



MSMELINE

GEF-WORLD BANK PROJECT

Financing Energy Efficiency at MSMEs

Jointly Executed by BEE and SIDBI

Issue 8 July - Sept. 2014

e-newsletter



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Message from GEF-WB Project Management Unit (PMU)

The project Financing Energy Efficiency at MSMEs now enters a phase, where the efforts of various stakeholders have started showing tangible benefits. The board room discussions at these units have started acknowledging energy efficiency as an area of prime importance. With initiatives like "Make in India", we plan to put forward a clean and green ecosystem to the global manufacturing community.

Currently, as part of implementation support provided under the project, about 1400 out of 3200 committed energy efficiency implementation measures (EEIMs) have been accomplished in 500 MSMEs spread across five project clusters. The implementation of these EEIMs is expected to leverage direct EE investments of INR 980 Million from the market (of which INR 482 Million worth EE works have been completed and the rest are ongoing). These investments are expected to achieve Lifetime Emission Reductions of 1 Million tons of CO₂ (of which work resulting in Life time reductions of 508,000 tons of CO₂ have been implemented).

Further, to mobilize energy efficiency in commercial lending, the project launched two key initiatives. i.e. (a) Establishment of Energy Efficiency Revolving Fund, which is fully integrated in to SIDBI lending products to encourage comprehensive EE investments (the fund provides about 2.5% interest benefit on EE lending based on comprehensive Energy Audits) and (b) integration of EE parameters in to MSME credit rating modules which will boost additional EE investments in the long run.

While implementing the project, the need to have a comprehensive Knowledge Management platform/portfolio was felt. To make this a reality, the project is currently working on setting up a dedicated knowledge portal and a toll free helpline to facilitate information sharing with MSMEs and allied stakeholders. This would supplement the existing communication channels namely e-newsletter, SMS campaigns, mailers, newspapers, social media to name a few.

This issue of e-newsletter covers success stories and other project activities that have been undertaken in the clusters in the recent past. These would illustrate the potential for gains in energy efficiency over a range of applications across industries. The challenge, however, lies in replication of these cases and integrating them into the mainstream development strategy of the industry. We hope that this project will empower the MSMEs to accept this challenge with full confidence, and thereby gaining significant EE benefits in this space.

As part of 'Cluster Speak' the e-newsletter shares the thoughts and experience of industries that have been a part this energy efficiency journey.

The readers are invited to connect with us to receive updated project information and at the same time provide valuable feedback and suggestions. The PMUs can be reached at save-energy@beenet.in. We look forward to your continued support to take these initiatives forward.

Project Partners



The World Bank



Global Environment Facility



Small Industries Development
Bank of India (SIDBI)



Bureau Of Energy Efficiency

Success Stories from Clusters

Advanced High Efficiency Structured Packing for batch distillation process saves Rs 22 lakhs/annum



A chemicals manufacturing unit in Ankleshwar has installed a batch distillation column for separation of Methanol and water mixture.

It was observed during the energy audit that distillation takes about 35

hours per batch which is relatively long, and thus the thermal energy input. On further diagnosis, it was found the unit has installed the conventional random packing for the distillation column which led to impeding of proper counter-current flow of liquid and vapour within the column.

After detailed assessment and cost benefit analysis by the energy audit team, the unit installed a advanced high efficiency structured packing for the column. This reduced the Natural Gas consumption from 2150 SCM/batch to 1825 SCM/batch in thermic fluid and a decrease in batch cycle time by two hours.

The unit undertook a capital investment of Rs 15 lakhs installation. Investments will be paid back from savings in Natural Gas consumption within 9 months.

- **Saving by replacement of conventional random packing:**
Rs 21.9 lakhs/annum
- **Reduction in Natural Gas consumption:**
58,500 SCM/annum

Replacement of Diesel air compressor with new screw air compressors saves Rs 72 lakhs/annum

An MSME unit in Pune had installed a diesel driven screw air compressor for meeting its pneumatic requirement. In the audit it was observed that the unit incurring significant energy cost for compressed air requirement from 437 kW, 1,570 CFM capacity compressor.

Detailed energy audit conducted at the unit assessed the cost benefit analysis of replacement of existing diesel driven compressor with new energy efficient screw air compressor (electricity run). Based on the suggestion of energy auditors' team, the unit agreed and replaced the existing diesel driven compressor with two new air compressors of 132 kW rating each in order to address the base load and peak load requirements in an energy efficient manner.



The unit undertook an investment of Rs 66 lakhs for installing new air compressors. The investment will be paid back from the savings in diesel consumption within duration of 11 months.

- **Savings by replacement of existing compressor:**
Rs 72 lakhs/ annum
- **Reduction in diesel consumption:**
167400 litres/ annum

Best Practice : Compressed Air Leakage Monitoring Programme

Venus Industrial Corporation (Unit III) is a progressive sheet metal unit in Faridabad, supplying various parts to automotive OEMs. Sheet metal units operate with heavy presses wherein compressed air is used for various pneumatic operations.

The compressed air network is often susceptible to air leakages, especially in the vicinity of the end-use points like pneumatic power presses. These leakages were often not easily detected with the efforts of the maintenance team alone, and were leading to costly loss of compressed air. To maintain the energy efficiency of the compressed air system, these leakages need to be regularly checked and subsequently rectified.

For effectively addressing such issues, Venus Industrial Corp. implemented an innovative method of Compressed Air Leakage Monitoring. Personnel maintain an Air Leakage Monitoring Board that indicates the current status of compressed air leakages at the various pneumatic power presses and other machines.



The board has hooks assigned and labelled for each of the pneumatic machines. The respective machine operators are entrusted with displaying the air leakage status with a token. Every day the operator hangs a green token on the allocated hook on the board if there are no leakages and a red token if any leakage is detected. This provides a visible indication of the leakages to be rectified. Maintenance personnel are responsible for promptly rectifying leakages and replacing the red tokens with green tokens within a

specified turn-around time. This practice ensures visual identification of leakage locations and clear assignment of responsibilities. The practice has been very effective in reducing costly compressed air leakages.

Clusters News

Exhibition of Energy Efficient Technologies at Ankleshwar and Kolhapur

Yet another series of two Exhibitions of Energy Efficient Technologies (EETs) relevant to MSMEs was organised by FICCI at Ankleshwar and Kolhapur on 04th Sep and 11th Sep 2014 respectively. For MSMEs in the cluster, the exhibitions provided a Touch and Feel experience of EETs as well as direct interaction with equipment suppliers, besides introducing the next-door availability of new generation technologies at cluster level. For suppliers of EETs, the exhibitions provided an avenue for developing market for EETs as well as identifying MSME sector as a potential market segment in immediate future.

The exhibitions also included Technical Seminar on Energy Efficiency wherein subject matter experts provided detailed insights into energy saving practices and technologies for MSMEs in Chemicals and Foundry sector. The seminars concluded with site-visit to nearby MSMEs including VacunairEngineering Co. Pvt. Ltd., Ankleshwar, where implementation of EETs like regenerative blowers etc. were showcased. This helped the participants to have a real-time exposure to operation of EETs and seek responses to their queries from beneficiary MSMEs themselves..



Training of MSME Stakeholders

Melting process typically contributes up to 70 % of the overall energy consumption in any given MSME foundry unit. Adoption of proper operating practices provides the biggest avenue for energy saving in induction furnace based foundries. As a result, the project team focussed on training of supervisors and operators of MSME foundries to unlock the energy efficiency potential of energy efficient operating practices in induction melting.



Hands-on Training and Awareness Workshop for the third and fourth batch of Kolhapur foundrymen were organised by PwC on September 23 and 24, 2014, at Ved Foundries (Sri Lakshmi Industrial Estate) and Melting Center (Kushire) respectively. As an innovative way for knowledge sharing, both the foundries volunteered for accommodating the event at respective venues where more than 50 foundrymen from different foundry units gathered to learn the energy efficient melting practices directly from the eminent foundry expert and trainer Mr Shyam Kulkarni. More such hands-on training programmes can be organised for foundries at other locations as well as other sectors like Forging, Chemicals, etc. in coordination with respective local industrial associations.

Financial Institutions and financial consultants are considered as important stakeholders in overall MSME ecosystem and have significant role in development and appraisal of energy efficiency improvement projects at MSMEs which are institutionally financed. Till date, more than 800 officers from Banks/ FIs have been trained through 24 programmes for better management of financing proposals from MSMEs for energy efficiency projects. Similarly, awareness generation activities have reached out to more than 100 financial consultants in different clusters..

Cluster Speaks

Mr Tushar Viradia, Partner, Shree Gayatri Chemicals, Ankleshwar

Natural Gas had been the fuel of choice for running the steam boiler at our plant. It was through the detailed energy audit conducted at our plant (under the World Bank – GEF project Financing Energy Efficiency at MSMEs) that we could identify the benefits of switching over to biomass fired boiler. We replaced our Natural Gas fired boiler with biomass briquette fired boiler six months back with an investment of about 4 lakhs. We are very happy with reduction of 50% in our steam generation cost, and now realise that it should have been done long back!



Mr. D Chatterji, GM, Venus Industrial Corporation, Faridabad

We at Venus Industrial Corporation have always fostered an environment where we value and recognize team contributions in efficiency and optimizing resources. Our past efforts in improving energy efficiency have been recognized and appreciated. We predominantly use compressed air through pneumatic presses and other pneumatic equipment. The GEF-World Bank project team has helped us systematically study, identify, and reduce compressed air leakage, optimize on pressure settings, and use compressed air efficiently. We have reduced over 25% of our energy consumption in compressed air network without any significant investment. This has reinforced and strengthened our confidence to adopt energy efficiency in all our operations.



Performance Linked Grants for Energy Efficiency Implementation

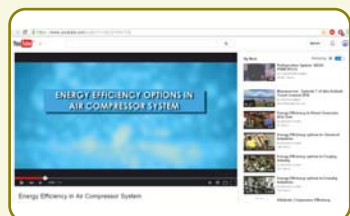
With the objective to encourage early adoption and implementation of energy efficiency measures by MSME units, a Performance Linked Grants (PLG) scheme was launched in targeted MSME clusters. 28 MSME units qualifying the pre-determined eligibility criteria were able to avail the benefits of this scheme. These units had invested about Rs. 5.64 crores for implementation of energy efficiency measures and thereby realised a cumulative energy saving of 1074 TOE. The qualifying units included 5 MSME units in Ankleshwar, 12 in Pune, 6 in Faridabad and 5 MSMEs in Kolhapur. Grants amounting to approx. Rs. 96 Lakhs, were disbursed among these MSMEs after due verification of the realized energy savings by the appointed third party M&V Consultant.

Audio Visual Documentaries

6 Films on Energy Efficient Technologies developed till date

In the last issue we reported on this new initiative, wherein energy efficiency measures undertaken under the project were captured as audio visual documentaries to facilitate replication among a wider target group of MSMEs. Two more documentaries on energy efficiency improvement measures in Air compressors and DG Sets have been developed may soon be screened at cluster level awareness and outreach programmes. With this, a total of six documentaries on different energy efficiency improvement measures have been developed thus far. These documentaries can be accessed at following links :

Air Compressors:



<https://www.youtube.com/watch?v=sD0ZVafwTSE>

DG Sets:



<https://www.youtube.com/watch?v=VLfmW2VZV5g>

For older films pl. go to the link given below:

1. Forging Furnaces: <https://www.youtube.com/watch?v=4-ElwvRClrM>
2. Steam Boilers in Chemical Sector: <https://www.youtube.com/watch?v=Xpof3kDJ-Vk>
3. Veenering in Heat Treatment Furnaces: <https://www.youtube.com/watch?v=BQxalZ4eGng>
4. Induction Melting in Foundry Sector: <https://www.youtube.com/watch?v=BNDLU7ONEmS>

Quiz

1. How much is the total worth in monetary terms of energy savings that are realized till date through GEF-WB project interventions?
2. How much are the monetary savings generated per annum by replacement of diesel based air compressor with screw air compressor in the MSME unit in Pune?
3. How much reduction is achieved in natural gas consumption annually by improvements in the distillation column at the MSME units in Ankleshwar?
4. How many officers from Banks/ FIs have been trained under the project, for better management of energy efficiency financing at MSMEs?
5. How much is the percentage of energy savings achieved in Compressed Air Systems at Ms. Venus Industrial Corp., Faridabad?



Readers are invited to send in their responses to above quiz at save-energy@beenet.in till 10 April., 2015, 5 pm. Three correct entries (based on random selection) shall stand a chance to win a prize (like solar cap/solar calculator). Project executing agencies/ their representatives/BEE staff/other consultants involved in the project are not entitled for participation in this quiz.*

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



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*conditions apply