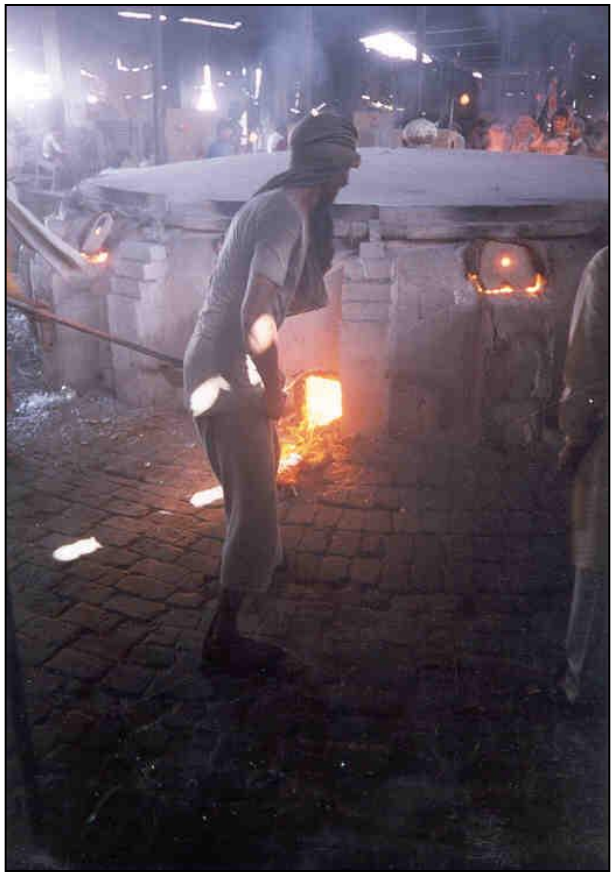
AN OVERVIEW OF TERI-SDC PARTNERSHIP PROGRAM

Creating Innovative Solutions for a Sustainable Future

09 January 2018

Salient features of MSMEs

- Many energy-intensive traditional industries like glass & ceramics, foundry, food processing, brick and so on are geographically clustered
- Inefficient resource use
- Little R&D efforts
  - Under-developed support institutions and local service providers
  - Limited capacity to innovate



Why energy efficiency

- Energy efficiency was considered as a way to :
  - Address sustainability issues
  - Make a difference in MSME sector

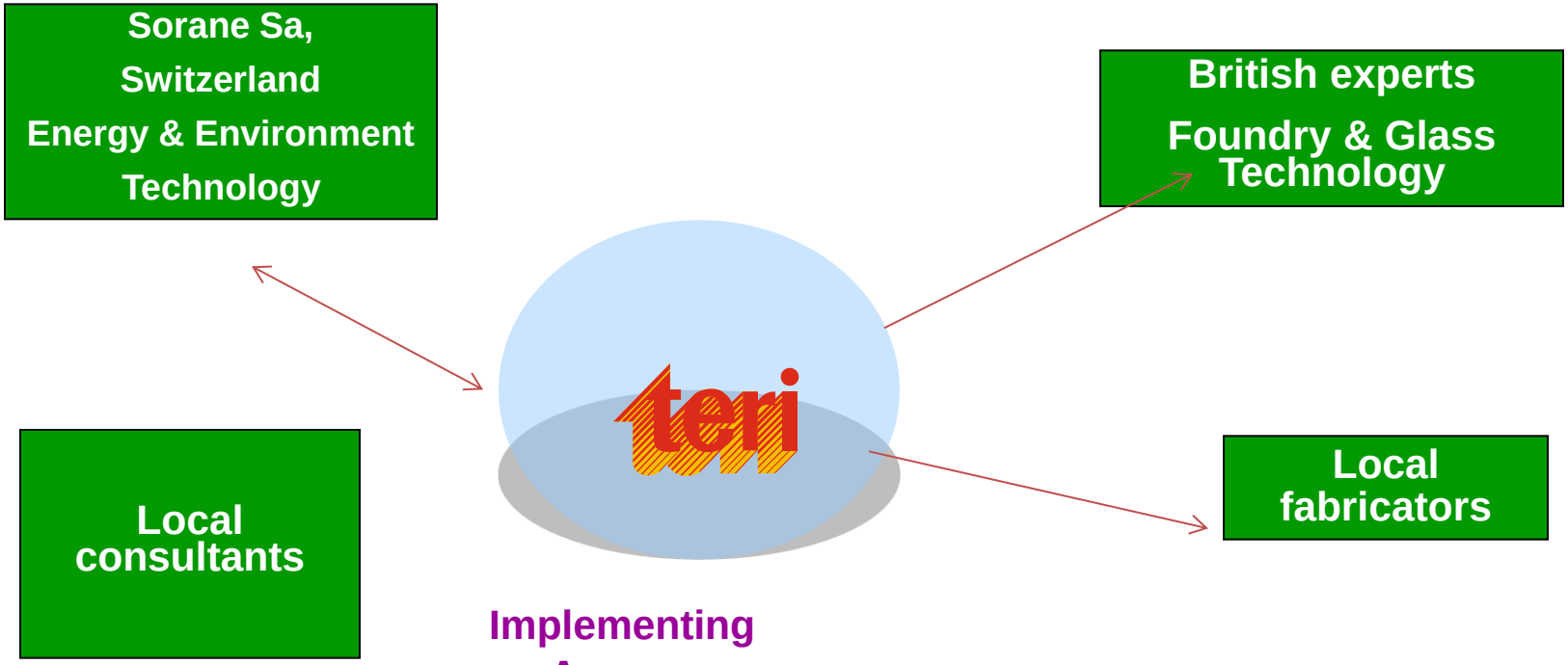
'Understanding 'areas' and 'Levels' in EE

	Area 1 Plant auxiliaries	Area 2 Process
Level 1 Good housekeeping measures	Reduce leaks (air, steam etc)	Furnace operation
Level 2 Retrofits and revamps	Install variable speed drive	Install WHR
Level 3 New plant or process designs	Install new equipment	Install new furnace

Salient features of TERI-SDC project

- Identify energy intensive MSME sectors
- Collaborate with experts (both international and local) to develop/modify (R&D) a cleaner technology as per local needs of the sector
- Demonstrate EE technologies as per local needs
- Disseminate demonstrated technology by building/ strengthening local capacities of service providers/users
- Facilitate implementation of energy conservation measures and best practices (level 1 & 2)

Supporting partners in technology development



Sponsor:

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Embassy of Switzerland in India

Glass sector

Pot furnace segment

Conventional coal fired

Recuperative natural gas fired

Glass sector …contd.

Muffle furnace segment

Coal fired

Natural gas fired

Foundry sector

Conventional cupola

Divided blast cupola (DBC)

Brick sector

Bull's trench kilns (BTKs)

Clamp kilns

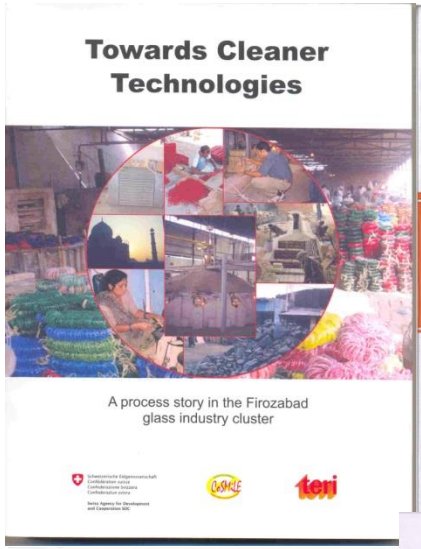
Vertical shaft brick kiln (VSBK)

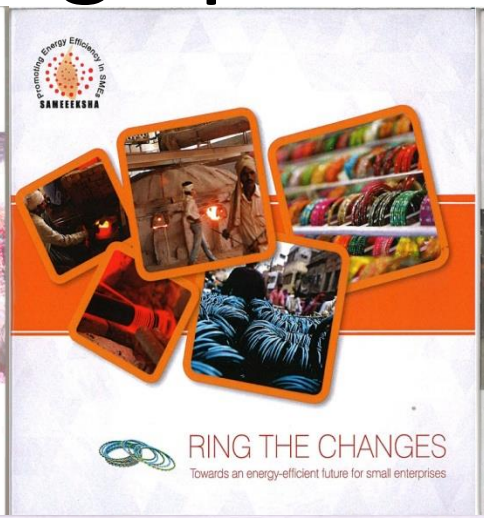
Technology developed under the project

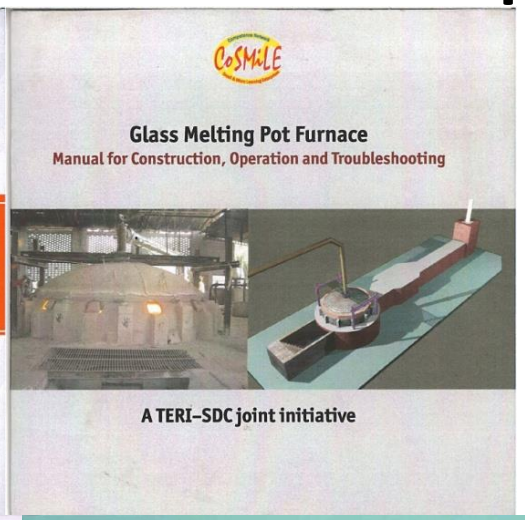
Sector	Technology developed	Energy saving potential
Glass	• Natural gas fired pot furnace with recuperator • Natural gas fired muffle furnace	• 25-50% • 10-15%
Foundry	• Divided Blast Cupola (DBC) • Best operating practices in cupola • Venturi scrubber pollution control system	• 25-65% • Less than 70 ppm of suspended particulate matter
Brick*	• Vertical shaft brick kiln (VSBK) • Best operating practices in BTKs	• 20-40% • 5-10%

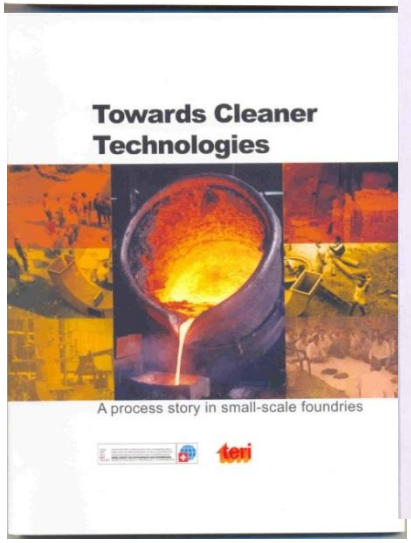
* Technology transfer from China along with other partners

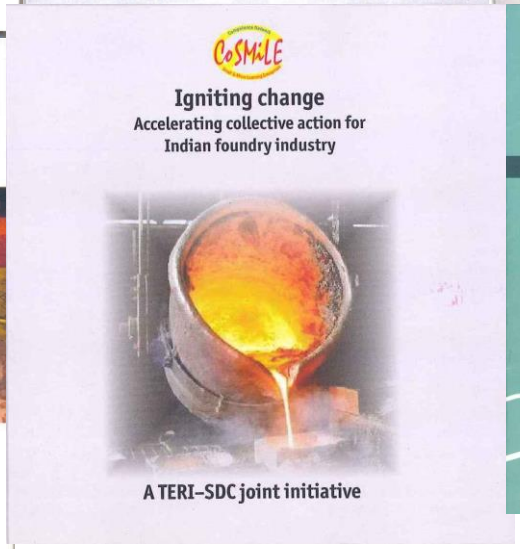
Knowledge products developed

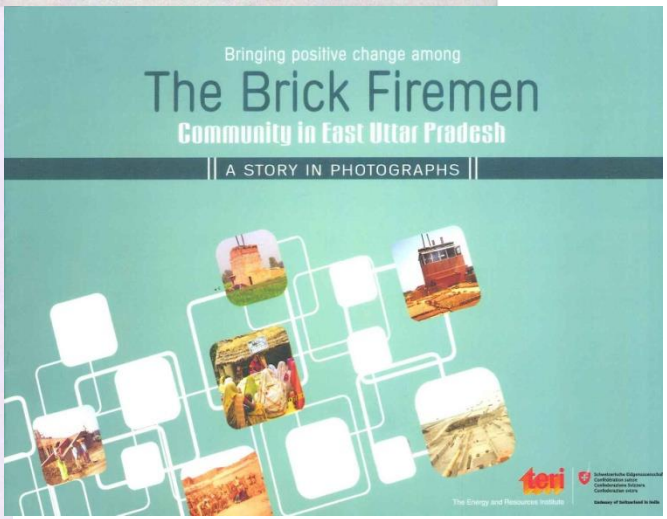












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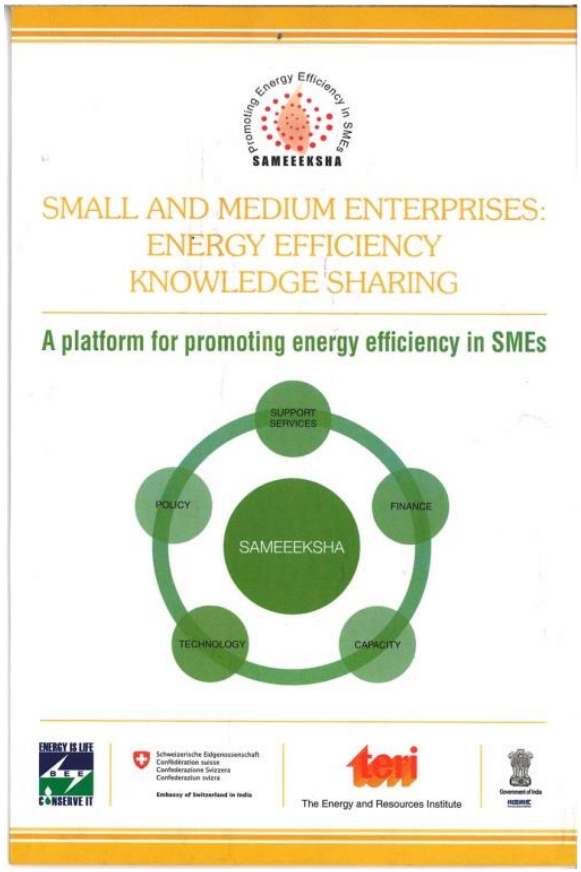
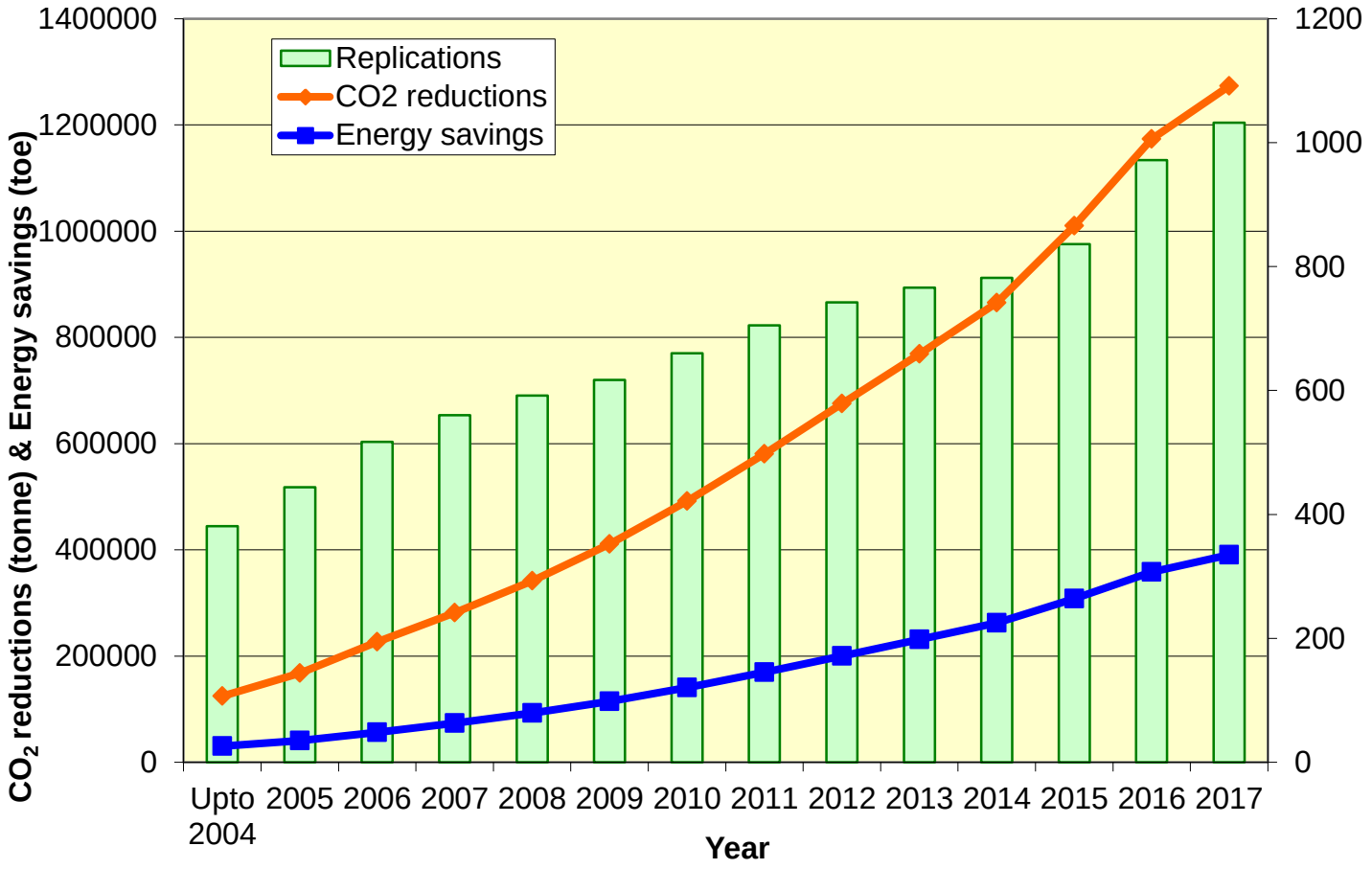
SAMEEEKSHA platform for knowledge sharing

- SAMEEEKSHA - Small And Medium Enterprises: Energy Efficiency and Knowledge Sharing
- Partnership with Bureau of Energy Efficiency (BEE) and Ministry of MSME
- Quarterly newsletters and website for information sharing of case studies, books, videos, presentations etc.



Project impacts



Estimated CO_2 reductions of 1.27 million tonne & energy saving of 390,000 tonne of oil equivalent (toe)

Major activities during previous phase (2014 – 17)

1. **Strengthened SAMEEEKSHA platform**

   - Prepared Energy profiles of about 100 MSME clusters
   - Organised platform meetings
   - Revamped website launched during MSME summit
   - Prepared MSME energy map of India
   - Published newsletters providing EE initiatives and potential in MSME sector

http:/www.sameeeksha.org

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Major activities …*contd.*

2. Foundry sector EE interventions

- Energy audits and technical assistance in implementation provided to 110 foundries in Rajkot cluster (Gujarat)
- Capacity building and Best Operating Practices (BOP) imparted to 80 foundries in Howrah and Ahmedabad foundry clusters

Veneering of furnace

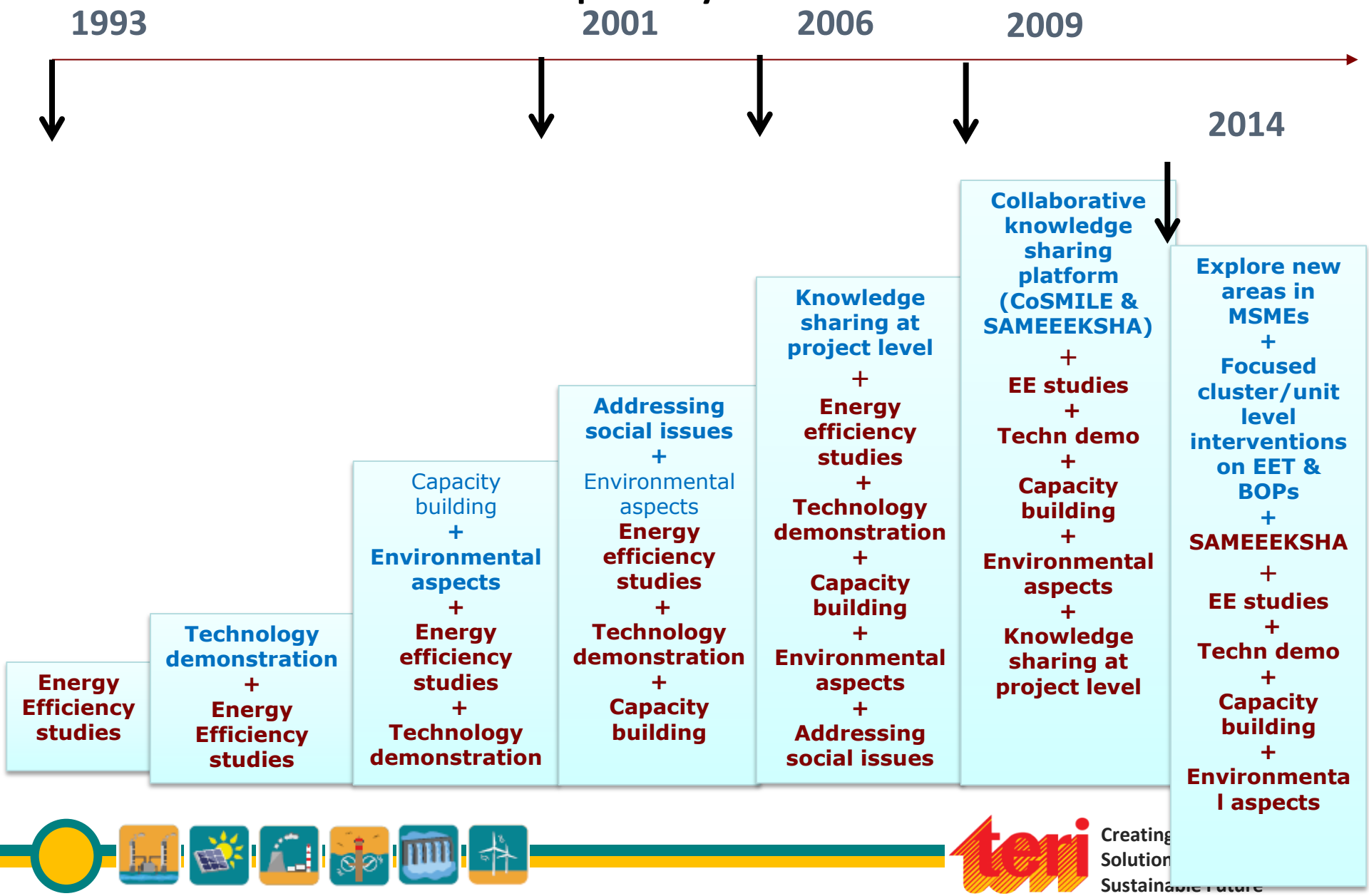
Training manual on Best Operating Practices for Howrah foundry cluster

Prepared for
Swiss Agency for Development and Cooperation (SDC)

3. New areas for EE interventions

- Agriculture pumpsets
- Secondary aluminium sector

In-house capacity enhancement



Major learnings

- Collaborative RDD&D projects can play a vital role in enhancing technological capacities of developing countries
- Areas of collaboration shall be based on local needs and close involvement of local actors
- Focused cluster level interventions are key to energy efficiency improvements in MSME sector
- Sharing of knowledge and expertise by international experts in such projects are vital for their success
- Anchoring (establishing/ strengthening) technology in intermediaries (LSPs) will ensure sustainable replication of demonstrated technologies
- Government, bilateral and multilateral funding mechanisms can play an important role in promoting RDD&D on cleaner technologies
- Long term and flexible approach help in enhanced adoption of EE technologies

Thank you