

India's Super-Efficient Equipment Program (SEEP)

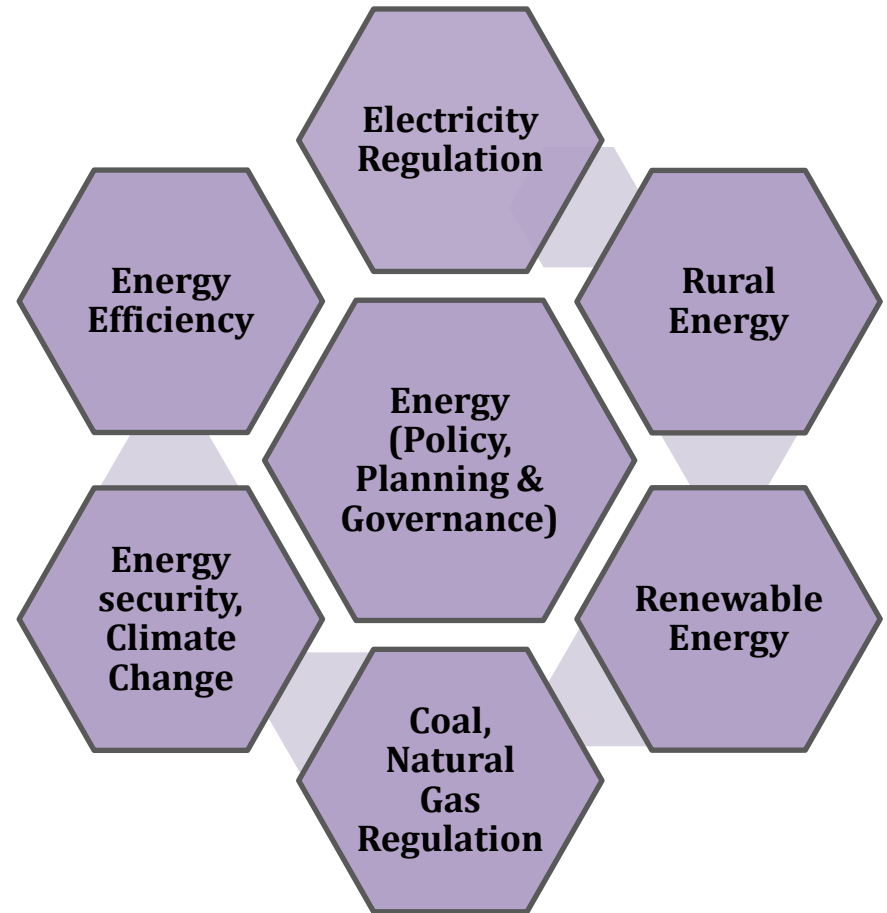
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About Prayas, Energy Group

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

www.prayaspune.org/peg



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

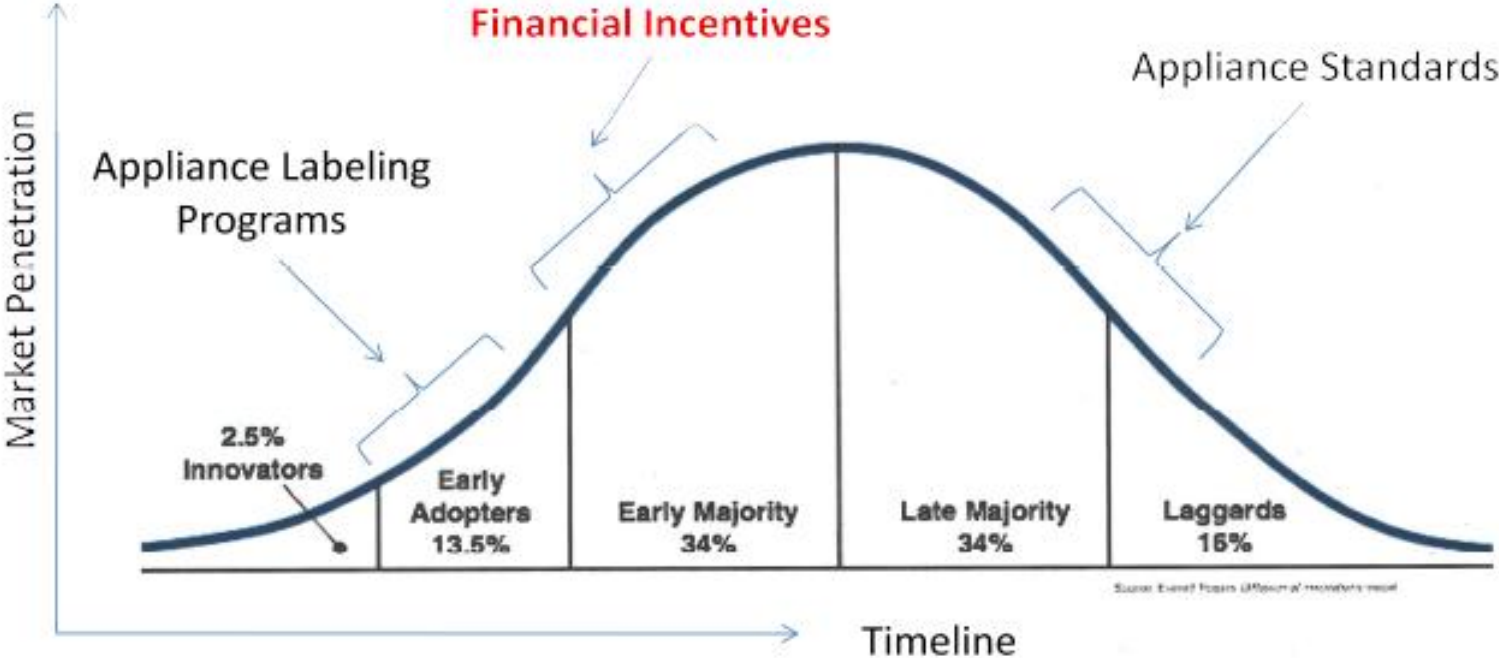


Barriers to MT

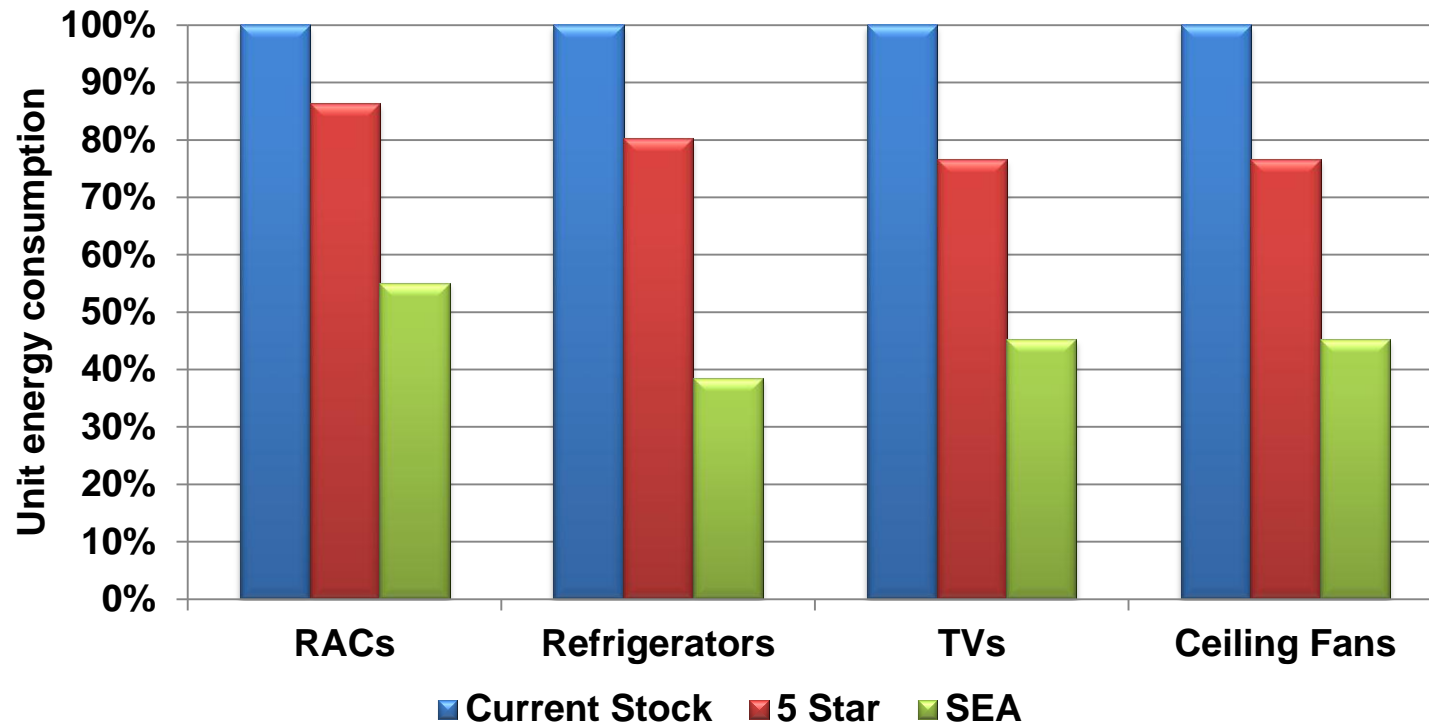
- Low market demand due to high first cost sensitivity & lack of awareness about energy efficiency among Indian buyers
- Manufacturers reluctant to make the high initial investment of changing production lines and building volumes.



Interventions in MT



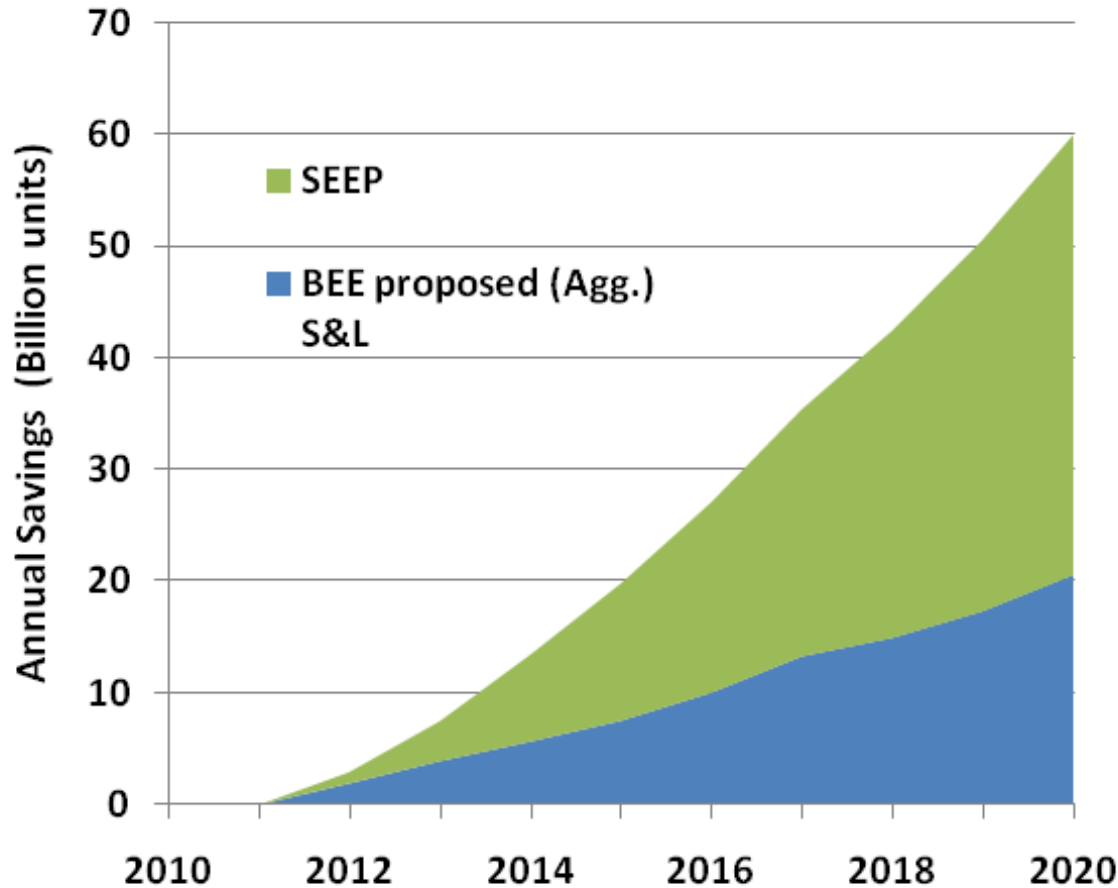
Super-efficient appliances



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.

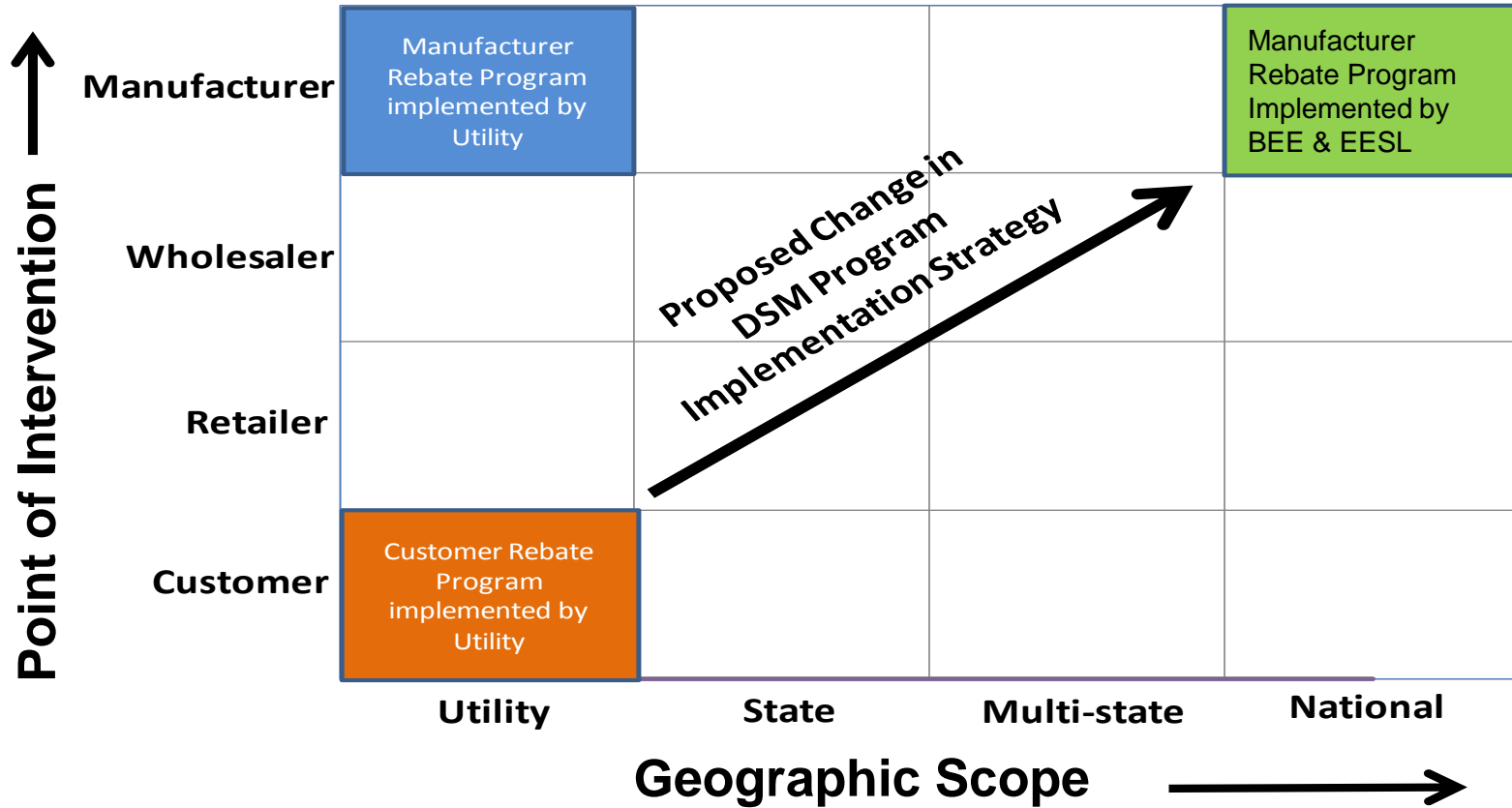


Potential Savings from SEEP Relative to Moderate S&L



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

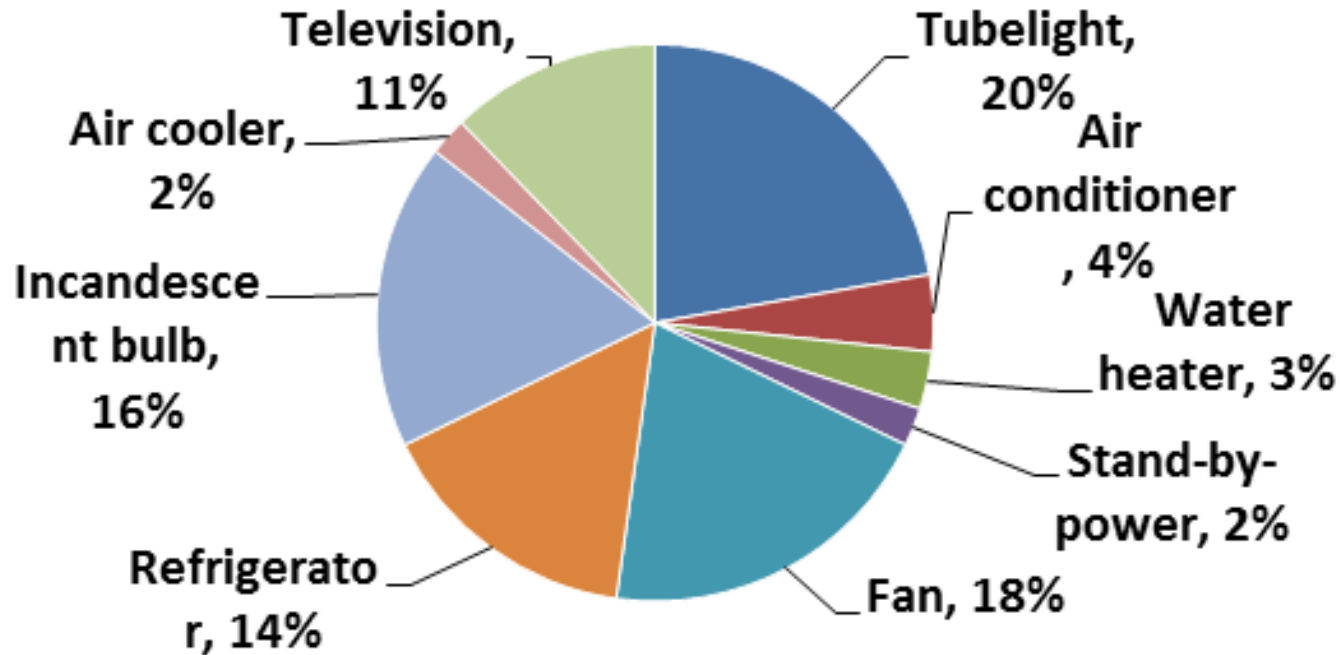
Appliance consumption analysis	What is the contribution of major appliances to electricity consumption?
Saving potential analysis	What is the saving potential of super-efficient variants of top consuming appliances?
Cost-benefit analysis	What is the benefit to cost ratio of running a SEEP like program for top consuming appliances?
Priority analysis	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

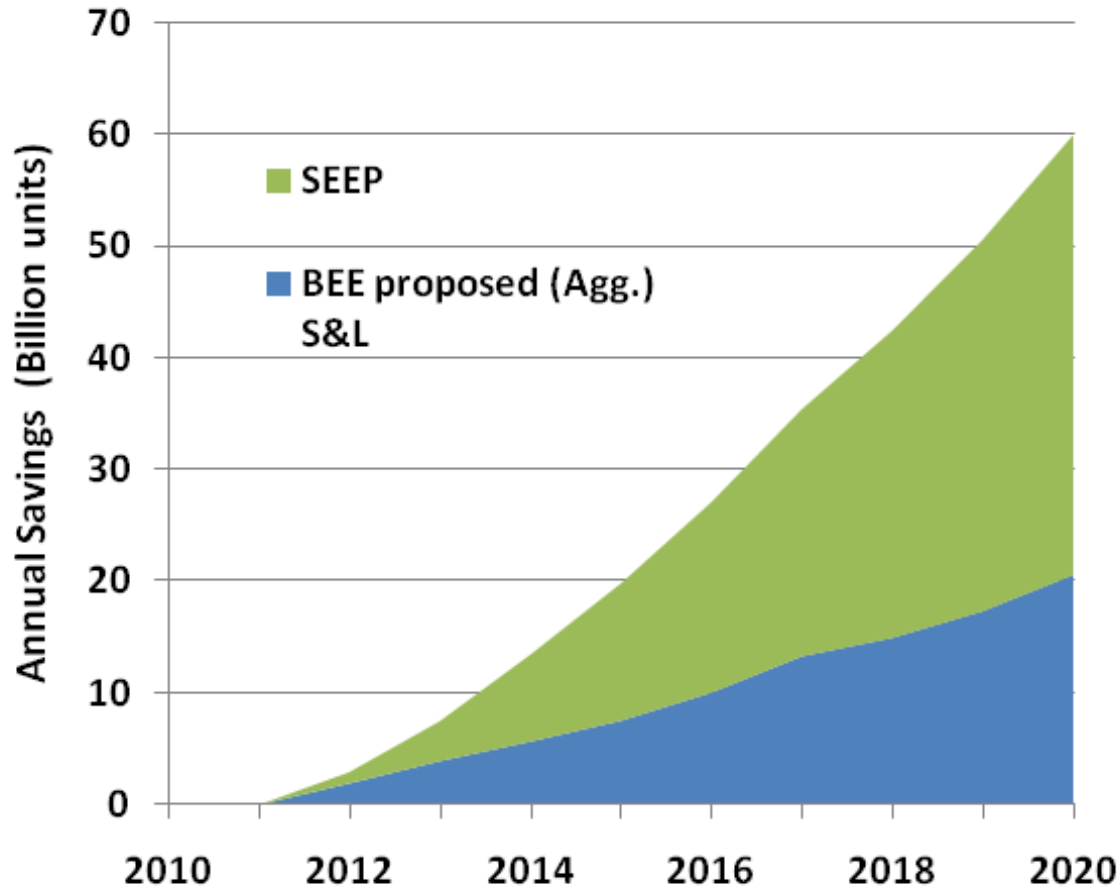


Saving Potential Analysis

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



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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
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