Opportunities for Energy Efficiency in Small and Medium Enterprises

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- Small and Medium Enterprises – Overall importance
- TERI's experience in the sector including case studies
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SUSTAINABLE
ENERGY FOR ALL

SUSTAINABLE ENERGY FOR ALL

Global Energy Efficiency Accelerator Platform and the Industrial Energy Efficiency Accelerator

Institute for Industrial Productivity

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UNIDO UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Strategic Framework

Industrial Efficiency Accelerator

Energy Efficiency Policies and Delivery Mechanisms

Large Energy Intensive Industries

Energy Intensive SMEs

Cross-cutting measures and technologies

Sector-specific technologies & benchmarks

BATs & BOPs in energy intensive clusters

Energy Service Providers

Industrial Energy Efficiency Accelerator: Structure and Building Blocks

Leading Partners:
UNIDO, IIP, TERI, and 2 - 3 private sector companies, including Dow Chemical and Schneider Electric

Supporting Organizations:
IEA, GSEP, WBCSD, CEM, UNF, etc.

Key Stakeholders:
Ministries of environment / energy, engineering firms, Industry associations, Banks, NGOs, etc.

SMEs: Dominating the World Stage

- Contribute substantially to income, output, employment and economic growth
- Constitute 95% of world's total enterprises, 60% of total private sector employment
- Over 99% of total enterprises in Japan are SMEs
- In EU-27, 99% of all enterprises are SMEs, employing 67% of all workers and contributing 58% to value added
- In OECD economies, over 95% of firms are SMEs and micro-enterprises, accounting for some 55% of GDP.
- In China, SMEs account for 99% of the total number of enterprises, contributing 60% to the GDP, 75% to industrial value-added, and 68% of China's exports.

teriSMEs: Dominating the World Stage....Contd.

- In South Africa, an estimated 91% of the formal business entities are SMEs, contributing over 50% to country's GDP
- 90% of enterprises in many developing countries viz. Bangladesh, Nepal, South Africa, Ghana etc. are SME, constituting 40-70% of their country's GDP
- In Armenia, around 98% of all operating legal entities are SMEs, contributing 30% to the GDP.
- 99% of all enterprises in Singapore are SMEs
- In Canada, 97.8% of enterprises are small, 1.9% are medium-sized enterprises. only 0.3% are large.
- SMEs contributed roughly 50% of US private non-agricultural GDP and 60% of Australia's industrial value.
- Sector badly affected by global financial slowdown

MSME Sector: Indian Context

- 44 million units employing 100 million people
- Accounts for 45% of manufacturing output and 40% of India's total exports
- Manufacturing over 6000 products
- Many energy intensive sectors such as foundry and forgings, glass and ceramics, brick, textiles, dairy and food processing and so on
- Clustering of industry: over 200 energy intensive manufacturing clusters exist
- Deploy obsolete technologies and unskilled manpower
- Scope to save energy by adoption of Energy Efficient Technologies (EETs), Renewable Energy Technologies (RETs) and Best Operating Practices (BOPs)
- Nodal agencies: Ministry of MSME, BEE, MNRE

SME Energy Efficiency Imperative

- Many energy intensive sub-sectors (e.g. forging, foundries, glass & ceramics, bricks, food processing, textiles etc)
- Energy accounts for up to 40% of production costs in many cases
- Inefficient processes and unskilled manpower
- Lack of customized EE technologies/ knowledge of BOPs
- Lack of investment in RDD&D
- Few reliable channels of communication between SMEs and technology providers
- High upfront costs of many LCTs
- Opportunities in
  - cross-cutting technologies like boilers, pumps, blowers, compressrors, motors, lighting etc
  - Improving efficiency in processes like furnaces

Accelerating Adoption of LCTs in SMEs in Developing Countries – Key Requirements

- Research, Development, Demonstration and Dissemination of clean LCTs/Technology Customization
  - Role of international technology transfer/cooperation mechanisms, including private sector involvement
- Promote adoption of LCTs through enabling policies
- Technical back up at local level for adopting BOPs
- Capacity Building/Skill development
- Improving access to finance
- Strengthening local institutions for SME development
- Utilizing a comprehensive mix of instruments and solutions

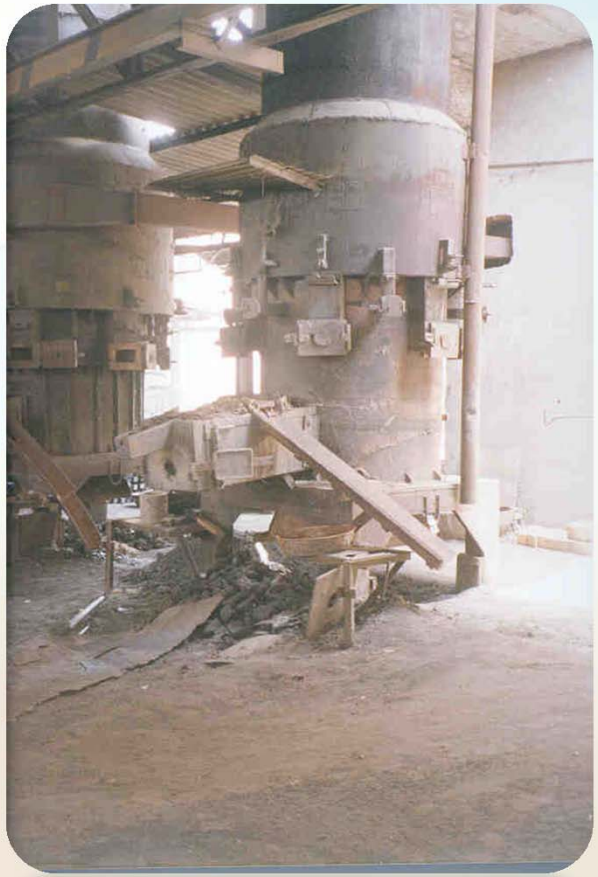
Indo – Swiss Technology Cooperation for Promoting LCTs in SMEs: Case study #1

Conventional coal fired pot furnace

Recuperative natural gas fired pot furnace

GLASS SECTOR

Indo-Swiss Technology Cooperation : Case study #2



Conventional Cupola

Divided Blast Cupola (DBC)

FOUNDRY SECTOR

Cleaner Technologies in Brick sector - a model for South-South technology cooperation: Case study #3

Bull's trench kilns (BTKs)

Vertical shaft brick kiln (VSBK)

Clamp kilns

India-Japan Joint Project for Promoting Low Carbon Technology Transfer: Case study #4

- Application
  - EHP for preheating of boiler feed water & precooling of process chilled water
  - Dairy, food processing, pharmaceutical, commercial buildings
  - Pilot plants installed at two locations in India
- Benefits
  - Reduction in fuel consumption in boiler and electricity in chiller
  - Primary energy savings 30%-40%

SME EE Accelerator: Broader Approach

- Have 10 to 20 national/state governments/ clusters/ industry sub-sectors to participate
- Target energy intensive sectors/clusters
  - Targeting based on the stakeholder interest
  - Important to gauge interest of national/state /local government
- Focus on providing comprehensive solutions to end users (action oriented approach at ground level)
- Develop multi-year cluster /industry sub-sector level programs with increasing commitments focusing on either/all of the following approaches:
  - **RDD&D**
  - **Energy audits and implementation**
  - **Local Capacity building**
  - **Financing support through credit lines for energy efficiency improvements**

Possible SME EE Accelerator in Developing Countries: Commitments needed

- *National Governments*: Overall support to develop and facilitate implementation of EE programs in SMEs; financial support, if possible
- *International agencies*: Financial and technical resources for pilot projects and operating SME-EE programs
- *International Technical Institutions/Experts* : Project execution and expert assistance
- *Local SMEs/businesses*: Participation in the program to reduce unit level energy consumption, investment in EETs and BOPs
- *Financial institutions/Banks:* Financing support for long-term sustainability of the program

Accelerating EE in Indian SMEs – proposed pilot initiative

- Selection of regions/states with energy intensive SME clusters
- Identifying energy intensive clusters
- Unit level energy mapping and technology profiling
- Data analysis & benchmarking
- Identification of unit specific EE technology options, demonstrations as needed
- Training of entrepreneurs, supervisors, fabricators and LSPs
- Explore linkages with available government financing schemes such as TEQUP, BEE-SME Program, Banks (or new international donor initiatives through specific pilot programs under SE4ALL).
- Handhold units to implement EETs and BOPs

Thank You

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