



Developing a Energy Efficient Policy Package for Textile Sector

Small and Medium Enterprises: Energy Efficiency Knowledge Sharing (SAMEEEKSHA) Platform – 20th Meeting

Background presentation

December 17, 2021

Overview

- Introduction
- Energy efficiency opportunities
- Barriers to improving energy efficiency
- Policy package

The project

Objectives

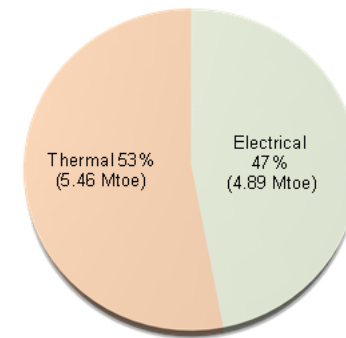
- Ensuring maximum impact in terms of energy savings (targeting the most relevant processes and improvement opportunities)
- Ensuring that the medium enterprises are the main focus (but not excluding small companies when relevant) and,
- Developing a strategy that can be easily scaled up

Methodology

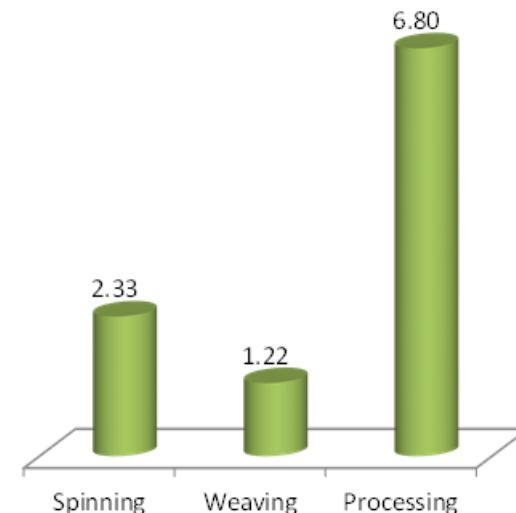
- Literature review and identification of typical clusters for survey
- Identification of energy efficiency opportunities and barriers based on interviews and surveys of stakeholders and textile companies
- Listing of multiple (additional) benefits of energy efficiency, and,
- Recommend policies for energy efficiency improvement

Textile industry

- Accounts for 7% of industrial production, 12% of exports and provides huge employment
- High energy use, 15-20% of total production cost
- Sizable amount of industry is in the MSME sector, 95% of cloth produced by the sector, 2.8 million power looms
- Larger mills (> 3,000 toe) are covered under PAT scheme
- Energy mix: thermal 53%, electrical 47%
- Energy consumption: 10.35 Mtoe



Overall energy consumption mix in MSME



Energy consumption by textile sub-sector (Mtoe/y)

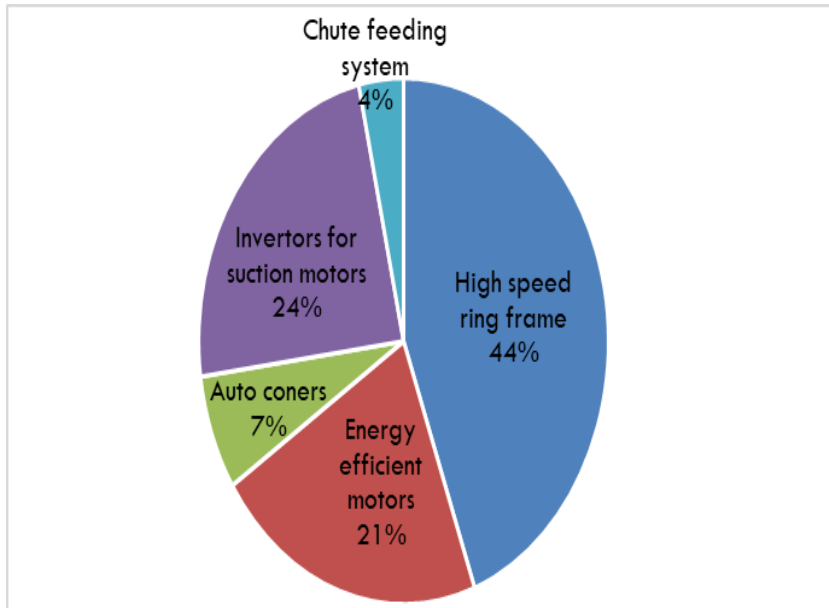
Focus on Spinning

Overview

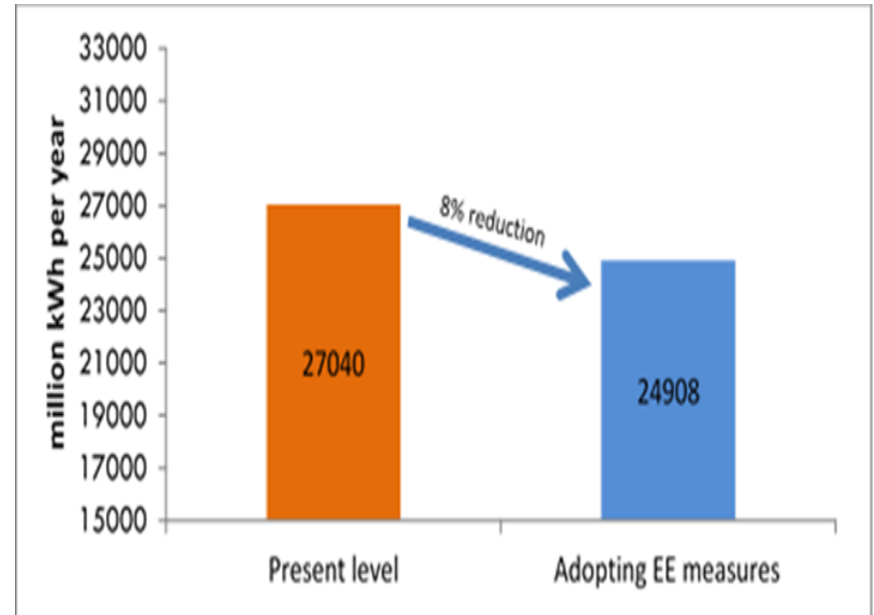
- 3,000 spinning mills, installed capacity 50 million spindles
- Electrical energy 12-15% cost
- SEC range 5-7.6 kWh/kg
- Major energy consuming area are Ring frame machines and induction motors

Energy Efficiency Opportunities

- High speed ring frame machines
- Energy efficient (IE3/IE4) motors with flat belts
- Auto coner winding machines
- Invertor for broken end suction motor with transducers
- Chute feeding system for blow room



Potential percentage energy savings

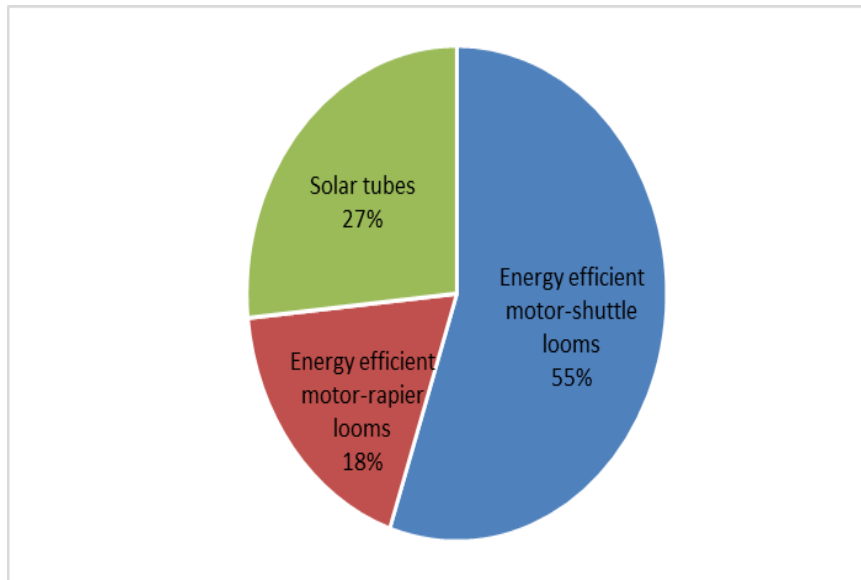


Electrical saving potential

Focus on Weaving (Powerlooms)

Overview

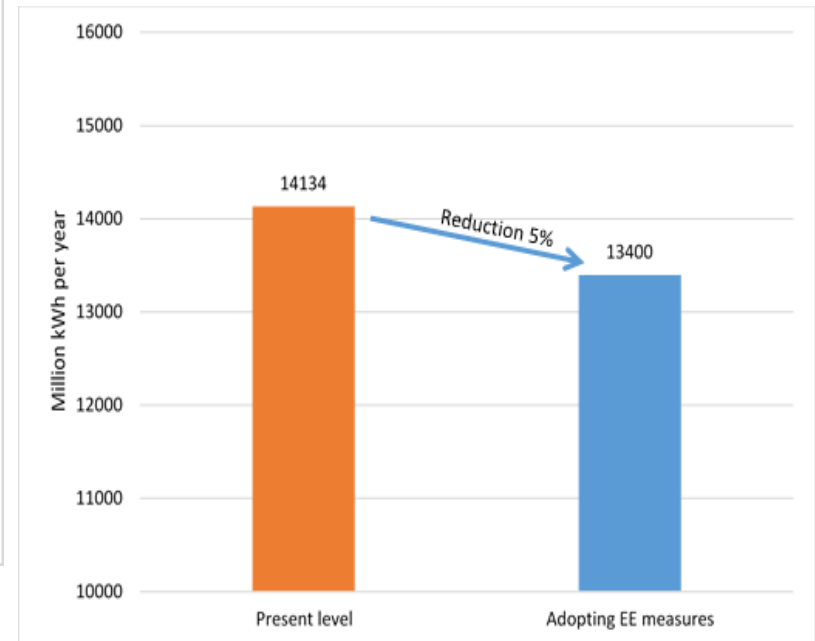
- 2.8 million power looms, largely conventional/semi-automatic (mechanical shuttle looms), local make, low speed
- 0.15 are high speed automatic looms (shuttle less-air jet/water jet), imported
- Electrical energy 5-10% cost



Potential percentage energy savings

Energy Efficiency Opportunities

- High speed automatic looms, R&D to make high speed looms in India
- Energy efficient (IE3/IE4) motors
- Solar tubes for day lighting



Electrical saving potential

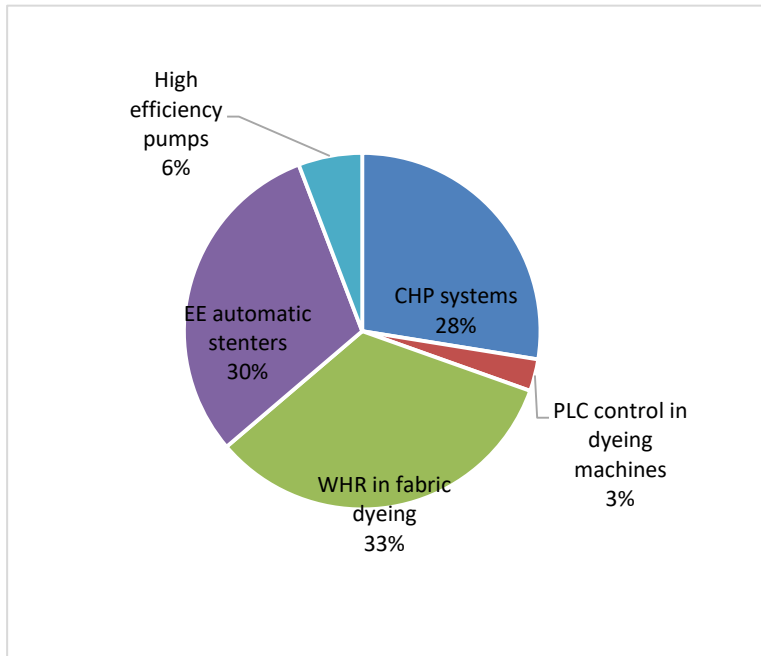
Focus on Wet Processing (Dyeing)

Overview

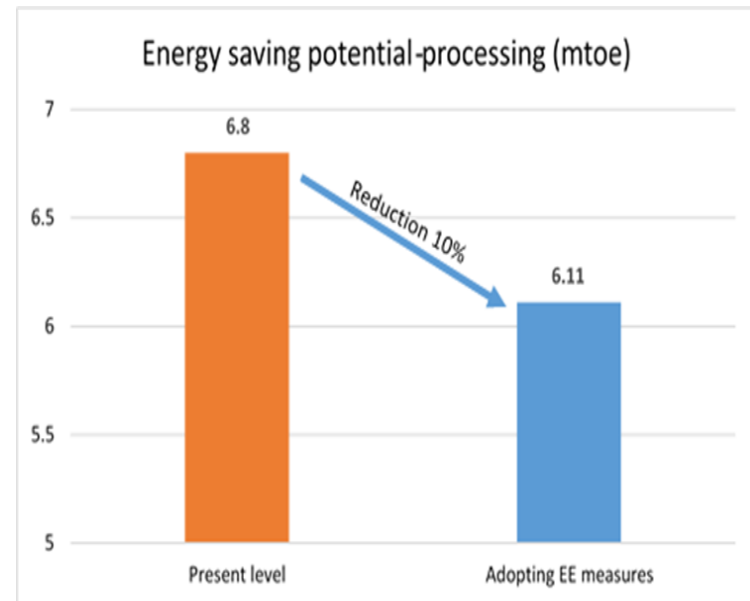
- Energy and water intensive, energy cost 16-20%, water consumption 50 lit/kg
- Main energy consuming areas:
 - Process: dyeing, stenter
 - Utilities: boiler, thermic fluid heater, ETP

Energy Efficiency Opportunities

- CHP System
- WHR from waste water in fabric dyeing
- PLC control in dyeing machines
- Energy efficient automatic stenters
- High efficiency pumps



Potential percentage energy savings



Electrical saving potential

Barriers to improving energy efficiency

Challenges to energy efficiency improvement among SME textile units

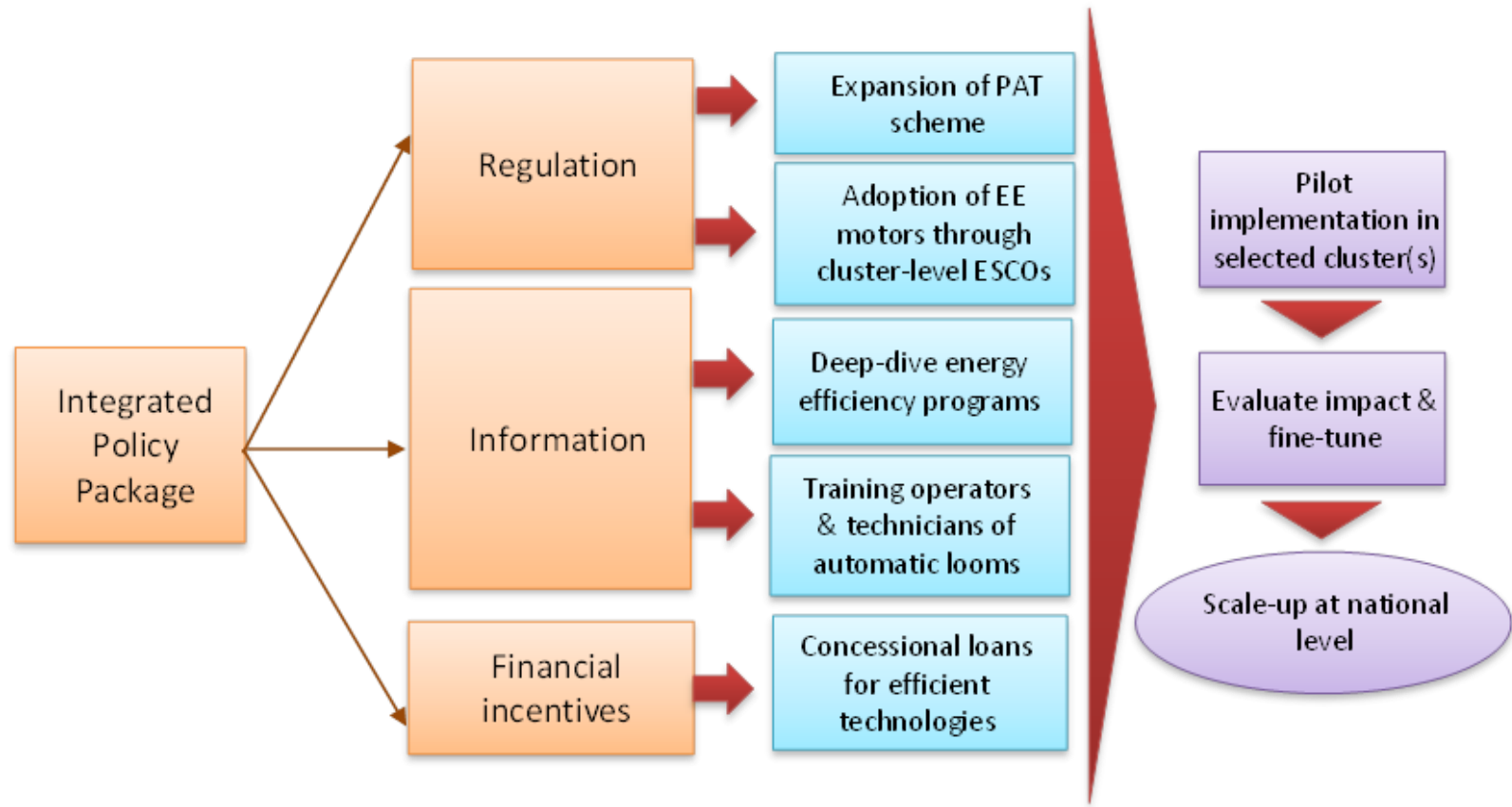
- Limited awareness of EE technologies & practices
- Poor knowledge sharing among clusters

Lack of access to EE technologies & services

Limited availability of skilled operators & technicians for automatic looms / machines

Difficult financing process

Integrated Policy Package (IPP)



Points for Discussion

1. Other opportunities to save energy?
2. Policies to promote energy efficiency?

Thank you

