

SMALL AND MEDIUM ENTERPRISES: ENERGY EFFICIENCY KNOWLEDGE SHARING

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SAMEEEKSHA

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NEWSLETTER

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- Second National Summit on Energy Efficiency in MSMEs



VISION

SAMEEEKSHA envisages a robust and competitive SME sector built on strong foundations of knowledge and capabilities in the development, application, and promotion of energy-efficient and environment-friendly technologies.



A PLATFORM FOR PROMOTING ENERGY EFFICIENCY IN SMEs

IN THIS ISSUE...

This issue carries a summary of the Second National Summit on Energy Efficiency in MSMEs that was held during 31st October –1st November 2017 in New Delhi. The two-day event, organized by BEE and TERI with the support of the Embassy of Switzerland in India, UNIDO and the Ministry of MSME, included participants from MSME clusters across the country, government departments, bilateral and multilateral agencies, academia, banks, consultancies, and R&D establishments. The discussions helped in eliciting and understanding the views of MSME entrepreneurs and other cluster-level stakeholders on the key barriers that continue to impede energy efficiency (EE) improvement among MSMEs; and in outlining approaches to overcome these barriers at the three overlapping levels of finance, technology and capacity.

The Summit highlighted the fact that given the sheer size and diversity of India's MSME sector, and the lack of investible financial resources and technical wherewithal among most MSMEs, EE solutions can be scaled up only if they are customized to meet the needs of individual MSME units, and promoted along with innovative, easy-to-access financing schemes and technical training /capacity building programs for entrepreneurs and plant personnel. Among the key approaches outlined for the future are: broadening EE initiatives beyond the manufacturing sector to cover service enterprises as well; promoting renewables along with EE; targeting EE initiatives at the manufacturers and/or suppliers of machinery and equipment such as motors, pumps, etc. which are used across the MSME sector; and achieving large-scale adoption of EE technologies (such as EE motors) through the ESCO model, using the principle of demand aggregation.

SAMEEEKSHA Secretariat



SECOND NATIONAL SUMMIT ON ENERGY EFFICIENCY IN MSMEs

The Second National Summit on Energy Efficiency in MSMEs was held during 31st October–1st November 2017 in New Delhi. The Summit was organized by BEE and TERI with the support of the Embassy of Switzerland in India, UNIDO and the Ministry of MSME (MoMSME), Government of India. The two-day event drew over 225 participants. They included delegates from 37 industrial associations representing major energy-consuming industrial sub-sectors across the country such as brick, ceramics, chemicals, dairy, engineering, foundry, glass, metallurgy, rice mills and textiles; 30 government departments including a number of State Designated Agencies (SDAs); 15 bilateral/multilateral organizations; academic institutes; banks and financial institutions; energy and technical consultancies; and R&D establishments.

As with the first National Summit held in July 2012 [see SAMEEEKSHA 3(3), September 2012], this Summit focused on identifying and analysing the principal barriers that continue to thwart the adoption and scaling up of energy efficient technologies (EETs) among MSMEs; discussing the various initiatives that have been undertaken to address and overcome these barriers, and their outcomes; and outlining the new/improved strategies and initiatives that must be undertaken in coming years from policy to grassroots levels. Towards this end, the MSME entrepreneurs and other stakeholders who participated in the Summit shared their knowledge, experiences, and ideas in a series of sessions that spanned three broad and overlapping themes relevant to energy efficiency (EE): namely, technology, finance and capacity building.

Framing the context

Mr Abhay Bakre, Director General, BEE, underlined the importance of EE in ensuring the growth and competitiveness of the MSME sector. Pointing out that about 200 energy intensive MSME clusters together account for almost 25% of the total energy consumed by the MSME sector, he outlined the efforts

made by MoMSME, BEE and TERI to promote EE in these 200 clusters in partnership with organizations including Global Environment Facility (GEF), World Bank (WB), SDC and UNIDO. Dr Ajay Mathur, Director General, TERI, underlined the point that in an MSME, the entrepreneur finds it extremely difficult to devote time, attention and resources to only one aspect of operations—such as EE improvement—because usually he/she is “the Chief Executive Officer, Chief Financial Officer and Chief Marketing Manager all rolled into one”, unlike in large-scale enterprises where these critical functions and responsibilities are divided. Besides, ‘off-the-shelf’ EET options for MSMEs are rarely available, and even if they are, they usually have to be adapted to suit the local needs and conditions. Under these circumstances, MSMEs require assistance by way of technological support and capacity building in order to enable them to adopt EETs.

Mr Rene Van Berkel, UNIDO Representative and Head of UNIDO Regional Office in India, placed the promotion of EE in India’s MSME sector in the context of the UN’s Sustainable Development Goal 7: ‘Ensure access to affordable, reliable, sustainable and modern energy for all.’ He also mentioned UNIDO’s various initiatives towards this end, including the

“ We require industrial transformation, towards factories of the future...that were needed yesterday! These are factories that are productive in national and international markets, deliver benefits to all stakeholders, and take resources, environmental and climate concerns to heart. ”

Mr Rene Van Berkel, UNIDO



GEF-supported project titled 'Promoting market transformation for energy efficiency in Micro, Small & Medium Enterprises', which is being implemented by UNIDO in 10 MSME clusters in partnership with MoMSME, BEE, SIDBI and Energy Efficiency Services Ltd (EESL). Mr Raj Pal, Economic Advisor & Joint Secretary, Ministry of Power, Government of India noted that energy will be the real 'differentiator' in the 21st century; for, the efficiency with which energy is generated, transmitted, distributed and consumed will determine the competitiveness of an economy. Considering the fact that energy consumption in India will increase many-fold in a business-as-usual scenario, energy efficiency provides an important avenue to reduce energy demands as well as strengthen energy security.

Dr Andreas Baum, Ambassador of Switzerland to India, mentioned that 99.7% of all enterprises in Switzerland are SMEs; and of these, nearly 89% are so-called micro-SMEs employing less than nine persons each. Despite their small size, the enabling eco-system in Switzerland demands that each SME be highly efficient in its production processes and energy use. Recounting SDC's 23-year-old partnership with TERI in promoting EE in the MSME sector, he noted that this long-term engagement reflects a 'consistency of purpose' even as India and Switzerland prepare to celebrate 70 years of formal diplomatic relations, friendship and bilateral cooperation in 2018. Dr Baum pointed out that the challenges that confronted MSMEs in 1994—lack of access to clean technology options, information

asymmetries about EE, weak capacities, and limited access to finance—are present even today, and suggested that two paths be explored to scale up EE in the MSME sector: (1) drawing up a clear road map for EE by capitalizing on the concept of 'low hanging fruit'; and (2) applying market-based incentives with appropriate policies set in place, using the successful 'LED story' as a guide.

Mr Giriraj Singh, Minister of State (I/C), Ministry of Micro, Small and Medium Enterprises, Government of India delivered the inaugural address, during which he stressed that in addition to promoting EE among MSMEs, efforts should focus on increasing the uptake of renewable energy (RE), particularly solar-based technologies. He said that the challenges confronting the MSME sector will have to be addressed through innovations and out-of-box solutions, which will not only enable energy savings and effective resources utilization, but also generate employment for large numbers of people. In this regard he cited a number of examples from his tenure in the Bihar state government, including an initiative to promote solar-driven charkhas (spinning wheels for yarn); a plan to exploit flooded wastelands, oxbow lakes (*mauns*) and other water bodies for creating fisheries as well as generating power by installing solar panels above the water bodies; and the promotion of solar-based milk chilling technology (in place of diesel-based systems) for bulk milk coolers in the dairy industry. Mr Singh stressed that efforts to promote EE and RE should not be focused only to the manufacturing segment in the MSME sector, but be extended to cover other segments of the supply chain as well—such as services, transport, and so on. He also launched the SAMEEEKSHA website in its revamped version; inaugurated the Energy Management Cells (EMCs) set up by UNIDO under the GEF-supported project 'Promoting Energy Efficiency and Renewable Energy in Selected MSME Clusters in India'; and presented certificates to the MSME entrepreneurs who had helped establish the EMCs at cluster level.

“ As India continues to grow as one of the fastest developing economies of the world, MSMEs will continue to be an important chapter in the growth story...the sector thus takes an important position in 'Make in India'.

**Dr Andreas Baum,
Ambassador of
Switzerland to India**

Discerning ground realities

Setting the tone

During the next session, speakers underlined the importance of making the MSME sector more energy efficient and productive in the context of



overall national development; summarized some of the recent/ongoing initiatives undertaken in this direction; and highlighted the lessons learned and challenges that remain. The speakers comprised Mr Girish Sethi, Senior Director, TERI; Mr Abhay Bakre, Director General, BEE; and Mr Sanjay Bisariya, Joint Development Commissioner, MoMSME . The following salient points were made:

- Studies by TERI estimate that of the total energy consumed in industry, almost 80 million tonnes of oil equivalent (Mtoe) remains outside the purview of PAT; of this, a very large portion is accounted for by seven or eight energy-intensive MSME sub-sectors. Also, the MSME sector will be third largest sector in terms of opportunities for EE even after 25 years (in 2041).
- The EE drive has to cover an estimated 26 million MSME units in over 180 energy-intensive clusters. Such a 'mass transformation' can be acquired only if various EE initiatives are synergized through the sharing of knowledge and experiences among stakeholders.

- There are persistent challenges and opportunities in promoting EE in the MSME sector, manifesting in the domains of technology, finance and capacity (Figure 1).

“ There are so many stakeholders, so many ministries and institutions working in the MSME sector! Unless we synergize our efforts, work in harmony, we will not get results... ”

**Mr Sanjay Bisariya,
Joint Development
Commissioner,
Ministry of MSME**

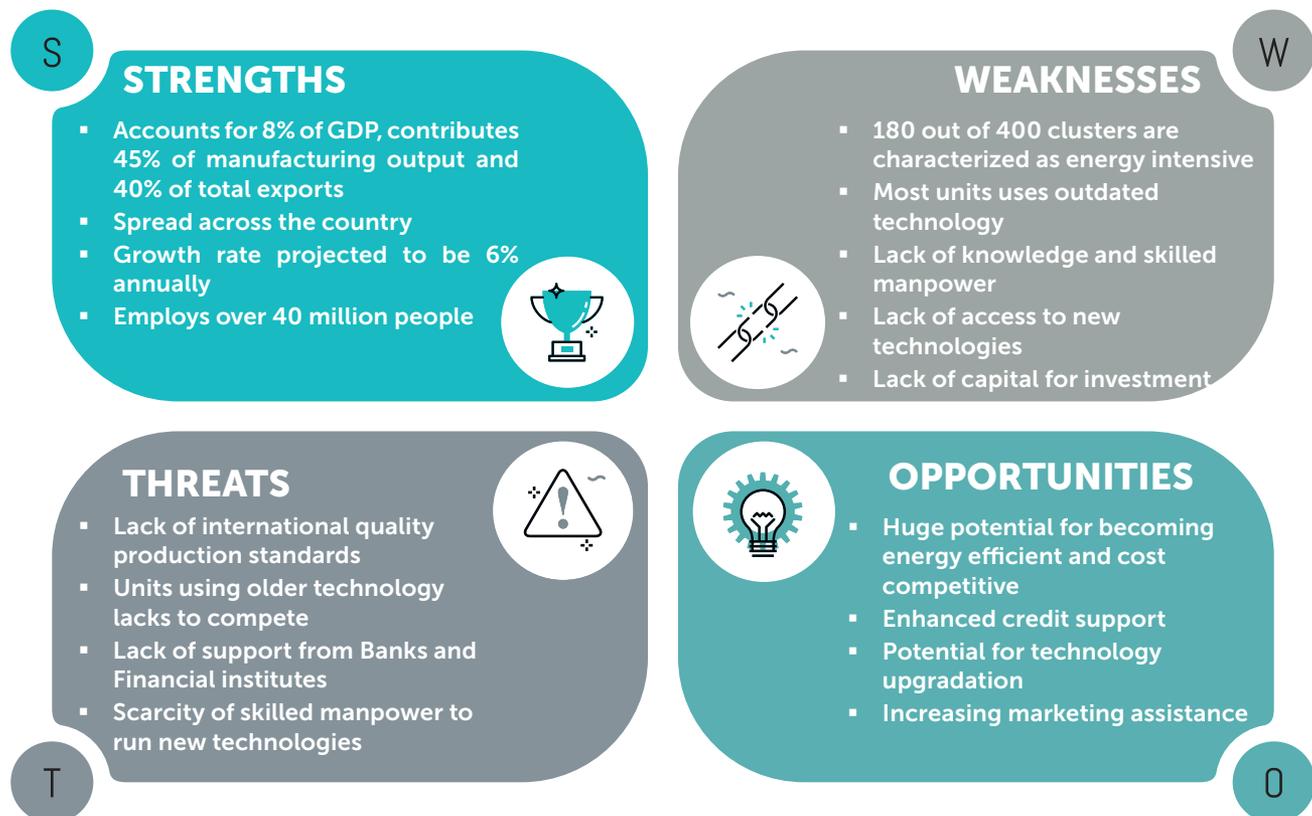


Figure 1. MSMEs in India—strengths, weaknesses, opportunities, threats
Source: BEE



Voices from the ground

Three parallel thematic breakaway sessions followed, during which MSME entrepreneurs and other stakeholders at unit/cluster level voiced their perspectives and ideas on the three broad and interlinked themes of finance, technology, and capacity building. The discussions were intense and highly interactive, facilitated by professional moderators. Some important insights from the breakaway sessions are summarized below.

Pointers to the way forward

The insights provided by the breakaway sessions fed into, and formed the basis for, the deliberations in the three plenary sessions that followed. For each plenary session, the key points from the corresponding breakaway session were presented as field realities and inputs from the ground. Thereafter, experts made background presentations that helped deepen understanding on relevant issues, following which a panel of 'Respondents' discussed possible

Theme	Insights (needs, challenges, ideas)
Finance	<ul style="list-style-type: none"> ▪ Have fewer schemes and place them under a single umbrella to reduce confusion ▪ Simplify and streamline procedures in banks; train bank personnel in EE finance appraisal ▪ There is need for comprehensive schemes that extend beyond financial support to cover technical support too (e.g., '4E') ▪ Create a database of energy use benchmarks at system/ process/ industry level, for banks/FIs to use as yardsticks while assessing proposals ▪ Financial Assistance programs of bilaterals/ multilaterals/ government should be accompanied by a strong Technical Assistance component to support and hand-hold MSMEs in adopting best available technologies ▪ Identify EETs where a price advantage can be achieved from mass procurement and deemed savings (e.g. IE3 motors) ▪ Design schemes for MSME sector that cover ESCOs (as current schemes only address manufacturing MSMEs) ▪ Try out the 'Dubai business model' for ESCOs, where a 'super-ESCO' competitively selects ESCOs for actual implementation
Technology	<ul style="list-style-type: none"> ▪ For MSMEs, the primary barriers to adopting EETs are fluctuating market conditions (making production the top priority); the high capital costs of EETs; lack of customized technological solutions at cluster level; and the lack of support at local level for technology adoption (LSPs) ▪ To generate skilled workforce, industry experts should be involved in academia at two levels, i.e. ITIs and higher education institutions ▪ EETs will be accepted more readily if these are demonstrated/verified in the field ▪ R&D on technologies/products should be carried out jointly by academia and industry ▪ Awareness and knowledge on EETs can be disseminated through innovative use of IT (e.g., help-desks for EETs/BOP, mobile apps)
Capacity	<ul style="list-style-type: none"> ▪ There is need for closer engagement between MSME clusters and local academic/technical institutes, and for the latter to include EE in their curricula ▪ Representation of local industries associations in the governing bodies of training institutions will help communicate the need of the cluster/industries ▪ Identify sector-specific trainers and certify them; local service providers (LSPs) can be strengthened (via 'train-the-trainer' courses by certified trainers) to meet cluster-level training/ capacity building needs ▪ Develop sector-specific and need-based training modules on operation, maintenance and BOPs for equipment /processes ▪ Periodic feedback from industrial associations is required for upgrading the quality of training programs



solutions and outlined the way forward. The key suggestions and recommendations are summarized below for each of the three themes.

Finance

- EE finance can work successfully only by following a holistic approach that overcomes barriers at different levels, from policy to grassroots, using a mix of 'carrots' (economic instruments, incentives), 'sticks' (legislation, rules and regulations, technical standards) and 'sermons' (information, advertising instruments).
- Aggregation of demand, to create 'many takers for one technology', offers the best way to achieve large-scale financing and adoption of EETs (as banks/FIs will not be interested in financing small ticket-size investments).
- Corporates can drive EE among their vendor-MSMEs, i.e., down their supply chains
- Green Bonds offer a good source of funds for banks/FIs to drive EE projects; especially if a multilateral participates, in which case the cost of funds becomes cheaper.
- In the case of ESCO finance, calculation of energy savings can be a conflict area between host and ESCO, as there is often considerable inconsistency in the results worked out by different energy audits due to the numerous variables and baseline changes. The need is for strong M&V systems, and also for standardization of energy audit protocols.

Technology

- For maximum effectiveness, an EE intervention should have clear focus on one of the two broad areas that offer scope for EE improvements: (1) process areas which consume most of the energy in the plant (e.g., melting/heating furnace, dryer, kiln, etc.), or (2) auxiliaries (e.g., boilers, pumps, fans, compressors, motors, etc.). The intervention can then be carried out at one or more of three levels:
 - » Best operating practices (BOPs) which yield relatively low energy savings (1%–2%) at little or no investment; e.g., reducing leakages of oil; air; steam; cleaning light fixtures; etc.
 - » Retrofit, where the existing equipment is modified to make it more efficient, entailing

National Motor Replacement Program (NMRP)

EESL is set to launch a National Motor Replacement Program (NMRP) that aims at large-scale replacement of low-efficiency motors (initially targeting about 120,000 motors in the range of 1.1 kW –22 kW) with EE motors (IE3) through demand aggregation. EESL will do motor load surveys among MSMEs, identify the motors that can be replaced, procure the IE3 motors in bulk and arrange for their delivery to the 'doorsteps' of the MSMEs for installation. In order to incentivize MSMEs to participate in the program, EESL will also offer an extended warranty of 3–4 years on the IE3 motors (against the 18 months warranty offered by the motor manufacturers). In order to establish the energy savings from IE3 motors, EESL tested 50 IE3 motors under actual field conditions in MSME clusters such as Surat, Jamnagar, etc. A few IE3 motors were also tested at the Mahindra & Mahindra Ltd plant. From these tests, EESL obtained a bandwidth of energy savings through the use of IE3 motors—from 5% to 20%. Thus, EESL is undertaking the program based on 'deemed savings' (i.e., not on the basis of theoretical energy savings but by actual energy savings established through pilots).

—as narrated by Mr S P Garnaik,
Chief General Manager, EESL

“ It is very important to note that MSMEs pay the highest cost for power! Large companies typically have captive power generation, and they have very competitive rates. MSMEs often depend on (diesel based) generators, where energy costs could as high as ₹10–₹12 per unit ...

Mr Anil Bhardwaj,
Secretary General, FISME



- » some expenditure but offering a good return on investment (e.g., furnace insulation, VFD installation)
- » Install new EE equipment (e.g., install new furnace, install new screw compressor with in-built VFD)
- EE efforts should also focus on the manufacturers/suppliers of machinery/equipment to MSMEs. A portal could be created, listing EET suppliers, so as to create a market among MSMEs for EE machinery /equipment.
- A major reason why EETs do not percolate in an MSME cluster is that the initial demonstration of the EET usually takes place in a 'progressive' unit, which rarely shares its knowledge with other units in the cluster. Interventions should therefore aim at carrying out at least 3 EET demonstrations per cluster.
- Strengthen cluster-level energy services for MSMEs; for instance, just as Designated Consumers have dedicated 'Energy Managers', cluster specific Energy Managers can be identified for MSMEs.
- There is need for a single national policy for EE in the MSME sector, with a clear roadmap on how EE targets will be achieved. Also, the government should develop sector-specific 'Vision Documents' with regard to technologies, fuels and products. This will ensure that the achievements of EE interventions are not lost because of sudden changes in policies or regulations.

Capacity

- Training of plant operators on best operating practices (BOP) enables an MSME to achieve significant energy savings at low or no cost.
- Skills training centres should focus their courses primarily on meeting the capacity needs of the local MSME clusters/sub-sectors.
- Replication of EETs often requires technology adaptation for each and every replicating MSME unit. EE interventions must therefore factor in this reality, and ensure that capacity building and handholding continue beyond the initial demonstration(s) of EETs.
- EE can be given additional thrust from the demand side, i.e., if clean ('CO₂ free') products and services are demanded by consumers through awareness creation. Germany provides examples of how this approach can succeed (e.g., German Rail, Deutsche Post).

Summing up

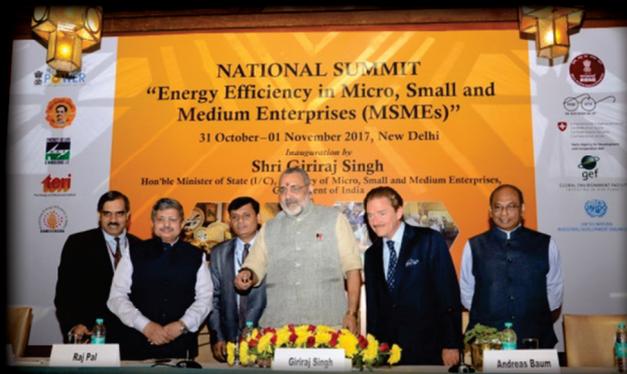
The valedictory session of the Summit was moderated by Dr Ajay Mathur, Director General, TERI. He reiterated the vital role played by the MSME sector in India's economic development, and the consequent importance of improving the productivity of MSMEs through increasing their energy efficiency. Mr Girish Sethi, Senior Director, TERI, summarized the outcomes of the deliberations at the Summit. Mr Rene Van Berkel, UNIDO, outlined the features of UNIDO's Cleantech Innovation Program, being implemented in partnership with MoMSME, under which over 80 innovations have been supported, including EE ceiling fans (being successfully implemented in ceramic clusters for drying applications) and innovative commercial cook-stoves that bring over 30% savings in fuel costs.

Delivering the valedictory address, Mr Ajay Kumar Bhalla, Secretary (Power), Ministry of Power, Government of India, appreciated the efforts made by the different stakeholders in promoting EE in India's MSME sector. In his closing remarks, Mr Abhay Bakre, Director General, BEE, remarked that the discussions at the Summit had helped in highlighting new issues confronting the MSME sector, as well as pointed to the way forward in addressing these issues.

“A major challenge (in workforce skilling) is the drastic change from conventional method to newer technology. For instance, in the Pali textiles cluster, all the Masters who work on jiggers are 50–55 years old. They are experts in choosing colours and in dyeing; but they don't know how to use VFDs on jiggers, they need training for that!

Mr Pradeep Sand,
Secretary, Rajasthan Textile
Processing Association,
Pali





ABOUT SAMEEEKSHA

SAMEEEKSHA is a collaborative platform aimed at pooling the knowledge and synergizing the efforts of various organizations and institutions—Indian and international, public and private—that are working towards the common goal of facilitating the development of the Small and Medium Enterprise (SME) sector in India, through the promotion and adoption of clean, energy-efficient technologies and practices.

SAMEEEKSHA provides a unique forum where industry may interface with funding agencies, research and development (R&D) institutions, technology development specialists, government bodies, training institutes, and academia to facilitate this process.

For more details, please contact

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