compressor with Screw compressor with VFD
 - Replacement of water cooled condenser with Evaporative condenser
 - Installation of variable frequency drive for condenser water pumps
 - Installation of THERMOSHIPON SYSTEM (GAS COOLING) for Compressor.
 - Automation of refrigeration plant by using PLC controller

GEF-BEE-UNIDO Program

Promoting Energy Efficiency and Renewable energy in selected MSME clusters

Objective

- ❖ The aim is to develop and promote an environment for introducing energy efficiencies and enhance use of renewable energy technologies in 12 selected MSME clusters in 5 sectors.

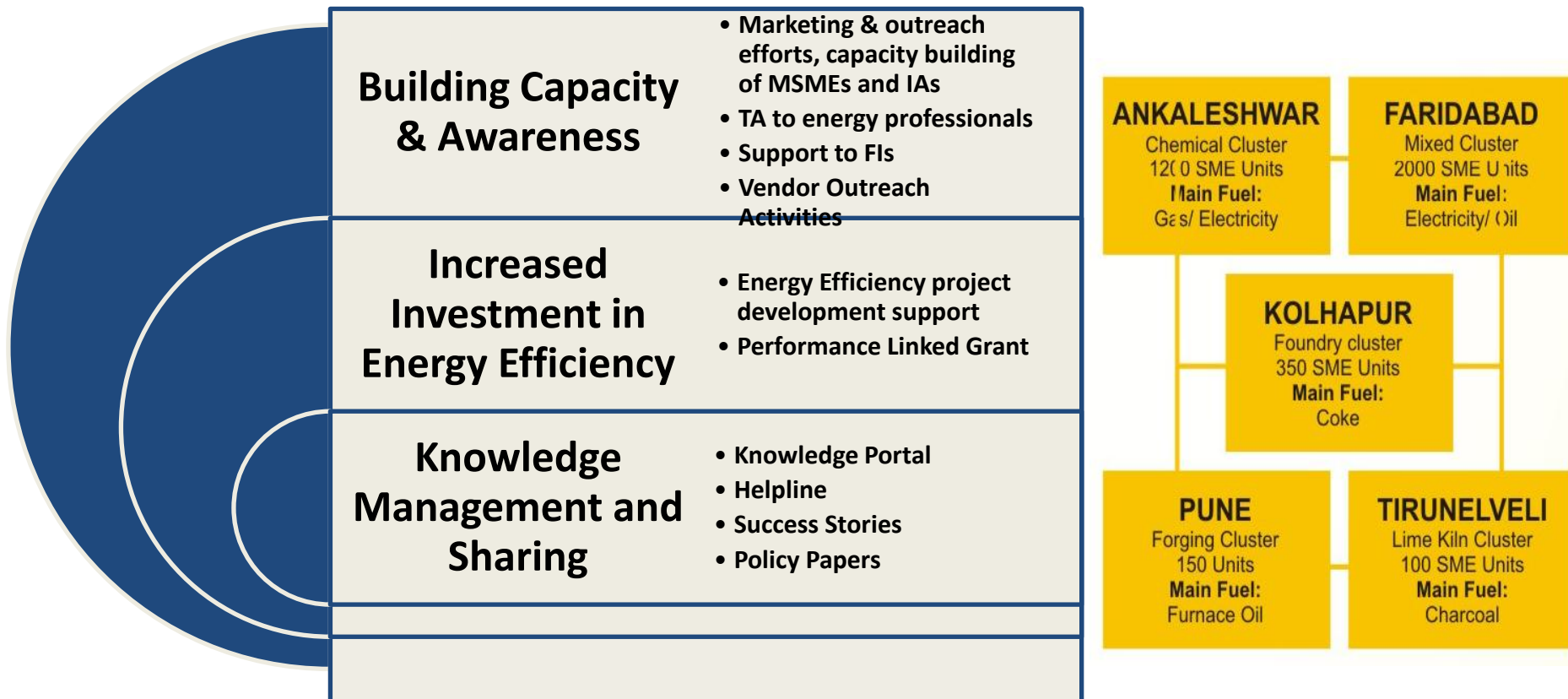
Progress Till date

- Appointment of cluster leaders is done
- 54 Detailed energy audits were completed in nine clusters
- Development of cluster specific Best Operating Practices (BOPs)
- 30 Awareness workshops were completed and trained more than 500 representatives from various industries
- Common Monitorable Parameters (CMPs) prepared and disseminated
- Drawn up the list of energy audit instruments
- Two demonstrations projects successfully completed in Belgaum and Coimbatore Foundry Cluster on Energy Performance Data Collection and Analysis
- One demonstration project has completed successful at Gujarat Dairy cluster, on parabolic trough for steam generation
- 80 Case studies prepared, being published in the form of pamphlets
- Implemented more than 80 EE projects at cluster level
- Development of local service providers list
- Background work being completed for setting up of Energy Management Centers in 9 clusters
- Organized 1 study tour to Japan and 2 study tours to China
- Organized two inter cluster visits

GEF-BEE-WB Program

Financing Energy Efficiency at MSME

- ❖ The objective is to increase demand for energy efficiency investment in targeted MSME clusters and to build their capacity to access commercial finance.



Major Updates

- Launch of Knowledge Management Portal
www.indiasavesenergy.in
- Toll free helpline 1800 2009 250
- Establishment of KM centre for Motors Efficiency at Faridabad
- Cross cluster KM activities
 - Awareness and Capacity building of Brick manufacturers on Zig-Zag technology and other best practices
 - Foundry clusters across India
- Awareness creation on Energy Management System among MSMEs

Thank You