SAMEEKSHA

SMALL AND MEDIUM ENTERPRISES: ENERGY EFFICIENCY KNOWLEDGE SHARING



14th Meeting

23 August 2018

ITC Sonar, Kolkata











SAMEEEKSHA

Small and Medium Enterprises: Energy Efficiency Knowledge Sharing

- Platform for pooling the knowledge and experiences of various organizations that are engaged with the Indian SME sector.
- Enables like-minded organizations to coordinate and increase the impact of their activities in different areas in the SME sector.











SAMEEEKSHA

- Provides a forum where representatives of smallscale industry interact with policy-makers, funding and development agencies, R&D institutions, academia, and others, in order to:
 - Highlight the needs of sector/cluster in regard to improving energy efficiency, reducing fuel costs, exploring alternate energy sources, and so on.
 - Point to possible options for exploring, developing, and introducing energy-efficient technologies and practices in the concerned industrial sector/cluster.

- http://sameeeksha.org/











MSME cluster- Eastern region

State	Cluster	Energy Consumption (toe)
Jharkhand	Ranchi Refractory industries	7864
Jharkhand	Chirkunda Refractory industries	23674
Jharkhand	Dhanbad coke oven industries	208254
Jharkhand	Ranchi clay-fired brick making	91574
Odisha	Bargarh Rice Mill cluster	76737
Odisha	Odisha Sponge Iron cluster	1049752
Odisha	Bhubneashwat sea-food	5170
Odisha	Balakati Brass industries	206
Odisha	Ganjam rice mills	1248
Odisha	Behrampur rice mills	52
Odisha	Balasore Plastic industries cluster	2860
West Bengal	Asansol refractory industries	25063
West Bengal	Howrah forundries	2043
West Bengal	Clay-fired brick manufacturing	1730000



National Summit on Energy Efficiency in MSMEs



















Key suggestions and recommendations

Finance

- Holistic approach using mix of carrot, stick and sermons
- Aggregation of demand
- Need for corporates to drive EE among their vendors
- ESCO- Need for strong M&V system

Technology

- Focus on manufacturers/suppliers of machinery/equipment
- More demonstration per cluster instead of one demo in progressive unit
- Strengthen cluster level energy services
- Develop sector specific vision document w.r.t. technologies, fuels and products











Key suggestions and recommendations

Capacity

- Training of plant operators on BOPs
- Focus of skill training centers should be on meeting capacity needs of local MSME clusters
- Handholding during adaptation of technology
- Awareness creation for generating demand for cleaner products and services











An update from SAMEEEKSHA Secretariat: (January 2018 – August 2018)











13th Meeting (January 2018)

Presentations

- SAMEEEKSHA Platform and MSME Summit: an update—Mr Sachin Kumar, Secretary, SAMEEEKSHA and Fellow, TERI
- Achievements under TERI-SDC EESE project— Mr N Vasudevan, Senior Fellow, TERI
- BEE SME Program—Mr Milind Deore, Director, BEE
- BEE- UNIDO- GEF Program— Mr Niranjan Rao Deevela, National Technology Coordinator, UNIDO India
- Recent initiatives by SIDBI on Energy Efficiency—Mr Rajiv Kumar, Deputy General Manager, SIDBI















SAMEEEKSHA Newsletter



TERI-SDC PARTNERSHIP PROJECT: PATH-BREAKING INITIATIVE IN MSME SECTOR

INTERVENTIO

has been a game-changer in the MSME sector. state-controlled framework of reserved markets, The project's successful outcomes are largely subsidies, fixed raw material prices, and other a result of the principles that SDC applies to its protective mechanisms. This protective framework funding programs: of long-term engagement with was now being dismantled, and the MSMEs had to stakeholders, flexibility in strategies, and innovation find ways to upgrade their technologies, practices in activities. Working with SDC has allowed TERI and skillsets swiftly and effectively-or else they to remain closely and continuously engaged would perish in the fiercety competitive globalized with diverse MSME stakeholders at every level for world. The MSMEs also had to contend with a new extended durations; to constantly assess progress challenge: meeting environmental regulations, and make mid-course adjustments and corrections in plans and targets as and when required; and The Rio Conference in 1992 brought about further thereby, to effectively implement the exhaustive awareness on the threats of climate change caused and iterative processes of R&D, technology by CO, emissions The MSMEs lacked the information, demonstration and adaptation, training and capacity technical capacities and wherewithal to upgrade building, and outreach that together constitute the their traditional, inefficient technologies, which in innovative intervention model known as Research, most cases depended on low-grade fossil fuels that Development, Demonstration & Dissemination were high on CO, emissions. It was a situation that (RDDGD)

this remarkable project, for it provides many useful economy- contributing nearly 40% of the nation's MSME sector. In particular, the project experience millions of people underlines the huge opportunities that still exist for improving energy efficiency (EE), environmental performance and productivity among MSMEs: the challenges and barriers that continue to thwart nitiatives aimed at achieving these objectives, and the ways by which the TERI-SDC partnership project has successfully overcome these challenges through the RDD&D model

Foundations

The story of the TERI-SDC partnership began i the early 1990s, a time when the Indian MSME sector was just coming to grips with the enormous disruptive changes brought about by the progressive liberalization of the nation's economy post-1991. It

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he advent of 2018 also brings to an end the was a traumatic time for MSMEs. For decades, they 25-year-long partnership project between had been shielded from the competitive currents TERI and SDC. In many respects this project of both indigenous and global markets within a which were becoming increasingly stringent in India demanded urgent solutions, particularly considering It is an appropriate moment to look back on the vital role that the MSME sector played in India's essons and insights for future interventions in the overall industrial output, and providing livelihoods to



Mar' 18 Issue (Theme: TERI-SDC Partnership project)

- Intervention in four energy-intensive MSME sub-sectors: Grey Iron Foundries, Glass bangles, brick kilns and biomass heat applications
- Research, Development, Demonstration & Dissemination
 - CO₂ savings- 1.27 million tonnes; Energy savings- 392,000 toe













IN THIS ISSUE.

This issue carries, as its theme article, a brief account of an innovative strategy to promote energy efficient (EE) technologies on a large scale, known as 'saturation' or 'deep dive' approach. The article explains the key features of the deep dive approach, contrasting it with the elements that constitute the approach known as research, development, demonstration and dissemination (RDDBD). In essence, the deep dive approach focuses on promoting commercially available EE technologies such as EE motors. EE pumps and EE lighting among a large number of units within an MSME cluster, through conducting detailed energy audits on the MSME units to identify energy conservation measures (ECMs), and then providing technical assistance to the units for implementation of the ECMs. In contrast, the RDD&D approach focuses on developing and promoting new EE solutions through R&D, innovation and capacity building, in processes where there are no commercially viable 'off-the-shelf' cleaner solutions available to replace the existing traditional, low-efficiency technologies being used by the MSMEs.

By way of illustration, the article summarizes the deep dive initiative that was undertaken by the TERI-SDC partnership project in the Raikot foundry cluster during 2015-17. Detailed energy audits were conducted on 110 MSME foundries, enabling the identification of 1040 ECMs, of which over 700 ECMs (67%) were in the nature of best operating practices (BOP) or improvements of existing plant/processes (retrofits) that required low or no investments nd promised paybacks on investments in less than a year. By the end of the project, 757 ECMs (over 70% of the total) had been implemented by the foundries concerned-illustrating the effectiveness of the deep dive strategy. The article underlines the huge potential that exists for applying the deep dive approach to promote EE technologies extensively in hundreds of energy intensive MSME clusters across India.

SAMEEEKSHA Secretariat

'DEEP DIVE' APPROACH FOR CLUSTER-WIDE ENERGY EFFICIENCY—A CASE STUDY IN RAJKOT ENGINEERING CLUSTER

INTERVENTION

Backdrop

general, there has been very little focus on R&D (innovation) of cleaner technologies for MSMEs in India. It is important to note that energy efficient (EE) designs of furnaces are not commercially available for many of the traditional energy-intensive MSME sub-sectors like glass, ceramics, grey iron melting, aluminum, brass, steel rolling, hand tools, and so on. In such situations, the design and replication of new plants requires R9D, demonstration and customization during each . Level 3 (L3)-revamps: new plant/process replication, adding to the implementation costs and time. Research, development, demonstration and dissemination (RDD&D) of cleaner technologies is effective in developing technological capacities and

promoting EE technologies and practices, especially in processes where no commercially viable 'offthe-shelf' cleaner solutions are available to replace the existing traditional, low-efficiency technologies being used by MSMEs (see SAMEEEKSHA, March 2018). However, by its very nature, an RDD&D intervention necessitates a longer time period, higher capital and greater risks. As a consequence, this approach is preferred only when development of technological capacities through R&D on new EE solutions is intended.

Deep dive approach

On the other hand, there are several energy efficient technologies (EETs) like EE motors, EE pump sets, EE compressors and so on already available commercially in the market, but yet to be widely replicated among MSMEs. Industry has been slow to adopt these technologies either due to low awareness levels or the relatively higher cost of these EETs. In order to promote these technologies, an intervention built around detailed energy audits and Rajkot, in Gujarat, is one of the largest engineering subsequent technical assistance for implementation MSME clusters in the country comprising a range of

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(ECMs) within a selected MSME cluster could be followed. This approach, of promoting commercially available EETs among a much larger number of MSMEs in the cluster, could be called a 'deep dive' or 'saturation' approach to promote EETs. Deep dive projects help in identifying energy efficiency improvements at three levels:

- · Level 1 (L1)-BOP and good housekeeping
- Level 2 (L2)—retrofits: major improvements in existing plant/process

mercially available but not wide

Low energy saving (L1) Moderate energy saving (L2) Level 1 (BOP, poor tigh energ low cost or no cost low implementation time Level 2 (retrofits) medium to high cos more implementation time Level 3 (revemps) - high cost long implementatio as at different break of deep div

TERI-SDC's deep dive initiative in **Rajkot foundry cluster**

of the identified energy conservation measures energy-intensive sub-sectors such as aluminium,

Jun'18 Issue (Deep dive approach: Rajkot Engineering cluster)

Focus on promoting EE technologies that are commercially available but not widely adopted in MSME clusters











Discussions during the last meeting: Action points for the Secretariat

Preparation of short film on SDC-TERI partnership program

Organization of SAMEEEKSHA meetings at cluster level – 'last mile connectivity'













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