

# **India's Super-Efficient Equipment Program (SEEP)**

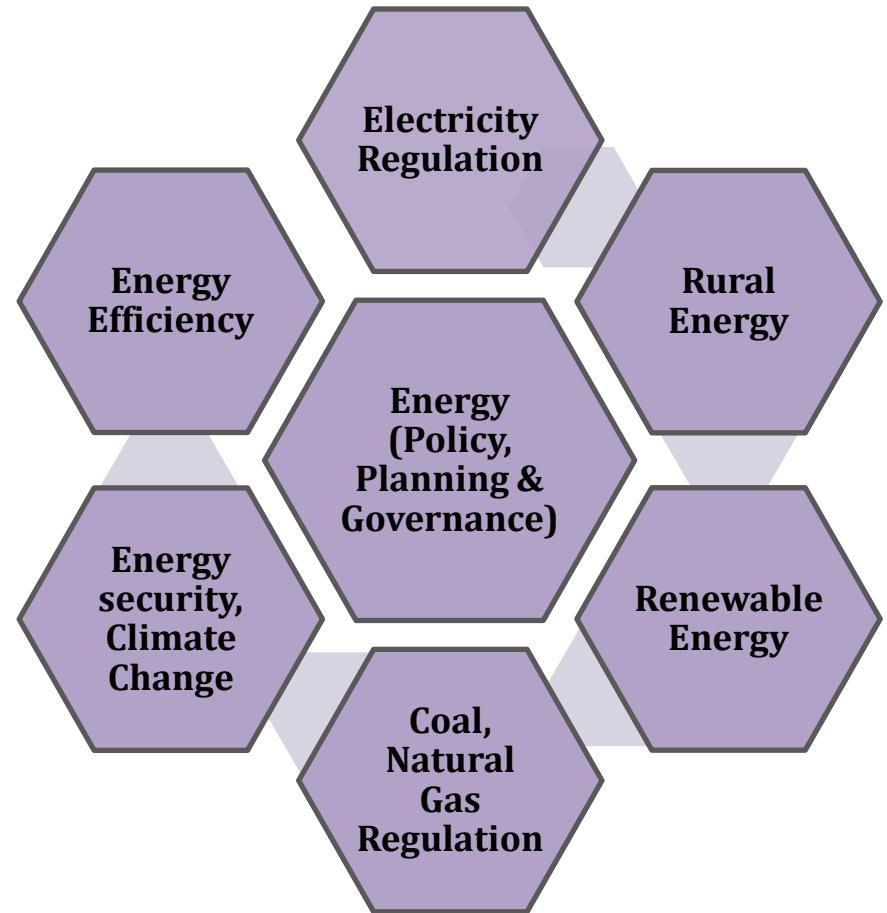
Aditya Chuneekar  
Prayas, Energy Group

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# About Prayas, Energy Group

- Not-for-profit, Non-governmental organization
- Policy Research and Advocacy
- Over 60 publications and Regulatory interventions available on:

[www.prayaspune.org/peg](http://www.prayaspune.org/peg)



# Outline

- Background, Rationale & Features of SEEP
- Background Analysis
- Program Design & Implementation



# Background, Rationale & Features of SEEP



# Resource Acquisition (RA) vs Market Transformation (MT)

- RA perspective looks at DSM as an alternative to supply side resources.
- Designed to achieve specific levels of energy (kWh) and demand (kW) savings
- Limited impact and measurement issues
- MT perspective targets the entire market
- Significant wide-spread and permanent impact
- Indicators of success are measurement of market growth over time which is easier to measure

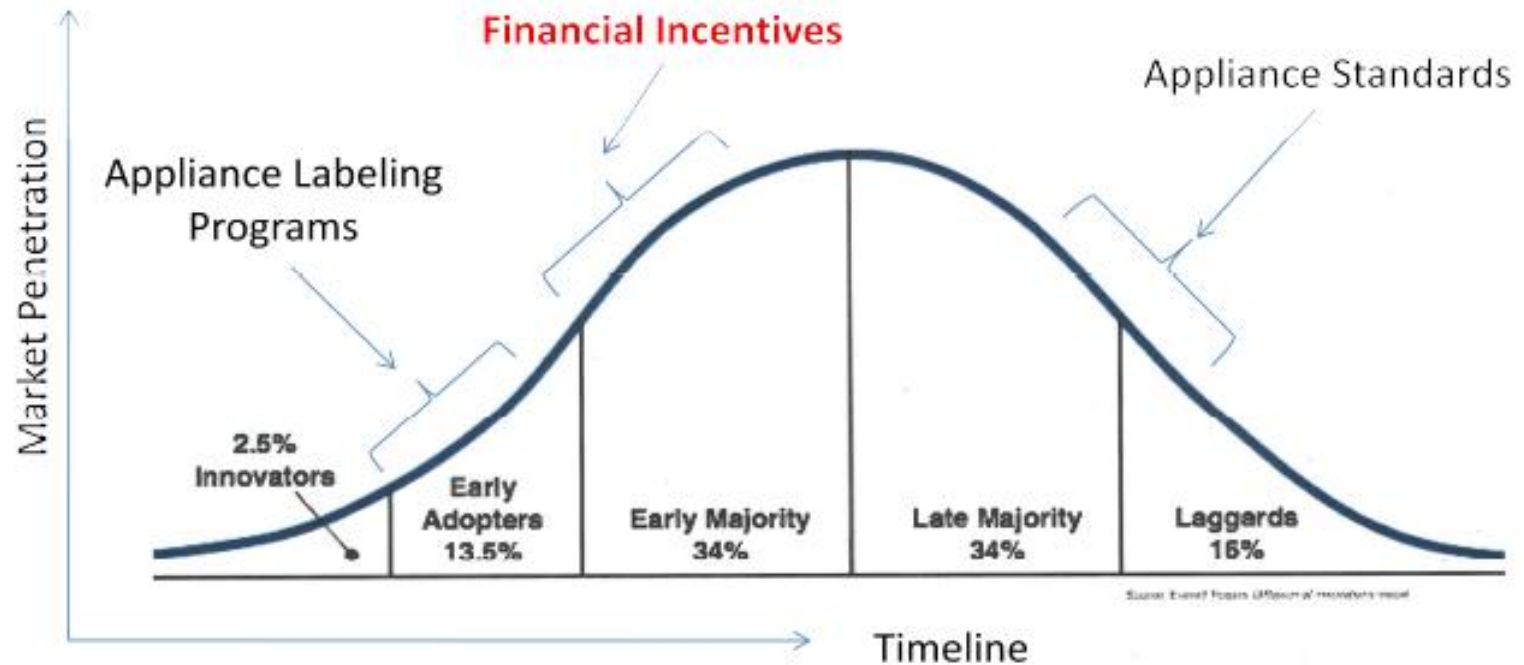


# Barriers to MT

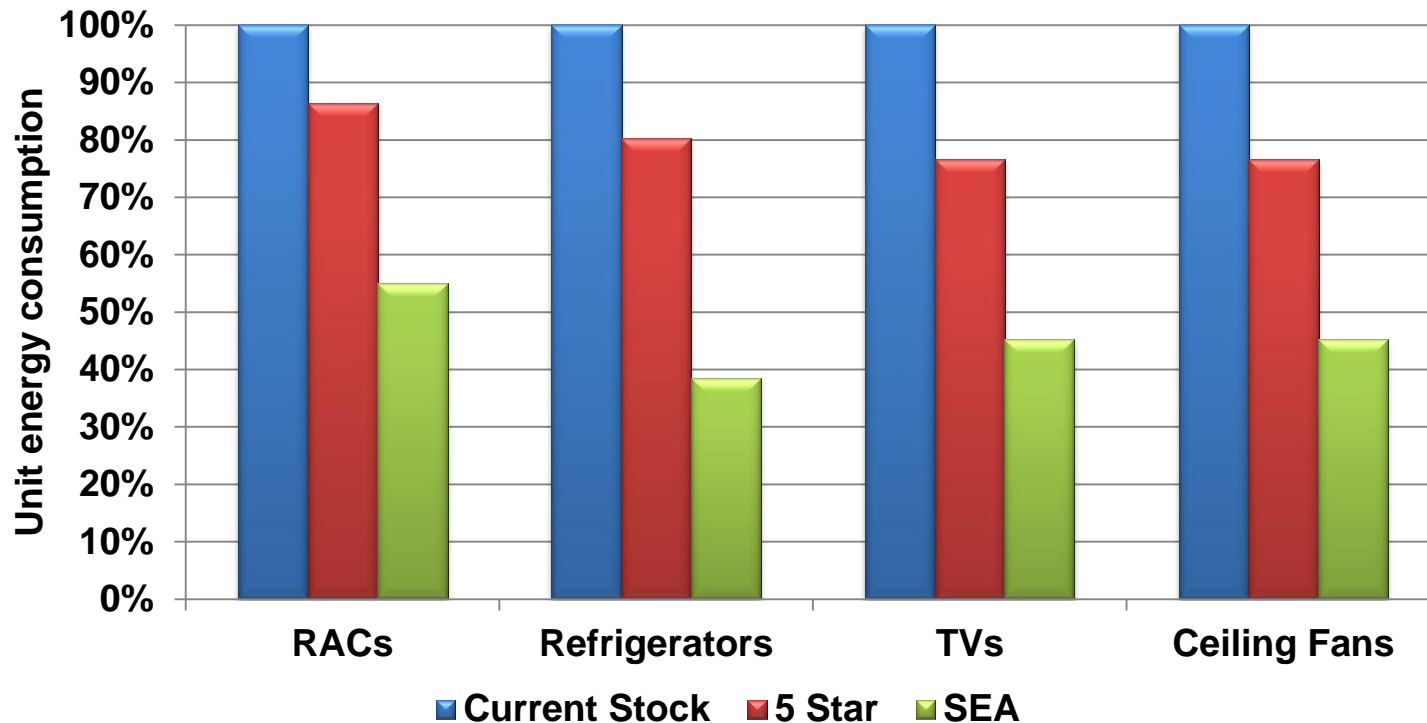
- Low market demand due to high first cost sensitivity & lack of awareness about energy efficiency among Indian buyers
- Manufacturers reluctant to make the high initial investment of changing production lines and building volumes.



# Interventions in MT



# Super-efficient appliances

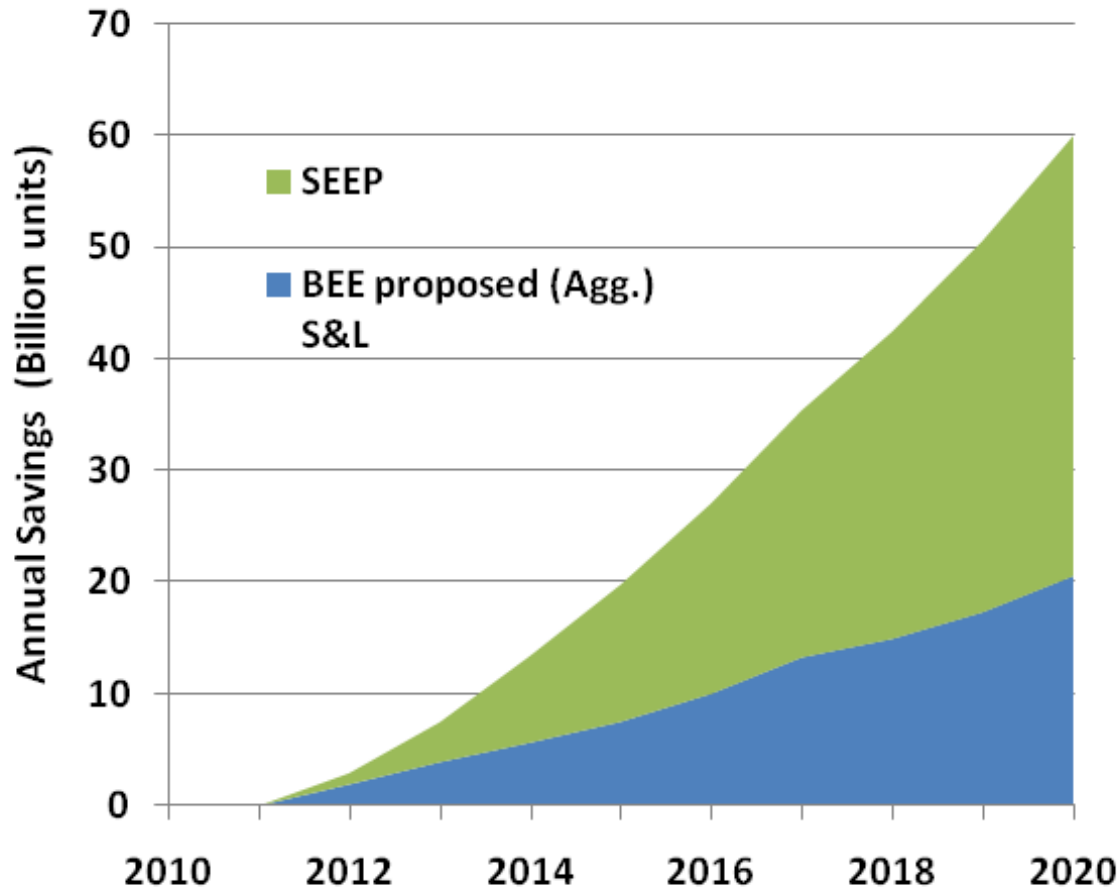


*Large gap between average current purchase and highest rated model (5-Star), and even larger gap between highest rated and best commercially available world-wide.*



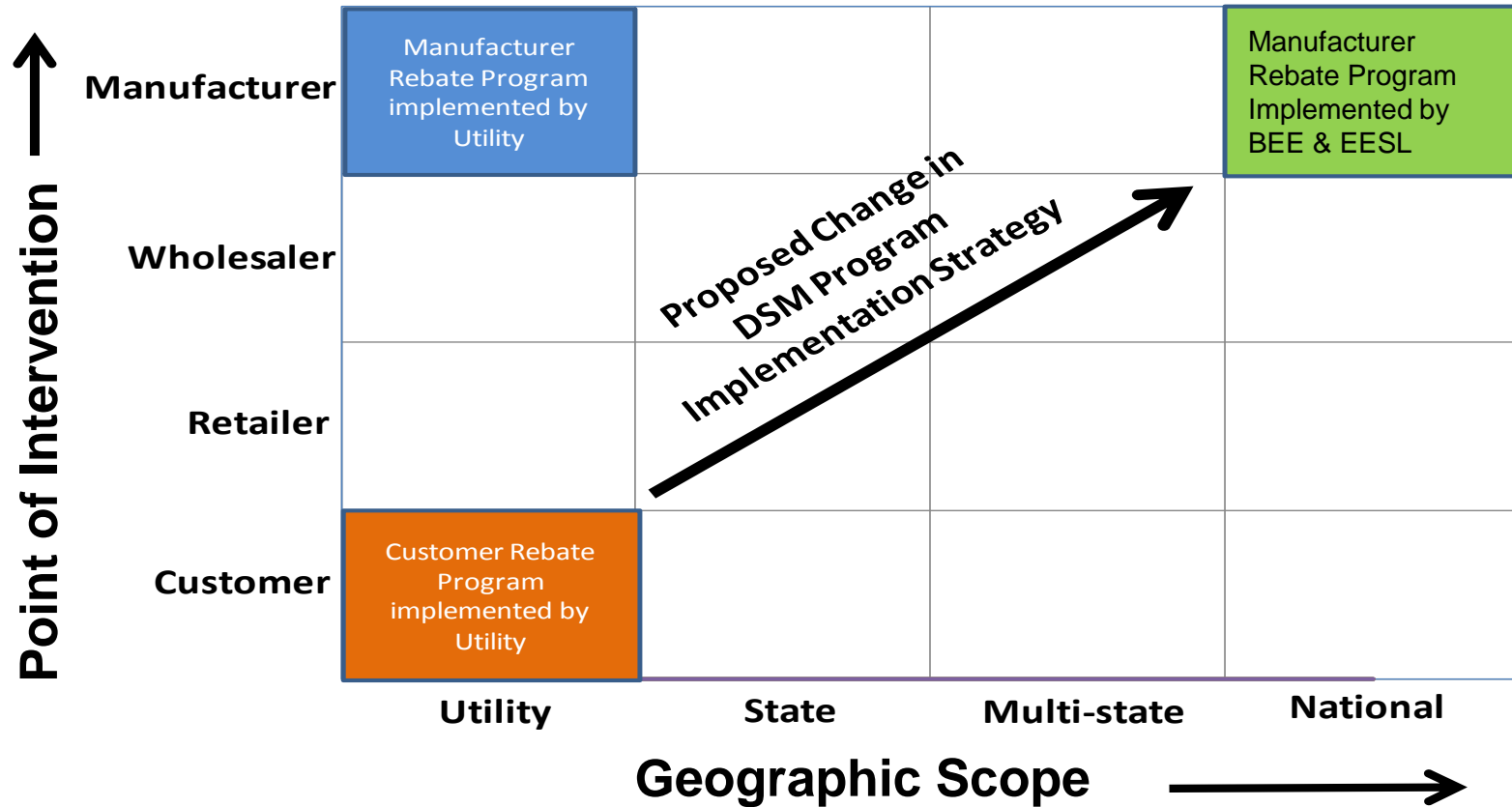


# Potential Savings from SEEP Relative to Moderate S&L



If 60% of stock for only 4 appliances (RACs, Refrig, Fans, TVs) in 2020 is super-efficient, we can save **60 billion kWh** and avoid peak capacity of **20,000 MW** over a moderate S&L scenario.

# Concept of SEEP



# Features and Benefits of SEEP

- **Bypass problems with utility programs.** Reduce burden on state regulators and utilities.
- **Reduce subsidy requirement for super-efficient appliances (SEAs).** (1) Giving incentives upstream avoids wholesale and retail mark-ups and taxes; (2) Larger market size facilitates changes by manufacturers.
- **Reduce transaction costs** - interaction is with manufacturers versus millions of customers.
- **Monitoring and verification is made easier.** Focus is only on shipments/sales data instead of surveying millions of customers
- **Facilitate introduction of SEAs better suited to Indian conditions.** Consolidation of large national market makes the production of appropriately designed appliances economically feasible.



# Indian SEEP for ceiling fans

- Bureau of Energy Efficiency (BEE) implementing the program with financial assistance from the World Bank
- 2-5 million super-efficient fans will be incentivized
- SE fans consume 35W as compared to market average of 70W
- Reverse Bidding mechanism with multiple winners



# Questions?



# Background Analysis



# Background analysis

<b>Appliance consumption analysis</b>	What is the contribution of major appliances to electricity consumption?
<b>Saving potential analysis</b>	What is the saving potential of super-efficient variants of top consuming appliances?
<b>Cost-benefit analysis</b>	What is the benefit to cost ratio of running a SEEP like program for top consuming appliances?
<b>Priority analysis</b>	How to choose the appliance for SEEP considering cost, total saving potential and other factors?

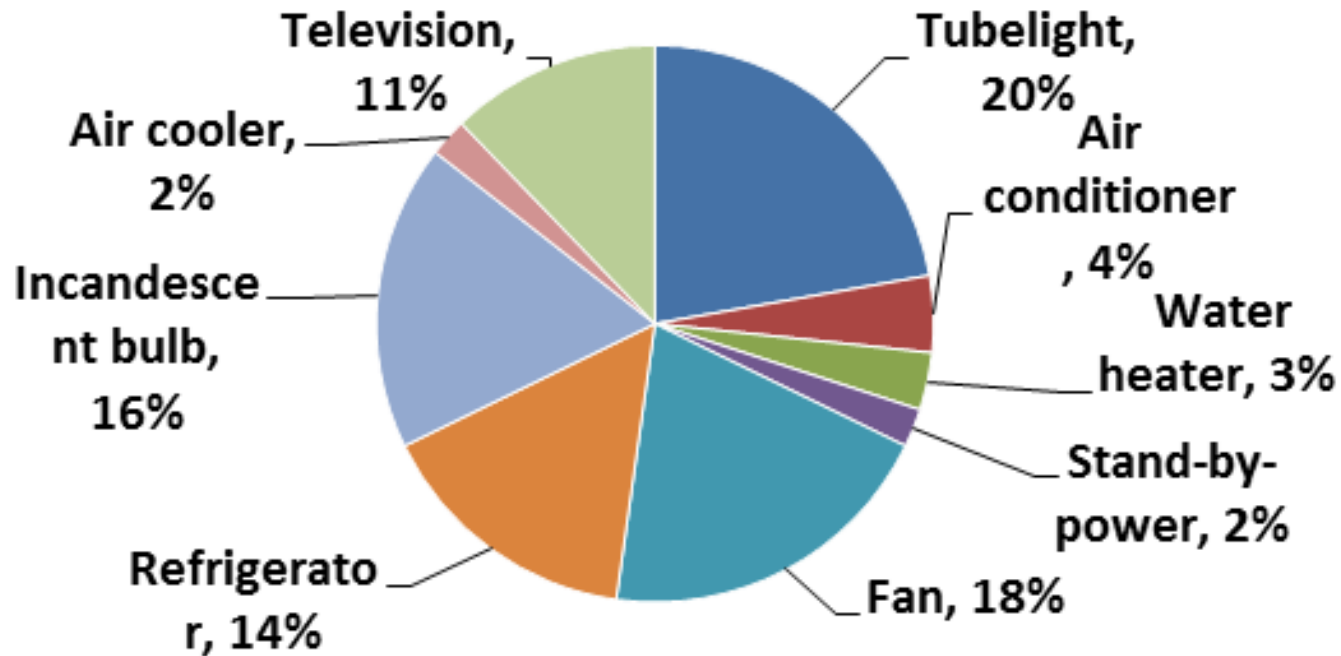
# Appliance Consumption Analysis

- Contribution of major appliances to total consumption
- Energy Consumption Surveys
- Simpler Approach
  - Appliance Stock Data
  - Appliance Unit Energy Consumption (UEC)





# Appliance Consumption Analysis



Major appliances consumption share in India

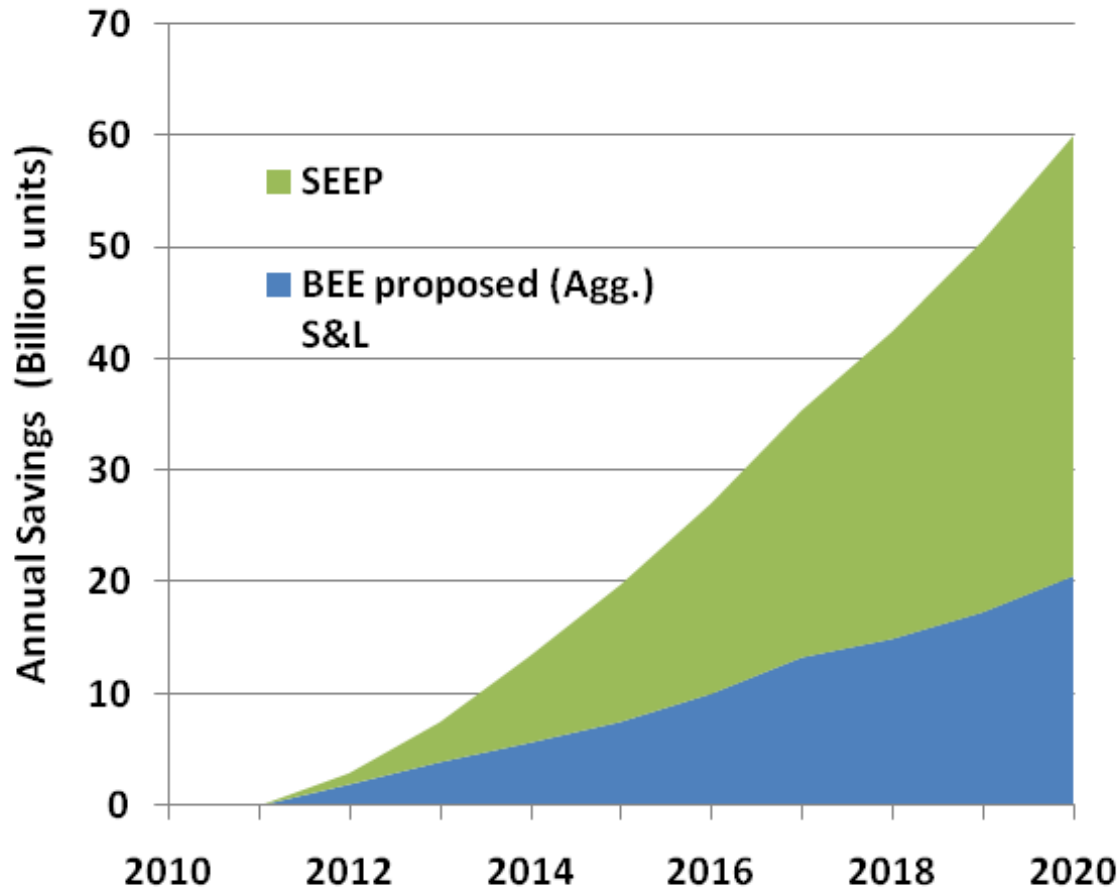


# Saving Potential Analysis

- Appliance Sales Predictions
- Baseline Scenario Electricity Consumption
- Identification of Super-Efficient Appliances
- Super-Efficient Scenario Electricity Consumption
- Saving Potential Estimation from Super-Efficient Appliances



# Potential Savings from SEEP Relative to Moderate S&L



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# Cost Benefit Analysis

- Cost of Conserved Energy (CCE)
- Benefits
  - Savings of fuel
  - Savings on capital expenditure
  - Savings of Green-house gases
  - Utilization of capital for GDP increase



# Priority Analysis

- Cost of Conserved Energy (CCE)
- Political Acceptability
- Industry structure
- Technology Fluidity
- Rebound Effect



# Questions?



# Program Design & Implementation



# Program Design and Implementation

- Basic Principles
  - Simple to administer
  - Adequate Checks and Balances
  - Stakeholder inclusion
  - Transparency & Accountability





# Funding

- Sources of Funding
  - Central Government
  - Utilities
  - International Climate Finance
- Funding should be sustainable
- Transaction costs in securing the funding should be minimized



# Technical Specifications

- A technical committee of all the stakeholders including manufacturers should identify technical specifications early in the program design.
- The SEE specifications should be a right balance between cost and efficiency.
- The SEE specifications should be technology neutral.
- The SEE specifications may require a better performance than normal appliance.



# Incentive Determination Mechanism

- Competitive Bidding and, Analysis & Negotiations
- Multiple manufacturers should be able to participate in the program.
- Incentive level should be the right balance between cost and the potential to maximize savings.



# Incentive Criteria

- Eligibility criteria for manufacturers to participate in SEEP.
- Ceiling for maximum retail price for SEE.
- Periodical review of incentives



# Incentive Disbursement Mechanism

- Production stage or Sales Stage
- Choice influenced by cost, simplicity, and ease of implementation
- Period of disbursement
- Performance criteria and severe penalty cause



# Monitoring and Verification

- M&V should be conducted for Quality and Quantity of SEE.
- Existing mechanism like tax systems can be used to verify manufacturer's claims on SEE production.
- Adequate testing laboratories with appropriate accreditation should be identified.
- A testing protocol should be developed for SEE.
- Testing mechanism should include one-time conformance or type testing followed by random check testing at manufacturer, retailers and customer level.



# Evaluation

- Periodic evaluation of SEEP should be conducted by an independent third party.
- The savings achieved can be calculated using the deemed savings approach.
- Indirect benefits of SEEP should also be measured.
- Administrative processes should also be evaluated.
- Customer feedback is an essential element of the evaluation.



# Branding & Marketing

- SEE should have a distinct label with the information on energy consumption and saving.
- A creative marketing campaign should be designed to generate awareness among consumers.
- Government endorsement on marketing campaign can increase the credibility
- Retailers and other intermediate actors should be included in the campaign.





# Institutional Mechanism

- Oversight of the Program
- Program Design
- Program Implementation
- Monitoring and Verification
- Process Evaluation



# Transparency & Accountability

- A website dedicated to SEEP should be created and all the data related to the program should be made available for public.
- The program design process should be documented with rationale behind each decision clearly explained.
- Program design document should be open to comments from a wider section of society including general public and civil society organizations.



# Questions?



**Thank You**  
[aditya@prayaspune.org](mailto:aditya@prayaspune.org)

