Energy Efficient Technology Project
Tiruppur Cluster report

September 2025

Through this project 45% of the study firms implemented at least one energy efficient measure and invested 49 lakh rupees (combined).

This study was conducted with the support from 51 MSMEs in Tiruppur and Erode dyeing cluster from September 2023 - August 2025. The MSMEs play a critical role in India contributing to 29.1% of GDP and 36.2% of total manufacturing output. The projected energy consumption of the MSME sector by 2030 is expected to be equivalent to above 72 million metric tonnes of CO2. According to one estimate the potential for energy saving in the textile dyeing sector is 15-30%. This study aimed to help dyeing units identify practical ways to reduce energy consumption and reduce costs by adopting energy-efficient technologies. GBL worked with firms to raise awareness, share solutions, and encourage investments that strengthen both competitiveness and sustainability.

Program Details

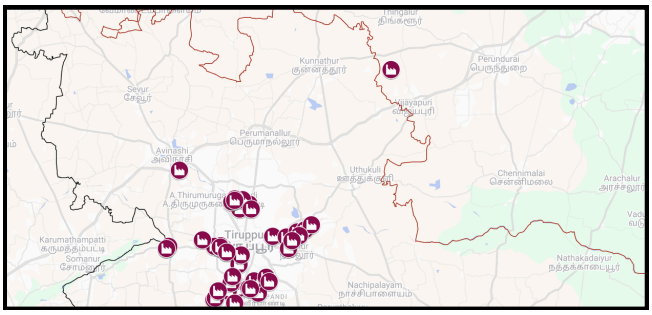
The project supported dyeing units through a step-by-step process.

BEE-certified auditors conducted walk-through thermal energy audits.

Tailored reports with technology recommendations, savings potential, and details on payback periods were shared.

One-on-One consulting from auditors, followed by information on trusted vendors and peers who had successfully adopted the technologies.

We also conducted regular follow ups to track the impact of the program and got feedback from study participants.



51
firms were part of the study

42
Energy Audits and audit reports

84
Follow up visits

2
workshops

gbl.

Project Findings

Current technologies and practices

On an average a boiler in the sample firm is **running at 52% efficiency** (about 10-12% below optimal efficiency). This is in turn indicates that an average firm in the sample consumes more fuel at lower efficiency. This is because some firms are not following good maintenance practices regularly and there is room for improvement in the current machinery.

84 %
firms didn't check wood moisture

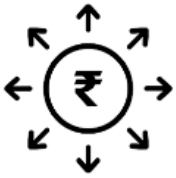
94 %
didn't check flue gas temperature

100 %
didn't check flue gas content

To address the gaps in efficiency, firms can adopt energy efficient technology (EET) and maintenance practices. However, firms in the sample indicated difficulty in adopting these measures due to lack of financing sources, lack of awareness about the benefits e.g. return on investment and payback periods, high upfront costs and some firms also reported that there sales aren't good and hence they can't make any new investments.

Energy Audit Recommendations

Each firm was given detailed EET recommendations in an audit report stylized to their operations. If the firms adopted all audit recommendations then the sample firms can receive the following benefits:



Average upfront investment for recommended EETs: ~ ₹12 lakhs
For half of the firms the recommended bundle of EETs was ₹8.8 Lakh

Average payback period for recommended EETs is ~6 months

Expected mean average monetary savings ~₹23 lakhs per year.
For half of the firms the monetary savings is around ₹16.5 lakhs per year

Expected average fuel savings is ~400 tonnes per year

Most Recommended EETs				
Name of Technology/ Measure	**Initial Investment** (Rupees)	**Monetary Saving** (Rupees/ year)	**Payback Period** (months)	**Electricity/ Fuel Saving** (per annum)
Belt-driven ID fan blower & condition monitoring of the belt loss	10,800	26,400	5	3000 kWh
Thermo Ceramic Coating in steam pipes lines (especially in pipe joints)	73,000	164,000	5	28 tonnes
Moisture Separator in the Steam Line	77,000	124,000	7.5	24 tonnes
Hot air generator using inbuilt Gasification	409,000	886,000	5.5	168 tonnes
Remove wood moisture	28,000	86,740	4	16 tonnes
Addition of fuel additives	246,000	517,000	6	83 tonnes

Program Outcomes

65%

Firms shared that they learnt about new technologies from the audit report or presentations. Disseminating information through an audit report helped firms get customized solutions and information on return on investment and payback period.

45%

Firms implemented at least one EET post audit. Some examples of implemented technologies are as follows: cogged belt pulley, gasifier, moisture separator, new pipeline and insulation, wood moisture reduction etc.

₹ 49,07,829

is the total investment made by the participating firms in energy efficient technologies and measures. The investment ranged from 50,000 rupees to 900,000 rupees with an average of 306, 793 rupees.

Policy recommendations

The findings highlight that a comprehensive and multi-pronged policy, integrating tailored information with expert and peer consultations, can be effective in overcoming significant barriers to adopt EETs.

Making Information Accessible

- Firms valued tailored audit reports and presentations.
- What worked best: clear explanations and customized recommendations, not just technical data.
- Policies should move beyond one-size-fits-all approaches to personalized audits that show real savings, ROI, and payback.

Beyond Information – Hand holding Matters

- Firms receiving consulting and peer support were more likely to adopt technologies.
- Peer learning and connecting firms with local vendors build confidence to act.
- Policy interventions should include ongoing handholding and networks, not just reports.

Tackling Non-Financial Barriers

- The biggest barrier was lack of time/managerial bandwidth, not just money.
- Solutions:
  - Pre-vetted vendor lists and demos
  - Simplified subsidy application processes
  - Easy-to-access technical support
  - Pilot programs offering temporary admin help to MSMEs

Financing the Transition

- High upfront costs discourage investment, especially with uncertain orders.
- Needed: tailored MSME-friendly finance (e.g., cash-flow based loans).
- Greater awareness of existing schemes (e.g., CGTMSE) via industry associations.

About GBL

GBL is a global NGO that conducts rigorous research to demonstrate how sustainable business practices, by addressing the needs of both firms and workers, create long-term value. We partner with companies to design, develop, and evaluate scalable solutions that positively impact stakeholders and foster inclusive growth.

For more information on the project and GBL, contact us: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