



BUREAU OF ENERGY EFFICIENCY

GEF-WORLD BANK PROJECT

## Financing Energy Efficiency at MSMEs

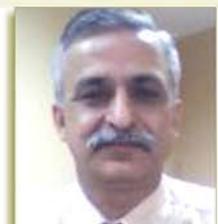
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e-newsletter



### Message from CGM, SIDBI

I take pleasure in presenting the second issue of MSME Line, the e-newsletter for the World Bank-GEF supported project 'Financing Energy Efficiency at MSMEs'. The objective of the project is to improve efficiency and reduce GHG emissions through commercial investments in energy efficiency goods and services in target Small and Medium Enterprise clusters.



The project aspires to voice the issues and barriers faced by a multitude of MSME stakeholders from diverse backgrounds like energy management, financing, technology, policy and regulation to name a few.

Specialized agencies have been deployed in each target cluster to address specific issues of awareness generation, identification and implementation of EE technologies, training and capacity building of stakeholders etc.

MSME sector in India plays a pivotal role in the sustained and balanced growth, employment generation, development of entrepreneurial skills and rural industrialization. SIDBI has been a frontrunner for the cause of development of MSMEs in India and proactively working towards increasing access to institutional finance by MSMEs.



Realising the fact that development of MSMEs is critical to the economic development of India, SIDBI has undertaken several initiatives to promote lending for green and energy efficient technologies in this sector. SIDBI has been operating lending schemes for promoting investment in clean production and energy efficient technologies.

In this issue of MSME Line, industry representatives shared their experiences after getting associated with the project. Case studies on Energy Efficiency in Chemicals sector identified during field research by TERI are included along with payback calculation. I hope readers will benefit from the information inside.

Please feel free to share your views or any queries with us. I conclude by thanking all stakeholders for the enthusiastic response and cooperation to project activities and participation therein with best wishes for the new financial year ahead.

Ajay Kumar Kapur  
Country Head,  
Energy Efficiency Vertical

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The World Bank



Global Environment Facility



Small Industries Development  
Bank of India (SIDBI)



Bureau Of Energy Efficiency

# Who's Who

As mentioned in the previous issue, expert agencies have been entrusted the task of carrying out various project activities in each cluster. Details of these agencies is presented below.

Cluster	Faridabad	Tirunelveli	Ankleshwar	Kolhapur	Pune
Cluster Coordination	IamSMEofIndia	Zenith Energy Services Pvt. Ltd.	Cluster Pulse	See-Tech Solutions Pvt. Ltd.	MITCON Consultancy and Engineering Services Pvt. Ltd.
Awareness, Media & Outreach	PricewaterhouseCoopers Pvt. Ltd. (PwC) & COMFED				
Energy Audits & DPR preparation	Development Environergy Services Limited. (DESL)		The Energy and Resources Institute (TERI)		
Tech. Assistance to Energy Professionals	Confederation of Indian Industry	Zenith Energy Services Pvt. Ltd.	Devki Energy Consultancy Pvt. Ltd.	To be announced	See-Tech Solutions Pvt. Ltd.
Capacity Building of Vendors	Federation of Indian Chambers of Commerce and Industry ( FICCI) & Inspire Development Services Pvt. Ltd.				

Among these agencies, FICCI along with Inspire has been newly appointed to facilitate and build capacity of energy efficient equipment vendors at the cluster level thus promoting easy availability of energy efficient equipment and technology locally. Presently, FICCI is developing a database of Energy Efficiency equipment / technology suppliers and service providers. To enlist your company in the database, or to know more, please contact Mr. MN Girish ([mn.girish@ficci.com](mailto:mn.girish@ficci.com)) and Pushpendra Nayak ([pushpendra.nayak@ficci.com](mailto:pushpendra.nayak@ficci.com), 011 23487585, 09313636244).

## Energy Audit Opportunities

MSMEs at all the five cluster are availing benefits of FREE Energy Audits, identification of EE measures, preparation of Investment Grade Detailed Project Reports (DPRs) and their implementation. Till date, over 800 Walk Through Audits (WTA) have been conducted. There is still an opportunity for around 160 units to avail this free facility. Following the WTAs, detailed energy audits have been conducted in around 200 units for which the preparation of IGDPR is in process.

Cluster wise details of audit activities completed and opportunities still available are summarised here for the benefit of MSMEs. We urge MSMEs to make the most of this opportunity & reduce their costs.



Cluster	Faridabad	Tirunelveli	Ankleshwar	Kolhapur	Pune
Walkthrough Audits (WTA)	291	20	350	117	60
WTA Opportunities Available	89	-	70	3	-
Detailed Energy Audits (DEA)	82	4	80	20	12
DEA Opportunities Available	158	16	170	50	28

# Success Stories From The Clusters

As highlighted earlier, a number of detailed energy audits have been conducted in each cluster. The potential energy saving areas identified includes both retrofitting option with low cost/ no cost and replacement option with medium/ high cost investment. During implementation support, it is observed that retrofitting options are being adopted on priority. The EE option those require equipment replacement are also time intensive and will take some time to establish the results. Present here are some representative cases of successful implementation of EE measures requiring low/ no cost investment.

## Saffron Exim

During detailed energy audit, the project team identified EE potential in Air compressor and Electrical Demand Management. Specific EE measures suggested to the unit are replacing existing air compressor with energy efficient compressor and Improve billing power factor at load side using power factor controller.

With the project support, the unit installed an energy efficient compressor having SPC of 0.19 kW per CFM compared to 0.40 kW per CFM earlier. The capital investment involved is Rs 0.9 lakh with simple payback period of 3.8 years.

## Rocky Chemicals

Energy Efficiency measures recommended after detailed energy audit are - Minimize CO formation through O<sub>2</sub> optimization in flue gases in NG fired boiler, Modify control system in boiler, Optimize set pressure of air compressor and Install condensate recovery system.

The project facilitated (1) Improved boiler operation thereby reducing CP formation resulting in estimated NG saving of 364 Sm<sup>3</sup>/year, and (2) optimising compresses air pressure from 8 to 5.5 kg/cm<sup>2</sup> without affecting the process. The resultant estimated energy saving is 378 kWh/yr.

## Mili Industries

During Detailed Energy Audit, the identified areas for energy efficiency improvement included Hot Air Generator (HAG) and Electrical Demand Management. Specific EE measures suggested to the unit are - Renovation of HAG and Improve billing power factor at load side using power factor controller.

The project facilitated renovation of HAG by (1) arresting leakage from hot air coils & furnace shell and (2) improving insulation. The baseline efficiency of the HAG was 47% prior to intervention. This has resulted in improving the thermal efficiency of HAG 47 % to 70%. The transformation involved capital investment of Rs 0.38 lakh with attractive simple payback period of 0.8 years.

## Shraddha Chemicals

The main potential areas of improvement included hot water boiler and hot air generator. Recommended measures include excess air control, improved insulation, installation of solar water heater, compressed air distribution etc. During implementation support, the audit team begun with assisting the plant people to reduce the current excess air from 133% to 40%, without compromising the combustion efficiency. This resulted in improving boiler efficiency by 2.4% and NG saving of 6.5 SCM/day approximately. The capital investment is nil, transformation is instantaneous and payback period is immediate.

The unit is now confident and keen to implement other audit recommendation such as installation of a solar water heating system to replace the use of boiler. Proposed capital investment is Rs 10.3 lakh with simple payback period of 1.8 years.

# Awareness and Capacity Building



**Faridabad, 20 Feb., 2013**

During this Quarter, a number of activities were carried out towards Awareness creation and Capacity building of different stakeholders in the project clusters. Technical Workshops for Forging Sector were organised for units in Faridabad in the month of February and March, 2013. The workshop showcased successful demonstration of Veneering Technology in heat treatment furnaces carried out at S B Engineers, Pune via a documentary.

Technical Experts from GIZ and KAEFER India presented details on the technology and the corresponding EE savings achieved. This initiative helped in generating interest towards replicating the successful pilot project. A similar forging unit in Faridabad has been chosen for another pilot under the project.

Sector specific awareness workshop was also conducted in Ankleshwar Chemicals cluster on 28 Jan 2013. During the workshops, PwC also shared findings from field research for Communication Needs and Gaps Assessment conducted for these clusters.

Cluster Pulse organised a workshop on Reducing the Cost of Business through EE in Ankleshwar Chemical cluster on March 6, 2013, which focused on importance of EE and the arising global opportunities it may provide .Devki Energy Consultancy presented successful case studies for energy intensive processes/ equipments like Pigment – CPC plant, Formaldehyde plant - Cogeneration, water pumps and boilers in Chemical units .



**Ankleshwar, 28 Jan., 2013**

The Awareness and Technical Workshops were attended by participants mainly from MSME units, office bearers of Industry Associations, EE technology suppliers and energy professionals.

## Energy Efficiency “on the move” - The Energy Bus



The “Energy Bus” developed by GiZ, under the IGEN programme is a unique concept and travels around performing road shows, awareness campaigns and is also capable of providing in-situ basic training.

The Energy Bus was exhibited in Faridabad for the MSME unit owners during a capacity building workshop conducted under the project. The bus is equipped with energy efficiency information, business case studies, insulation materials, hand-outs on practical insulation tips, thermographic measurements and analysis tools.



During this exhibition, the trainer explained the need and importance of energy conservation through insulation. He demonstrates how to carry out a thermal insulation audit and measurements of energy losses. Industry representatives found this session informative and requested for a similar road show in their industrial location for the benefit of their employees.

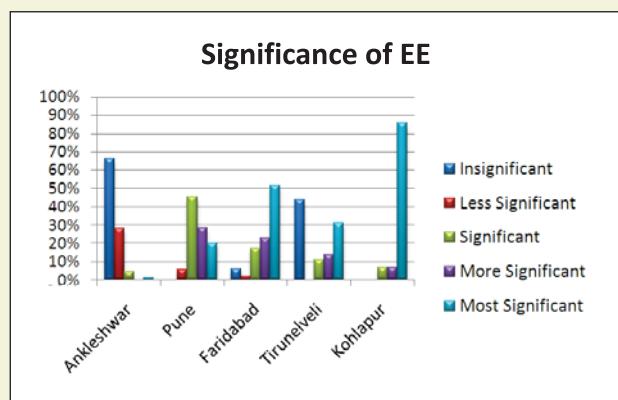
# Let's Connect – An Approach for Promoting Energy Efficiency

Among various barriers faced by MSMEs for adopting energy efficiency, one common barrier is gap in understanding of energy efficiency and imperfect information among stakeholders. To address this concern, the project emphasizes on efforts for increasing awareness of energy efficiency at the cluster and plant level on a large scale through implementation of outreach and mobilization efforts and dissemination of information on successful projects.

However, for any awareness and outreach effort to be effective it is important to have a clear understanding on “**what is to be communicated**” and “**how it is to be communicated**”. To answer these questions, a “Communication Need and Gap Assessment” study was conducted in all the five project clusters by PwC India and COMFED. This study helped in assessing prevailing awareness levels on EE and understand media habits and perception on significance of EE among such MSMEs. The perception check also takes into account quantitative and qualitative assessment of perceived barriers and motivators for adoption of EE measures. The salient study outcomes are as follows:

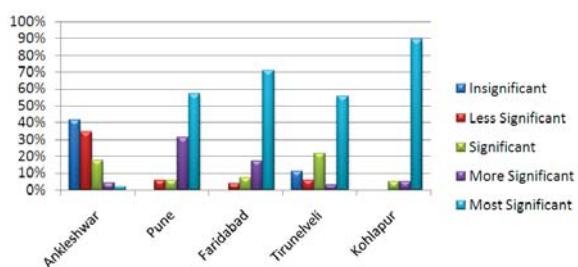
People's perception related to significance of energy efficiency largely depends on energy cost as percentage of production cost. Higher the percentage more the people are concerned about energy utilization and its increasing cost.

As apparent from the graph, respondents from Faridabad and Kolhapur clusters found EE most significant, where energy cost can be as high as 18-22% of their production cost, than Pune and Ankleshwar where the energy cost contributes around 10-15% of the total production cost.



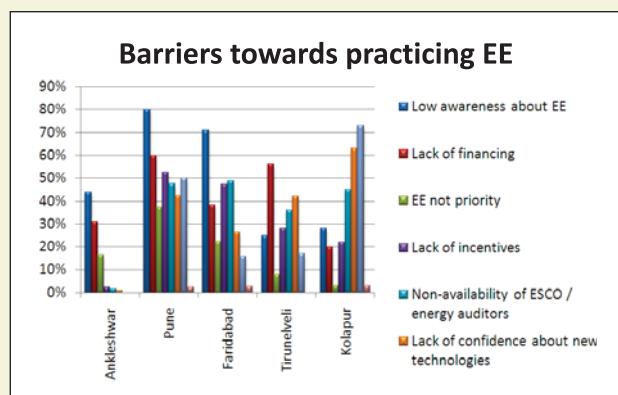
Individual's perception about significance of energy efficiency has relevance to his/ her level of awareness on EE. Awareness on energy efficiency was higher among the top management, whereas the awareness among middle management and shop floor employees was low and need to be strengthened.

Awareness regarding EE



As apparent from the graph, majority of the respondents are of the opinion that there is a need to enhance awareness on energy efficiency. It was also highlighted that any such awareness campaigns should be developed carefully keeping the target audience in mind. It is quite probable that an industry owner has different view point than his employees. Sometimes, a situation may arise, as observed in Ankleshwar wherein MSMEs find these awareness campaigns overdone and are now insignificant.

Further, low awareness on EE has been informed as the most common and prevailing barrier in practicing/ implementing energy efficiency in MSMEs. This also includes availability of information on energy efficiency measures, its credibility and lack of demonstration cases to gain confidence. Following this, the availability of fund to implement cost intensive measures is considered to be another major barrier. As learned, these barriers need to be tackled by better information management and its dissemination and in-house capacity building of MSMEs. Once identifying the existing information/ knowledge gaps in the clusters, it was pertinent to understand how the required information/ knowledge should be managed and disseminated for better effectiveness and outreach. Consequently, a demographic survey was conducted to collect information on educational background, general age group, typical day in work life, nature of operations, sources of information etc.



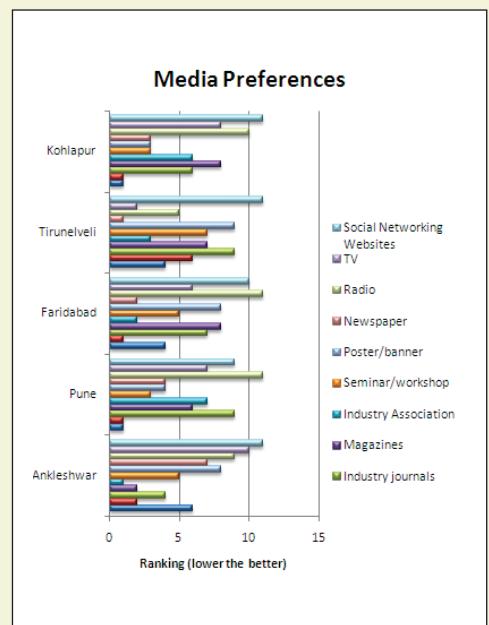
## Outreach Preferences

Educational background affects the communication language (i.e. local/English/Hindi), and mode of communication (SMS/E-mail/Printed material).

The day in work life decides what time of day should it be communicated.

Young and technology oriented people to get these information in soft copy on their phones/ computers whereas others prefer it in printed form through Industry magazines/ Journals and Seminars.

As it is evident from the survey results, there is no single communication medium fit for any cluster, and outreach efforts have to be combination of various communication channels. Based on the information collected through this Communication Need and Gap Analysis study, the next step is to prepare a cluster specific communication strategy and accordingly the communication material is being developed. Recent initiatives in this includes Radio and News paper campaign being taken in all the clusters.



## Upcoming Activities

### Sector specific Hands-on training programmes at CETEE, Chennai

On receiving the overwhelming response from industries, the next training programmes on energy efficiency at CETEE are scheduled as:

- **15-16 April 2013: Forging Sector**
- **27-28 May 2013: Foundry Sector**

The two day programme at Centre of Excellence for Training on Energy Efficiency (CETEE), Chennai includes class room sessions and hands-on experience on relevant simulators/ prototypes. Intended for professionals with technical background, the objective of these training programmes is to bridge the gap between energy efficiency theory and practice.

The cost of participation fee, boarding and lodging of the participants will be borne by the project. However, travel arrangement from and to Chennai is to be arranged by the respective industry/participant. For registration, please contact: [bee-wbpmu@beenet.in](mailto:bee-wbpmu@beenet.in) or [bhavesh.swami@hotmail.com](mailto:bhavesh.swami@hotmail.com)

### Technical Assistance to Energy Professionals

To overcome the concerns related to availability of trained energy professionals and access to commercial finance for implementing energy efficiency measures in MSMEs, experienced agencies have been engaged to provide in-depth training to energy professionals (energy auditors, energy managers, and other energy efficiency specialists) available in each of the target clusters. These training programmes intend to:

- Augment the knowledge and experience of energy professionals pertaining to the specific needs of MSMEs;
- Provide information about the latest technologies appropriate in MSMEs; and
- Facilitate energy experts in preparing bankable Detailed Project Reports (DPRs).

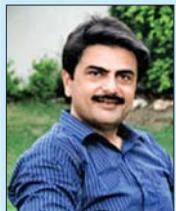
On completion of field work in Faridabad, Pune and Tirunelveli these agencies are now scheduling training programmes in the respective clusters. Each training programme includes deliberations on energy efficient technologies, best industrial practices, case studies across the sector, cost benefit analysis and DPR preparation. Following this, an industrial visit is scheduled in each programme to showcase some of technologies/ practices discussed during the programme. For participation, please contact the respective agencies.

## **Exhibitions to showcase EE products, services and technology from identified vendors**

FICCI plans to conduct exhibitions in Pune and Kohlapur MSME clusters in the month of May. These exhibitions will serve as a platform for identified vendors to showcase their EE products, services and technology for awareness creation amongst industries, industry associations and other stakeholders.

## **Cluster Speaks...**

### **Rajive Chawla, President, FSIA**



This GEF-World Bank project for MSME is a platform that offers solutions for some of our long standing issues concerning increasing energy cost in our units. I would like to share that energy audit conducted as part of this project has provided me an opportunity to reduce my energy bill by Rs. 9 – 10 lakhs per annum in my unit. Similarly, there are many other units getting benefited by participating in this project. I sincerely urge MSMEs to actively participate in the various project activities and take a step ahead to accelerate your growth by focusing on Energy Efficiency measures in your units.

### **Vipul Gajera, President, AIA**



This GEF-World Bank project, providing the required Knowledge and support to implement the identified energy efficiency measures, is the most inclusive effort for promoting Energy Efficiency in MSMEs units of Ankleshwar Chemical Cluster. As informed by the association members, a few early movers have already implemented the measures suggested by expert agencies working under the project and are reaping the benefits in terms of reduced energy cost and better productivity. I sincerely request all my fellow-friends and entrepreneurs to participate in the various project activities and wish everyone a great success on the journey towards an energy efficient future.

For any further information and clarification related to project activities, please contact :



### **BUREAU OF ENERGY EFFICIENCY**

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