Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSME) Clusters in India

Project Brief

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New Delhi, 23 September 2010

Project Information

- ✓ Expected project commencement: Within December, 2010
- ✓ Project Duration: 4 Years
- ✓ Project Partners: BEE (National Executing Agency), MNRE & MSME
- ✓ Total project costs: USD 33.4 M
  (USD 7.2 M GEF grant & 26.2 M Co-Financing)

- ✓ 12 MSME Clusters across 5 industry sectors selected for interventions:

S No .	*Sector*	*Clusters*
1.	Ceramics	Khurja (U.P.) Morbi and Than (Gujarat)
2.	Hand tools	Jalandhar (Punjab), Nagaur
3.	Foundries	Belgaum (Karnataka), Coimbatore (Tamil Nadu), Indore (Madhya Pradesh)
4.	Brass	Jagadhri (Haryana), Jamnagar (Gujarat)
5.	Dairy	Gujarat, Punjab

Selection of Clusters

- ✓ Four of the selected clusters have been taken from the shortlist of clusters for which BEE had interventions planned – Morbi (Ceramics), Jamnagar (Brass), Jagadhri (Brass), and Gujarat (Dairy)

- ✓ Some of the chosen clusters are ones where UNIDO has previous experience (hand tools, foundries and ceramics). As such, it is a certainty that a significant savings potential exists, and UNIDO has a good understanding of the improvement potential.

Overall Energy use and CO_2 emission data for 12 identified clusters with saving potential

S No	Cluster type	Cluster	Energy use	Energy intensity			CO_2 emissions	CO2 intensity	Energy saving potential		CO_2 reduction potential	
			Total	Avg	Min	Max						
			PJ/yr	GJ/t	GJ/t	GJ/t	million tonnes/yr	t CO2/t product	PJ/yr	%	million tonnes	%
1	**Brass**	**Jagadhri**	0.45	9.5	6.0	12.6	0.05	1.27	0.07	16%	0.01	17%
2	**Brass**	**Jam Nagar**	0.81	9.3	4.5	10.1	0.08	0.87	0.08	10%	0.01	11%
3	**Ceramic**	**Khurja**	0.76	9.2	5.1	8.2	0.06	0.64	0.18	22%	0.01	26%
4	**Ceramic**	**Morbi**	**45.80**	8.1	7.2	11.5	3.79	0.67	6.61	14%	0.44	12%
5	**Ceramic**	**Thangadh**	**1.41**	3.9	3.7	4.1	0.10	0.27	0.37	26%	0.02	24%
6	**Dairy**	**Gujarat**	2.96	0.4	0.3	0.5	0.41	0.05	0.80	27%	0.07	18%
7	**Dairy**	**Punjab**	4.70	0.5	0.4	0.6	0.56	0.06	0.97	28%	0.09	19%
8	**Foundry**	**Indore**	0.23	5.8	2.0	5.4	0.04	1.08	0.01	5%	0.00	9%
9	**Foundry**	**Coimbatore**	1.33	2.7	1.8	4.5	0.20	0.39	0.23	17%	0.04	20%
10	**Foundry**	**Belgaum**	0.42	2.6	1.9	3.9	0.07	0.42	0.06	13%	0.01	18%
11	**Hand Tools**	**Naguar**	0.05	11.7	12.3	14.7	0.005	1.11	0.01	27%	0.001	24%
12	**Hand Tools**	**Jalandhar**	0.83	16.7	12.7	20.5	0.11	2.28	0.17	20%	0.02	16%
			59.8				**5.47**		**9.56**	**16%**	**0.73**	**13%**

Project Objective

The aim of the project is to develop and promote a market environment for :

- ✓ Introducing energy efficient technologies ;and
- ✓ Enhance use of RE technologies in process applications

:with an aim towards scaling up activities to a nation-wide level in order to reduce energy usage per unit of product, improve the productivity and competitiveness of units, and reduce overall carbon emissions/improve the local environment.

Improvement Options

Emerging Technologies	Best Available Technologies (BAT)
• Use of solar dyer for pre-drying • Vibro mill for raw material handling (Khurja) • NG fired furnaces (Khurja) • High temperature CHP for kilns	▪ Adoption of low thermal mass cars ▪ Improvement in kiln - Improvement in insulation - Use of suitable burners - WHR mechanism - Kiln furniture ▪ Improvement in electrical drive operation/ system - Energy efficient motors - Use of ON-OFF control mechanism ▪ WHR for shuttle kilns in Khurja

Project Activities

- ✓ PMU at BEE, cluster leaders/units
- ✓ Deployment for BAT & Development of emerging technologies
- ✓ Technology platforms/incubators with IITs and equipment suppliers
- ✓ Demonstrations
- ✓ Audits/Technology Review
- ✓ Develop 200 Bankable DPRs
- ✓ Exposures, Interactions & Trainings (Technical & Banking) to industry beneficiaries and LSP's
- ✓ Capacity Building of Industry stakeholders

Key Performance Indicators

Success Indicators	***Expected Targets (end of project)***
Energy savings	276,600 MWh per year as a direct result of this project.
Annual GHG emission reductions (CO_{2eq})	84,700 tonnes saved per year as a direct result of this project
Cumulative GHG emissions reduction (CO_{2eq})	1,270,500 tonnes saved over a 15-year lifetime of the EE measures introduced[1]
Volume of investments in EE/RE technologies	USD 16 million

THANK YOU