

# Promoting Energy Efficient Pumpsets

Based on the study 'Promoting energy efficient pumps in industry in India' by TERI for Shakti Sustainable Energy Foundation, 2012



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# Outline

- Pump industry in India
- Energy use in agriculture sector
- Barriers to promoting Energy Efficient (EE) pumps
- Recommendations



# Pump industry in India

- More than 2,500 pump manufacturers, majority of them in the small-scale sector
- More than 5 million pumps produced annually
- Major pump manufacturing clusters
  - Ahmedabad and Rajkot in Gujarat
  - Coimbatore in Tamil Nadu
- Considerable potential to save energy by promoting EE pumpsets



# Energy use in agriculture sector

- The sector is the third largest consumer of electricity (~20 % of electricity sold)
- Estimated 20 million agricultural pumps in operation
- Adopting energy efficient pumps is win-win both for the farmer as well as the state
  - Lower connected load and higher reliability for the farmer
  - Power demand and subsidy burden is reduced for the state

# Barriers to promoting EE pumpsets



# Barriers to promoting EE pumpsets

- About 50% of the pumps are ‘commercial quality’ i.e. use poor quality material and inefficient design
- Present BIS standards are relaxed (MOC, durability, testing, etc not specified)
- BEE labelling limited to few models (3 phase upto 15 kW) and does not incentivise manufacturers to produce pumps more than ‘5 star’ (20% more efficient than BIS)

# Recommendations





# Policy related

- Need to revise BIS standard
  - Specify grade/quality of critical components
  - Incorporate durability criteria
  - Review pump testing practices
  - Raise efficiency standards
  
- Encourage EE pumps through public procurement schemes
  - Life Cycle Analysis (LCA) of energy savings rather than lowest procurement cost
  - ESCOs/DISCOMs can promote replacement of existing pumps with EE pumps





# Technology related

- Technical assistance to small-scale pump manufacturers to make EE pumpsets
  - Hydraulic design of mixed flow pumps through computer simulations

## Awareness and capacity building

- Educate user groups (farmers, etc.) on proper selection and installation of pumps



Thank you for your attention

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