Understanding the SME sector in Asia, with a focus on India and challenges in terms of improving energy efficiency

6th EMAK Workshop
Promoting Energy Efficiency in SMEs and Waste Heat Recovery Measures in India

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Outline

- Importance of SMEs
- Energy-intensive SMEs
- Challenges in up-scaling energy efficiency
SMEs are of strategic importance to all countries

- Backbone of a country’s economy
- Provides most of the employment
- Use locally available resources and skills
- Caters to local markets
- Encourages technological innovation and entrepreneurship
Contributions of SMEs to Asian economy

- Account for 98% of enterprises and 70% of employment in Japan
- Provide 60–70% of employment in Asian Tiger nations
- 96% of industrial establishments and 83% of employment generation in industrial sector in Nepal

# William Masikiwa Goriwondo, (lecturer NUST) Small to Medium Enterprises (SMEs)’s critical role in the economy
@Overview of Nepalese Small and Medium Enterprises, Chapter 3
Contribution of SME to Indian economy

- Number of SMEs: 44 million
- Highly labour intensive: 100 million people
- Contributes to 8% of GDP, 42% of exports and 45% of manufacturing output

Source: Annual Report 2012–13, Ministry of MSME, Government of India
Characteristics of Indian SMEs

- High percentage of units are in the micro and small-sized category
- Geographical clustered
- Large scope (20–40%) to save energy

# Chapter 3: Technology transfer of Energy Efficient Technologies among SMEs in India, Prosanto Pal and Girish Sethi in the book ‘Low Carbon Technology Transfer: From Rhethoric to Reality’, David Ockwell and Alexandra Mallet (eds.) 2012 Published by Routledge
Example of Indian foundry industry

- Third largest in the world after China and USA
- Employs 700,000 people
- Out of 4,500 foundries, just 250 are in the organized sector
- Large percentage of micro and small units using inefficient technologies
- 20 well known geographical clusters
About 200 ‘energy-intensive’ SME clusters

- Energy cost account for a major share of the operating costs
- 15 product categories including casting, forging, glass, ceramics, food processing, textiles and so on

Many products made for local markets e.g. jaggery, glass bangles, local food items
Technology characteristics of energy-intensive SMEs

- Conventional technologies which have remained unchanged for decades
  - High energy consumption
  - Moderate to high pollution

- Little R&D efforts
  - Underdeveloped support institutions and local service providers
  - Limited capacity to innovate
  - Low level of awareness; limited channels of communication
Need for research, development, demonstration and dissemination (RDD&D) on cleaner technologies

- Scope to match-make state-of-the-art knowledge to customise technology for local needs
- Involve international and local institutions in R&D and demonstration
- Long-term ‘hands-on’ support for assimilation and dissemination
Demonstration plant set up by TERI–SDC at a foundry in Howrah
Energy performance

Charge coke

Coal saving t/yr. CO₂ t/yr.
1. DBC-1: Cupola without pollution control
2. DBC-2 Existing pollution control system
3. Demonstration unit
Challenges in improving energy efficiency of SMEs

- Development and demonstration of new cleaner technologies
- Development of local delivery systems
- ‘Hand-holding’ during dissemination
- Enabling regulatory and financing environment
Thank you for your attention