#### **Promoting Energy Efficient Pumpsets**

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



SAMEEEKSHA 9th Meeting **Prosanto Pal Industrial Energy Efficiency Division, TERI** 



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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

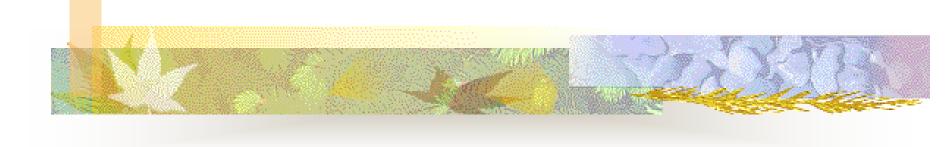


## **Energy use in agriculture sector**

- 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**



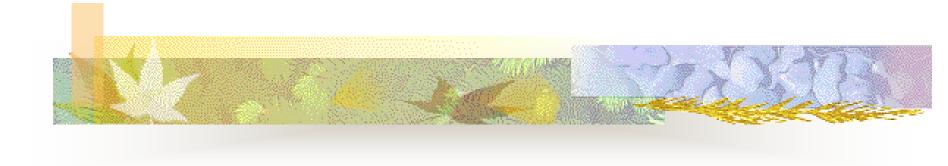


### **Barriers to promoting EE pumpsets**

- 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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