

Scaling Up of Investments through ESCO Mechanism in MSME Clusters by Deploying Standard Energy Efficient Technologies (SEET)

Federation of Indian Chambers of Commerce and Industry (FICCI) in association with Energy Efficiency Services Ltd. (EESL) is implementing a project funded by Global Green Growth Institute (GGGI) titled “Scaling Up of Investments through ESCO Mechanism in MSME Clusters by Deploying Standard Energy Efficient Technologies (SEET)”. The project activities will be executed in 3 MSME clusters of Haryana (a) Rice Mill Cluster in Karnal (b) Textile Cluster in Panipat (c) Mixed Industry Cluster in Kundli, Sonapat

The overall project objective is to create an eco-system to accelerate adoption of Energy Efficient (EE) Technologies by MSMEs through innovative financing mechanism supported by ESCOs, Financial Institutes (FIs); deployment of Standard Energy Efficient Technologies (SEET) already identified under the EESL UNIDO MoMSME (GEF-5) Project in the targeted clusters; aggregation of demand of EE Technologies and developing suitable IT Tools for improving efficacy of the program implementation at large scale.

Brief Note on Technology

Name of the Technology:	Installation of Automation and Control System in Boiler
Expected Type of Major Energy Saving	<input type="checkbox"/> Electrical <input checked="" type="checkbox"/> Thermal
Old Technology to be replaced	<ul style="list-style-type: none"> Boilers are equipped with FD & ID fan to maintain the balance draught in the system and provide combustion air for fuel. Although, there are VFDs installed in the FD / ID Fans, the air flow control is manually done in most of the units. Manual operation maintain inappropriate supply of air leading to either incomplete combustion or excess air resulting in energy loss & reduction in efficiency. The blow-down control in the boiler is also manual which leads to a lower boiler efficiency.
Brief about the New Technology	<p>Automation and Control system in boiler helps to monitor and analyze various boiler parameters, improve the efficiency of boiler through effective monitoring and control of air-fuel ratio; controlling furnace draft; maintain optimum fuel feed based on steam pressure in boiler and automatic blow-down. Automation and Control system in boiler will:</p> <ul style="list-style-type: none"> Optimize boiler combustion efficiency through effective monitoring and control of Forced Draft (FD), Induced Draft (ID) and Fuel feeder. Monitoring and synchronizing fuel feeder control with respect to instantaneous steam pressure. Excess Air monitoring and control based on the fuel feeding rate with the help of feedback from the stack oxygen sensor. Furnace draft pressure monitoring and controlling the furnace at slightly negative draft pressure. Automatic boiler blow-down based on TDS level monitoring

Success Story: Demonstration in MSME Clusters

Year of demonstration	:
Location of MSME Cluster	: Surat
Type of Cluster	: Textile
Name of the MSME Unit	:
Boiler efficiency (Baseline)	: 62.25
Boiler efficiency (Post Implementation)	: 66.39
Annual Fuel saving	: 248 tonne/year
Annual Cost Savings	: 16 Rs in lakh/year
Investment	: ₹ 12 lakh
Simple Payback	: 0.73 year
Warranty of the New Technology	:



Before



After

Benefits Incurred from the Project

- 2-5 % reduction in specific fuel consumption
- 5-7% Reduction in energy consumption
- 2-5% Improvement in boiler indirect efficiency
- Improvement in boiler blow-down loss
- Improvement in boiler draft pressure

Availability of Technology Locally	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Probable Technology Providers	<ul style="list-style-type: none"> • Rajdeep Boiler Pvt. Ltd. https://www.rajdeepboiler.co.in/ • MNC Automation Pvt. Ltd. http://www.mncautomation.com/
Supply & Implementation	Typical Delivery time: 3-5 Weeks
	Ease of Implementation: <input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
	Is unit shut-down required: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Partial
	Implementation by: Jointly by Vendor & Plant, Packaged Product
	Buy-back Option: No
Financing Options & Models	<input checked="" type="checkbox"/> Self-Financing <input checked="" type="checkbox"/> Private ESCO <input checked="" type="checkbox"/> EESL <input checked="" type="checkbox"/> Local Bank

WAY FORWARD

Expression of Interest (Eoi):

The MSME Unit shall submit the Eoi as per the format to FICCI duly signed by the plant authority / authorized representative

Baseline Study:

FICCI shall conduct the baseline study “Free of cost”. The study consists of collection of relevant data from the industry and few technical measurements. The baseline study may take maximum “One Day”.

Selection of ESCOs/ Technology Provider:

To be indicated later



For further information, please contact:

Federation of Indian Chambers of Commerce and Industry (FICCI)

Mr. Surender Kumar Verma/ Joint Director
Mr. Pushendra Nayak/ Joint Director

Add: FICCI, Federation House, 1, Tansen Marg, New Delhi 110001, India

Email: surender.verma@ficci.com;
pushendra.nayak@ficci.com

Mob: + 91 9818186253 (S K Verma)
+91 9313636244 (P Nayak)

Global Green Growth Institute (GGGI)

Ms. Neha Sharma
Energy Specialist

Add: GGGI, M-6, Third Floor, Aurobindo Marg, Haus Khas, New Delhi- 110016, India

Email: neha.sharma@gggi.org

Energy Efficiency Services Limited (EESL)

Mr. Amit Semwal
Technical Expert

Add: EESL, 5th & 6th Floor, Core - 3, Scope Complex, Lodhi Road, New Delhi, Delhi 110003

Email: asemwal@eesl.co.in