

CoSMiLE UPDATE

A platform for learning and action for small and micro enterprises

Editorial

Since joining SDC in 2006 and during the three different positions I held in the agency in Switzerland and in India, CoSMiLE is the only programme I have had the chance to follow up all through. I was given the chance to be the so-called Project in Charge of CoSMiLE during my posting in SDC India in 2008–2009.

CoSMiLE was started in 1994 by visionaries of the development sector, who looked beyond the traditional development programmes and wanted to make a contribution not only to social and economic development, but also to the environmental dimension of sustainable development. At a time when climate change was not making the headlines, this pioneer project aimed at contributing to the efficient use of resources as well. Low carbon economy was not a term widely used then, but one of the components of the project was to support the development of a less carbon intensive small scale industry sector which would be able to compete internationally in a globalized world where environment standard would slowly become international benchmark.

Today, under the UN climate change negotiations, in an arena where all countries are represented, technology transfer to support energy efficient technologies and renewable energy is a key topic. The 'Bali Action Plan' calls for enhanced action on technology transfer (for climate change mitigation and adaptation) by removing obstacles, accelerating the development, diffusion and transfer of affordable environmentally sound technologies and for cooperation on research. The main idea is that developed countries should support technology transfer to developing countries. In the negotiation process the proposal is to set up a Technology Mechanism with two main components: a Technology Executive Committee (strategic guidance) and a Climate Technology Centre and Network. The network would be constituted by regional Technology Centres to support cooperation, research, innovation and capacity building aiming at the dissemination of cleaner technology. TERI with its partners, the collaborating SME enterprises and SDC have already started this effort 16 years ago. TERI and its Industrial Energy Efficiency Division could be seen as an early Centre, of the kind that the UN could use as a model to deploy worldwide. It is therefore very important that the lessons of CoSMiLE are shared internationally. I am looking forward to the event which will take place during the UN climate change negotiation in Cancun in December 2010 and where TERI will present the way technology transfer can and has successfully been addressed.



Yuka Greiler

Programme Manager

Global Programme Climate Change, SDC Berne, Switzerland

Contents

In this issue

- Platform for energy efficiency takes shape
- Workshop on promoting energy efficiency in MPC cluster
- SDC Country Director visits Firozabad cluster
- BEE extends support to energy efficiency initiatives in Firozabad
- Promoting resource efficient bricks
- Promoting healthcare services for foundry workers in Howrah
- Spurring DBC replication in Coimbatore foundry cluster



The Energy and Resources Institute

 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Platform for energy efficiency takes shape

The 3rd Coordination Committee Meeting of the Platform for Energy Efficiency in the MSME sector was held in TERI on 23rd September 2010. The meeting was chaired by Dr Ajay Mathur, Director General, BEE. The participants included Dr Gerolf Weigel, Deputy Country Director, SDC; Mr Abhay Bakre, Joint Development Commissioner, Ministry of MSME; Mr Antonio Levissianos, Officer in Charge, UNIDO; and Mr Manoj Mittal, General Manager, SIDBI. Among the other participants were representatives from TERI, BEE, SDC, JICA, DFID, GTZ/IGEN, KfW, industry associations, consultancy organizations, and NGOs.

Dr Mathur expressed gratitude to SDC for supporting the initiative to create a Secretariat for the Platform at TERI, and observed that the growing participation at Platform meetings reflects the commonality in interest in promoting the development of the MSME sector through energy efficiency improvement. As the Platform is still in the process of evolution, it is important for the group to remain engaged, and learn from each other so as to give proper shape to the Platform's structure and guide its activities. Knowledge sharing is what the Platform is about.

The participants agreed on a working name for the platform: 'SAMEEEKSHA', standing for 'Small And Medium Enterprises - Energy Efficiency, Knowledge Sharing'.

The participants discussed in detail about the membership, activities and operational aspects of the platform with specific reference to the website and



3rd Coordination Committee Meeting

newsletter for the Platform. It was agreed that the website should be as dynamic as possible and provide information on different energy intensive MSME clusters – including cluster level activities by various agencies, best operating practices and case studies. The *Sameeksha* newsletter will be brought out in English and Hindi and can be distributed through the Ministry of MSME by utilizing its existing state-level network. Other language editions will be considered based on cluster needs. One of the key activities of *Sameeksha* will be to collect comprehensive data on energy consumption of the MSME sector; in particular energy-intensive clusters. This is because accurate and reliable data is generally not available at present.

Workshop on promoting energy efficiency in MPC cluster

A workshop titled 'Promoting energy efficiency in MPC cluster' was organized at the CII, Chandigarh on 3rd August 2010 under the TERI-SIDBI project to promote business development services (BDS) in the Mohali-Panchkula-Chandigarh (MPC) industrial cluster. The event was attended by over 130 participants including representatives from the Industries Association of Chandigarh (IAC); Mohali Industries Association (MIA); Chamber of Chandigarh Industries (CCI); and Haryana Chamber of Commerce and Industry (HCCI). The purpose of the event was to review the progress in strengthening BDS in the cluster, and to generate awareness on the benefits of this initiative.

VISION OF SAMEEEKSHA

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



Workshop on energy efficiency in MPC cluster

Mr Girish Sethi, Director, TERI, briefly outlined the project objectives and activities, which are focused on three primary areas: (1) energy efficiency, (2) skills upgradation, and (3) vendor development (as many MSMEs in the MPC cluster cater to a few large-scale enterprises such as railways and tractor manufacturers). The project facilitated energy audits on four MSME units by two BDS providers: namely, Delta Energy Nature (Mohali) and Technical & Management Consultancy Center (Panchkula). It also enabled the training of 20 workers on 'Computer Numerical Control' (CNC) machine operation by Sam Techno School (Mohali). The project will extend energy audit services to other units, facilitate the training of more workers in CNC machine operation, and improve the performance and capabilities of MSMEs catering to large-scale clientele, i.e., vendor development.

Mr Kanwaljit Singh Mahal, President, MIA, Mr Vishnu Goyal, President, HCCI, Mr Arun Mahajan, President, IAC, and Mr Naveen Manglani, President, CCI, acknowledged the usefulness of energy audits and expressed their keenness to participate in the energy audit exercise proposed under the project. Mr Upinder S Dhingra from TERI-SIDBI Project Office summarized the main features of the four energy audits conducted so far. The project proposes to facilitate 48 more energy efficiency studies/energy audits in the MPC cluster.

Mr Sanjay Namdeo, Counsellor, Energy, CII-L M Thapar Centre for Competitiveness

for SMEs, suggested that a unit should follow a three-pronged approach in improving energy efficiency; (1) optimize capacity utilization of equipment, (2) fine-tuning, and (3) undertake technology upgradation. Mr Milind Chittawar, Director, SEETECH Solutions, Nagpur stressed that the energy audit recommendations must be implemented to actualize the benefits. Mr Gurinder J Singh, Delta Energy Nature, drew upon two energy audits to describe methods for improving the energy performance: efficient lighting through replacement of incandescent bulbs with CFLs; replacement of low-efficiency motors; furnace insulation; monitoring and optimization of furnace temperature; and so on.

Chief Guest Mr S Mukhopadhyay, General Manager, SIDBI, described the transformation of SIDBI from a refinance agency to a direct lender to MSMEs, and outlined the various financial schemes being implemented by SIDBI for the benefit of MSMEs. As of March 2010 around 3300 MSMEs have availed of benefits under SIDBI schemes; the response from the MPC cluster has particularly been positive, indicating the dynamism of MSMEs in this region. Noting the positive impacts of the project, Mr Mukhopadhyay stated that SIDBI would bear part of the energy audit costs.

SDC Country Director visits Firozabad cluster

On 27th July 2010, Ms Sybille Suter, the new Country Director of SDC-India, visited the



Ms Sybille Suter, SDC Country Director, at Firozabad

Firozabad glass industry cluster. At Firozabad, she visited a bangle-making unit 'S Rajeev Glass Works' which is operating two TERI-design pot furnaces – the first was adopted in June 2006, and the second in April 2010. The owner Mr Lalitesh Kumar Agarwal elaborated on how the recuperative furnaces have brought him considerable benefits in terms of fuel savings. For instance, the second furnace gives him 30% fuel saving compared to the conventional gas-fired pot furnace. This translates into a simple payback on his investment of less than two years and saves 400,000 Sm³ per year of natural gas.

BEE extends support to energy efficiency initiatives in Firozabad

BEE is supporting TERI in implementing a project titled 'Improving energy efficiency in the Firozabad glass cluster'. Besides strengthening the efforts to promote adoption of the two energy efficient technologies developed by TERI under the SDC-supported project—the recuperative pot furnace (estimated energy saving = 20,000 toe/year) and the gas-fired muffle furnace (estimated energy saving = 8000 toe/year)—the project will focus on identifying energy efficiency options in (1) reheating furnace (*sekai bhatti*) and (2) tank furnace.

There are about 120 *sekai bhattis* in Firozabad; these operate within pot furnace units and are gas/coal fired. A preliminary survey by TERI suggests that there is scope for energy savings of 20–25% in *sekai bhattis* through waste heat recovery and improved insulation. TERI will evolve energy efficient



Regenerator in a tank furnace unit

sekai bhattis by working closely with local stakeholders (entrepreneurs, suppliers, LSPs). Bankable detailed project reports (DPRs) will be prepared to facilitate adoption of the energy efficient *sekai bhattis*.

There are around 55 gas-fired tank furnace units in the cluster with majority having a daily production capacity of 15–50 tonnes per day. Tank furnaces are equipped with waste heat recovery systems (regenerators). TERI is conducting energy audits of tank furnace units to identify potential energy conservation measures and prepare bankable DPRs.

Promoting resource efficient bricks

The following events were organized during the quarter under the UNDP-GEF project on 'Energy Efficiency Improvements in Indian Brick Industry', being implemented in the field by TERI.

Regional workshop

A regional workshop was organized at TERI–Southern Regional Centre, Bangalore on 28th June 2010. The program focused on marketing of resource efficient bricks (REBs) such as hollow blocks and perforated bricks. It was attended by about 70 participants comprising brick kiln entrepreneurs, architects, builders, technology providers, financial institutions and government organizations such as CPWD and Khadi and Village Industries Commission (KVIC). The event witnessed keen interest among participants on issues such as the availability of technologies, product diversification and the market for REBs.

Mr Anil Arora, UNDP, New Delhi provided a brief background about UNDP activities in India including its work with the brick sector. Mr Jasim, an architect, spoke on the history and use of hollow blocks in construction. Mr N Vasudevan, TERI, described the UNDP-GEF project and the role of Local Resource Centres (LRCs) established in different regions under the project. He also outlined various project activities that would help in adoption of REBs in India, and the availability of knowledge sharing tools such as website (<http://www.resourceefficientbricks.org>), brochure and training material.



Demonstration of improved construction practices at Wienerberger plant

Mr Rajanna, KVIC, spoke on the Prime Minister's Employment Generation Programme (PMEGP) and the role of KVIC in promoting energy efficient technologies. Mr Rudy van Reeth, Wienerberger, Bangalore made a brief presentation on the company's fully-automatic brick production facility established at Kunigal, 60 kilometres from Bangalore, for the production of different types of REBs including hollow blocks. Mr Ramesh, architect, outlined the advantages of using REBs in various construction applications such as building walls and roofs.

Field visits to brick units using machinery

On 29th and 30th June, the 30-odd participants at the Regional Workshop were taken on field visits to selected brick kiln units which use machinery or extruders to make solid bricks as well as other types of brick products such as hollow blocks. On 29th June, the participants visited three brick kiln units in the Malur brick cluster which have initiated pilot production of REBs using semi-automatic machines. The estimated investment for adoption of the complete extruder system along with shed and DG set is about Rs 1.5 to 2 crore. On 30th June, the participants visited Wienerberger Brick Industry Pvt Ltd—a fully automated plant set up with an investment of about Rs 185 crore and producing REBs mainly for the southern region.

An interesting feature of the Wienerberger plant is the 'mason training centre' located in its premises. Given the fact that REB products such as hollow blocks are new to the

construction industry in India, the company recognized the need to train masons in the use of REBs. The training centre conducts regular training sessions for masons in order to upgrade their skills in the handling of hollow blocks in building construction.

Sensitization workshop on REBs

On August 18th, a sensitization workshop was organized for builders and architects at Coimbatore, Tamil Nadu in association with Association of Consulting Civil Engineers (ACCE), Coimbatore Chapter. The participants included about 15 builders and architects from Coimbatore and a few progressive brick kiln entrepreneurs. The workshop was presided by the ACCE Secretary, Mr V Gopalakrishnan and the ACCE Chairman, Mr C M Dharmalingam. TERI provided an overview of the UNDP-GEF project, the present technology status of the brick industry, and the importance and many advantages of REB brick products in the construction sector—for example, better finishing, improved brick quality, savings in construction practices and better insulation properties of walls. The participants were also shown a short film on construction practices with REBs, prepared under the project.

The presentation was followed by open discussions which focused on certain critical issues related to the adoption of REB products. A builder observed that substantial breakages take place while using REBs during construction, and that better masonry practices are needed to address this problem. Other issues discussed included: (1) quality of REBs in terms of compressive strength as compared to solid bricks; (2) need for more than one type of hollow block, for this would help in minimizing cutting/ breaking of bricks while carrying out plumbing and wiring activities; and (3) need for trained manpower (masons) to ensure better handling during construction and to minimize wastages.

Awareness meeting on REBs

An awareness meeting was organized along with Tamil Nadu Brick and Tile Manufacturers' Federation on August 19th at Chennai. About

12 brick kiln entrepreneurs participated in the meeting, including one entrepreneur who has recently started producing solid bricks with machinery acquired from China. Also present was a technology supplier (Mr Periyasamy from Malli Bricks), who provides technical services in design and commissioning of fixed chimneys and pug mills. TERI provided a background of the UNDP–GEF project and overview of technological options that are available to the brick industry for upgrading their production processes. Typically, all brick industries in Chennai follow manual brick production process and use imported coal (low ash) from Indonesia for firing bricks. Mr Periyasamy stressed the importance of soil preparation or pugging before it is moulded. Better preparation of soil is of paramount importance as it helps in improving the quality of moulded bricks.

The presentations were followed by open discussions among the participants. Some of the important points are summarized below:

- The entrepreneurs have realized the importance of technology upgradation with the entry, into the Chennai market, of brick products manufactured by Wienerberger, Bangalore.
- Availability of labour has generally been an important issue, and the entrepreneurs are looking for suitable options to manual moulding practices
- Large investments are required for adopting machinery in brick making; this could be a major issue as it would influence the overall production cost of bricks and the competitiveness of a semi-mechanized/mechanized unit vis-à-vis other brick kiln entrepreneurs in the local market.

The participants at the meeting were of the opinion that an exposure visit to brick kiln units that have adopted machinery would help them decide on whether or not to adopt mechanized REB production.

Promoting healthcare services for foundry workers in Howrah

As part of a social action initiative under CoSMiLE, TERI and the NGO partner IMSE (Institute for Motivating Self Employment) have been making efforts to bring about

improvements in the working environment of workers in the Howrah foundry cluster. One of the most important needs of workers is to have access to basic healthcare services. Most of the workers are hired on contract basis, and therefore cannot avail of health services available to regular (registered) workers under the Employees' State Insurance (ESI) scheme of the government. As a consequence, they have to seek help from private doctors, which entails considerable expenditure and a strain on their already scarce income.

The project has been organizing periodic health awareness programs and check-up camps for workers in small groups in selected foundries at Howrah. While these events have received encouraging response, there is clearly a need to expand their ambit, and to increase the range and quality of health care services. During the meetings of the Worker Owner Forum (WOF) promoted by the project, workers have been pressing for a permanent system for healthcare.

After considerable efforts, a cooperative of foundry workers—the Howrah Foundry Workers' Health Services Cooperative Society—was successfully established and registered under the West Bengal Cooperative Societies Act. About 60 workers from various foundry units have joined the Society. Thanks to the initiative taken by Mr Sandip Datta, President of Howrah Foundry Association, the Society has been able to set up a small primary health polyclinic for foundry workers, which was inaugurated on 17th August 2010.

Since its inception, the Society has helped 145 workers undergo medical examination at the polyclinic. The Society also provides medicines to the workers at a subsidized rate of 40–50%. The medicines are obtained from the Community Development Medicinal Unit (CDMU), which procures and supplies low-cost generic medicines (instead of the much costlier branded medicines) to registered voluntary organizations providing free or subsidized healthcare (see **Box**). Health cards are being issued by the Society. While the foundry workers and members pay Rs 20 as fees for any one of up to five family members, general patients have to pay Rs 40 each as fees. The Society has also tied up with Ramakrishna

CDMU: PROVIDING ESSENTIAL MEDICINES AT AFFORDABLE PRICES

Community Development Medicinal Unit (CDMU), West Bengal, is an independent not-for-profit health care organization, set up in 1984, that facilitates access to essential medicines. It runs a project for supply of quality assured essential primary care medicines at affordable price to around 645 voluntary organizations and tea gardens, providing free or subsidized health care to marginalized sections of the community. Medicines are purchased in bulk directly from the manufacturers and can therefore be supplied to member organizations at prices substantially lower than in the open market. For more details see <http://www.cdmubengal.org/>

Mandir Path, a pathological centre, for clinical examination of patients at low cost.

Spurring DBC replication in Coimbatore foundry cluster

TERI conducted field assessments of recently commissioned DBCs in Coimbatore foundry cluster and also interacted with the entrepreneurs who have evinced interest in switching over to the TERI design. Some of the visits are summarized below.

- **Eltex Super Cast:** Two DBCs were commissioned in this unit in the first week of May, 2010. The DBCs were fabricated and commissioned by the Local Service Provider (LSP) promoted under the project— Mr Nagendran,



DBC at Eltex Super Cast

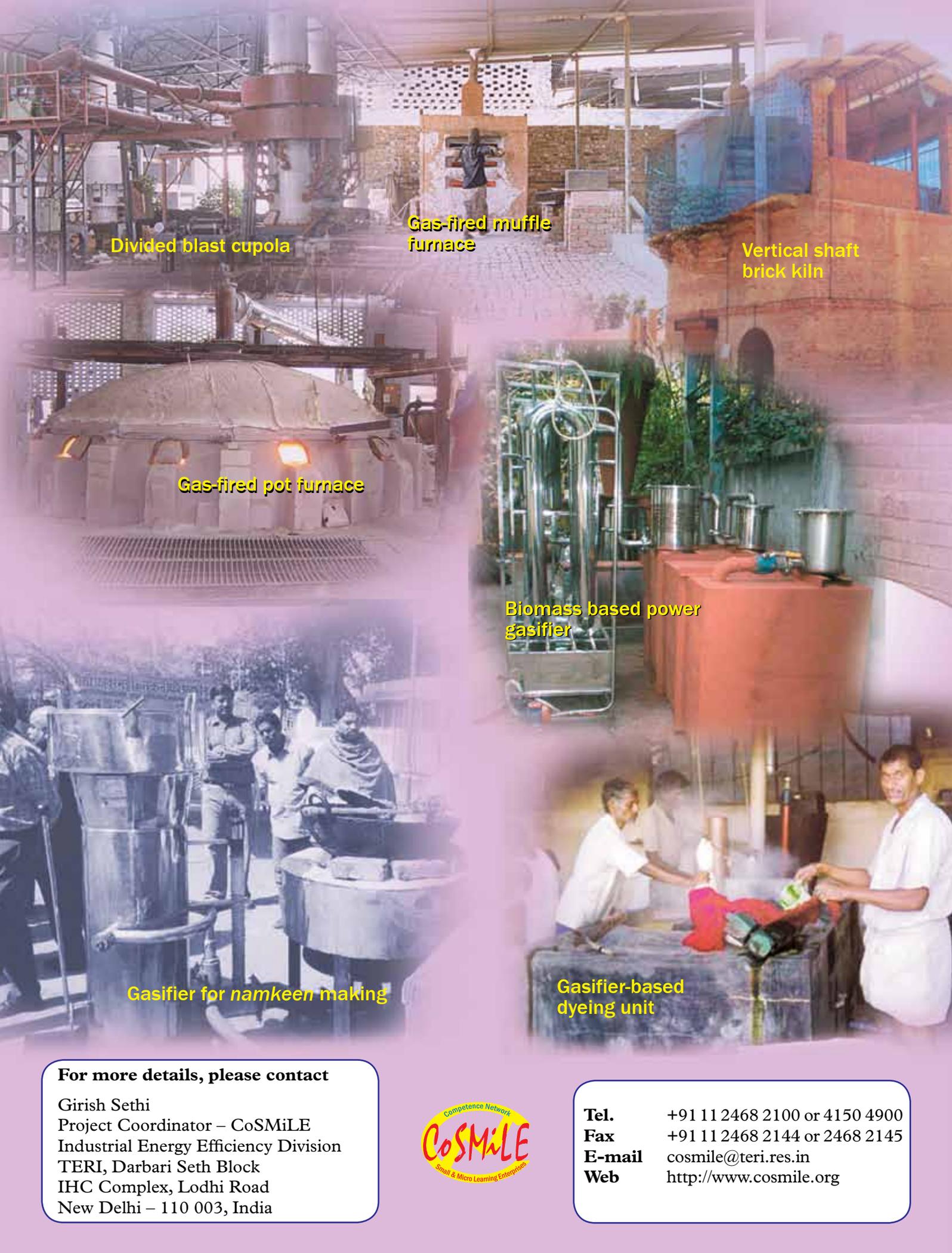
proprietor, Saravana Engineering Works. It is noteworthy that Mr Nagendran and his team have developed their capabilities and confidence to such an extent that they undertook this task largely on their own, with the TERI team mainly providing advisory and backup support. While the entrepreneur expressed his satisfaction with the performance of the new DBCs, discussions during the visit revealed that factory personnel needed further strengthening of their knowledge in order to improve their operating practices. Accordingly, the TERI team trained the personnel on-site on the relevant areas such as estimation of split charge and bed preparation.

- **Nirmal Pumps (Pvt) Ltd:** This unit is in the process of acquiring two 24-inch DBCs. The cupolas are being fabricated by Saravana Engineering Works. They are likely to be commissioned during the period October–December 2010.
- **Allied Castings:** The entrepreneur, Mr D Rajendran, had participated in the training program on 11th August and expressed his interest in switching over to the TERI-design DBC from his conventional cupola. Relevant details were collected from the unit to draw up specifications for the proposed DBC.

At least three other foundry units have evinced interest in replacing their existing melting systems with TERI design.

SYNERGY AT CLUSTER LEVEL

TERI conducted a training program on August 10–11, 2010 in association with APITCO Ltd (a consultancy organization promoting business development services with the support of SIDBI) – an example of synergy in various initiatives at cluster level. The training focused on best operating practices (BOP) for the DBC, and was targeted at supervisors and cupola operators. Over 50 participants attended the program.



Divided blast cupola

Gas-fired muffle furnace

Vertical shaft brick kiln

Gas-fired pot furnace

Biomass based power gasifier

Gasifier for namkeen making

Gasifier-based dyeing unit

For more details, please contact

Girish Sethi
Project Coordinator – CoSMiLE
Industrial Energy Efficiency Division
TERI, Darbari Seth Block
IHC Complex, Lodhi Road
New Delhi – 110 003, India



Tel. +91 11 2468 2100 or 4150 4900
Fax +91 11 2468 2144 or 2468 2145
E-mail cosmile@teri.res.in
Web <http://www.cosmile.org>