Energy Efficiency Enhancement in SMEs – Experiences gained on Cultural Issues

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About the Project

World Bank-GEF “Financing Energy Efficiency at MSMEs” project (US$ 11.3 Million) implemented by SIDBI & BEE

Objective: Increase demand for energy efficiency investments in targeted MSME clusters and build their capacity to access commercial finance

Ph-I
- Cluster profiling

Ph-II
- Walk through audit - 400 SMEs

Ph-III
- Detailed energy audit - 250 SMEs leading to investment grade report

Ph-IV
- Providing implementation support to at least 200 units
Cluster – Faridabad

- Faridabad - an industrial city, 25 km from Delhi, the capital of India
- Automobile manufacturing majors like Escorts, Eicher spurted rise of SME units in the 1950s
- Today, a mixed engineering cluster with 17,186 SME units over 31 km²
- Estimated turnover-over US$ 20 Bn
- Ownership: group companies (44%) and single companies (56%)

Source of data: Outlook Business Magazine, March 2015
Profile of the cluster

Profile of the Cluster

Energy cost saving potential of 10-30% from the present levels
SME – Cultural issues

- Plant shifting
- Credentials of energy auditor
- Value perception
- Cost of energy audit
- Energy audit – A novelty
- Entry barrier
- Compliance issue
- Energy audit – A novelty
- SME
- HR strategy
- Concerns – Exposure O&M practices
- Poor MIS
- Low confidence on new vendor
- Frequent changes in baseline
- Impact on production
- High investment cost
- Owner does not have time/interest
- Meeting the right person
- Low awareness on energy guzzlers
- Decision influencers
Low energy intensive unit with low interest in energy efficiency

SME unit carrying out job work of electroplating/metal finishing; annual energy bill of USD 30,000

Owner did not show interest and did not spare time

Welcomed the detailed energy audit team and extended full cooperation

Uncertainty of actual savings after implementation

Refrain from using the “audit” term and identification of no cost measure during WTA

Revalidation of implemented measures

Case studies of cultural change
Low energy intensive unit with high interest in energy efficiency

- SME unit (part of a group) manufacturing sheet metal components; annual energy bill of USD 80,000

- Owner delegated competent staff to coordinate with energy audit team
- Smooth transfer of data and completion of WTA

- High interest from plant head on energy audit process and implementation of findings
- Joint effort to conduct audit and identify energy conservation opportunities

- Low confidence on non-local and new vendors
- Conduct validation of new vendor’s product during demo and gain confidence

Case studies of cultural change
Medium energy intensive unit with low interest in energy efficiency

- SME textile unit (part of a group); annual energy bill of USD 1 Mn

Owner’s perception that the plant is operating at optimum efficiency level

Identification of clearly visible energy cost saving measure

Owner expresses ignorance of major energy consuming areas and concerns about impact of audit process on production

Provided machine level consumption estimates and suggested a system to monitor regularly

Post implementation of accepted energy conservation measures, he seeks a re-audit even on paid basis

DESL established as a reliable partner
Medium energy intensive unit with high interest in energy efficiency

- SME plastic moulding unit (part of a group); annual energy bill of USD 65,000

Owner has delegated competent staff to coordinate with energy audit team

Plant head welcomes the audit team with periodic review by owner

Successful implementation of innovative project leading to energy as well as productivity improvement

Smooth transfer of data and completion of WTA

Joint effort to conduct audit and identify energy conservation opportunities

Combined interventions on energy, lean production and quality improvement

Case studies of cultural change
High energy intensive unit with low interest in energy efficiency

- SME forging unit (part of a group); annual energy bill of USD 1 Mn

Several energy audits done; all of which under delegation to plant head

Team conducts energy audit and presents findings to plant head

Plant head - low priority to implementing audit findings

Team reviews with Owner, infuses interest and embarks on regular & ambitious projects

Implementation assigned to in-house design engineer – reluctance to implement new design

DESL engaged continually to build confidence

Case studies of cultural change
Summarising

30%

15%

Creating market pull for energy efficiency services in SME units

Moving ahead from subsidised energy efficiency services to fully paid services to be done by local service provider

- Third party monitoring and verification of SME units
- Developed a credit rating model with green parameters for SMEs
- Capacity building of banks/financial institutions
- Introduced new vendors/ESCOs for implementation of high cost projects
- Implementation support to SME units
- Detailed energy audits in SME units
- Capacity building of vendors/local service providers
- Walk through audits in SME units
- Awareness generation of SME units
- Capacity building of industry associations

DESL
Thank You

With sincere acknowledgement to key stakeholders - World Bank, SIDBI, BEE and Participant SME Units

For more information, please contact K. Srikant, Consultant
srikantkasturi@deslenergy.com
DESL Credentials

**ENERGY EFFICIENCY**

Enabled energy saving of approx 200 MW in commercial buildings, industries and municipal facilities.

**Biomass Energy**

- Designed and Engineered over 500 MW of biomass-based power plants and cogeneration.

**WTE**

- Designed and engineered 34 MW solid waste to energy plant.

**SHP**

- Due Diligence & Project development for 250 MW of hydropower.

**Solar**

- 400,000 LPD solar water heating in industrial processes.
- Distributed SPV systems.

*Over 4 million tons of GHG emissions off-set*