



India's experience in implementing strategic schemes to enhance appliance energy efficiency
&
futuristic integrated policy approaches to adopt most efficient technologies

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- Objectives
- Appliance Standards and labeling program
- UJALA program
- Proposed Integrated Policy Approaches
- Conclusion



Analyse the implementing strategy of Government of India's existing schemes

Propose integrated policy approaches to reduce electricity demand

Standards & Labelling Program in India

Legal Framework & Implementation (under The Energy Conservation Act, 2001)

Standards setting & Strengthening

- Baseline study & potential assessment
- Setting up of star rating standard through stakeholder consultation
- Prepare regulation – Legal vetting – Ministry approval
- Program launch/strengthening

Administration

- Structured guidelines to encourage manufacturers participation
- Applicant can self declare through online registration with legal doc.
- Scrutiny & approval of applications within 35 days.
- Separate teams to resolve issues

Compliance Verification

- Sample selection through custom built sampling software.
- Two levels of check testing at Government approved lab,
- Advertisement of defaulters in national medias
- Penalty for non compliance

Specific measures to enhance appliance labelling program

Mobile App for consumers

Transparent & Informative web

Consumer awareness & retailer training

Fund for Lab Capacity Building

NEC Award for manufacturers

Star label under procurement policy

Key Achievements and Lessons

- Cumulative savings of 29771 MW during 2006-2014
- 77% of savings from residential appliances- S&L program
- High penetration of labeled appliances among consumers-
 - 89% of respondents realized reduction in energy bills from labeled appliances
 - Consumer awareness of star labels increased to 63% in 2014 from 33% in 2010
- Manufacturers' commitment to produce high quality and efficient products-S&L acts as a big motivator
- Suitable policy intervention or incentives required to scale up penetration of efficient appliances

Barrier

- Higher cost of efficient appliance
- Insufficient demand pull for efficient appliances

Unnat Jyoti by Affordable LEDs for All (UJALA)

Unnat Jyoti by Affordable LEDs for All (UJALA)

Framework & Implementation

Standard Offer Programme (Common Distribution)

Project income recovered from Distribution Company (DISCOM) from resultant energy savings

Bulb Cost – € 0.14 for each replacement of 60W ICL/11 – 14W CFL

Energy Savings will be shared with DISCOMs to repay the project investment

Estimated Annual Savings – 105 billion kWh; GHG reduction – 79 Mt of CO₂/year;

On Bill Financing Model (Institutional Distribution)

Project investment recovered from consumers and through subsidy of Government

> Upfront Cost – € 0.14
> Balance cost recovered from electricity bill & any gap will be recovered from Govt.

Energy Savings will be retained by DISCOMs

Estimated Capital Investment – €112 Billion

Implementation

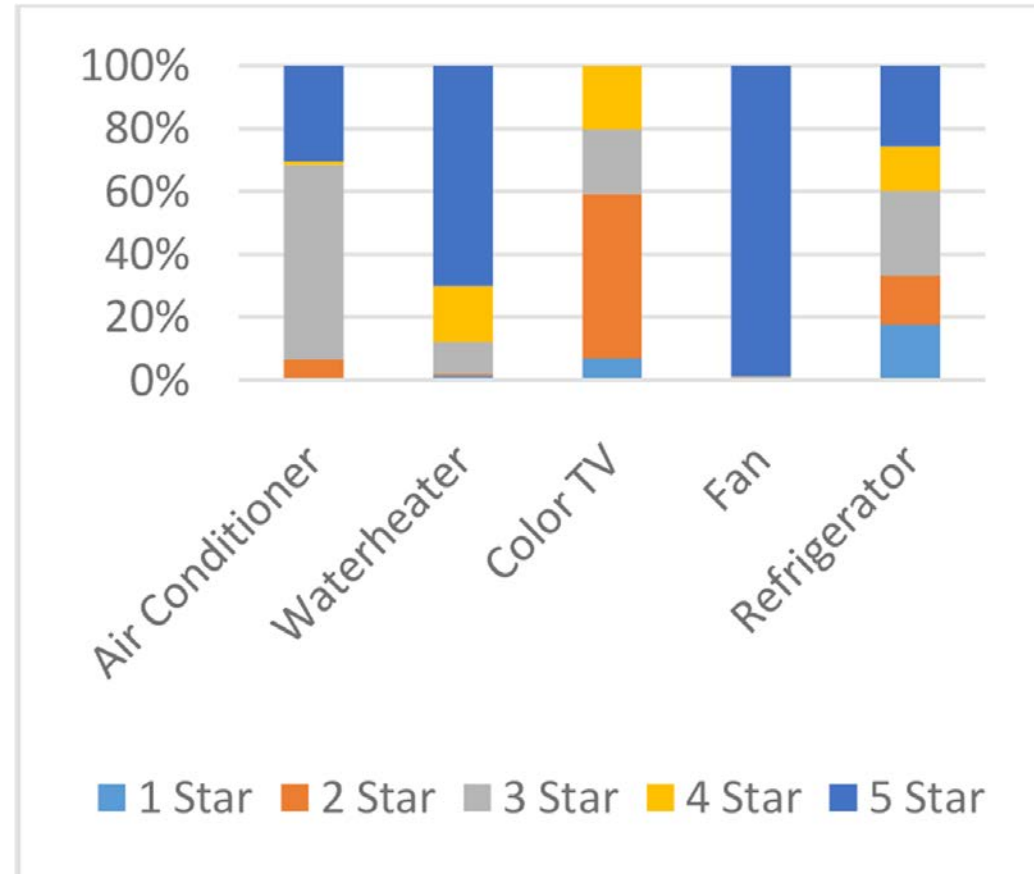
- MoU/Letter of Intent between DISCOM & EESL
- Market survey to assess population of incandescent bulb
- DSM-SOP petition/Direct distribution in phased manner
- Revenue cycle start on completion of each phase
- Guarantee period – 5 yrs

Replacement Mechanism

- Free of cost replacement for all LED bulbs, with technical faults, for three years. And the replacements shall be done through the distribution centres or designated retail stores

Key Achievement

- Reduction in retail cost- market price of domestic LED bulbs reduced by 75% in 2 years
- Verification & replacement mechanism- any failure or faulty lamp replaced
- Triggered the market for tubular LED



2016- Market penetration of star rated products

Proposed Integrated Policy Approaches

Integrated approach

Labeling program

Bulk procurement/demand aggregation



Combination of approaches for market transformation towards super efficiency

Incentive based program approach

Seasonal electricity tariff rebate scheme



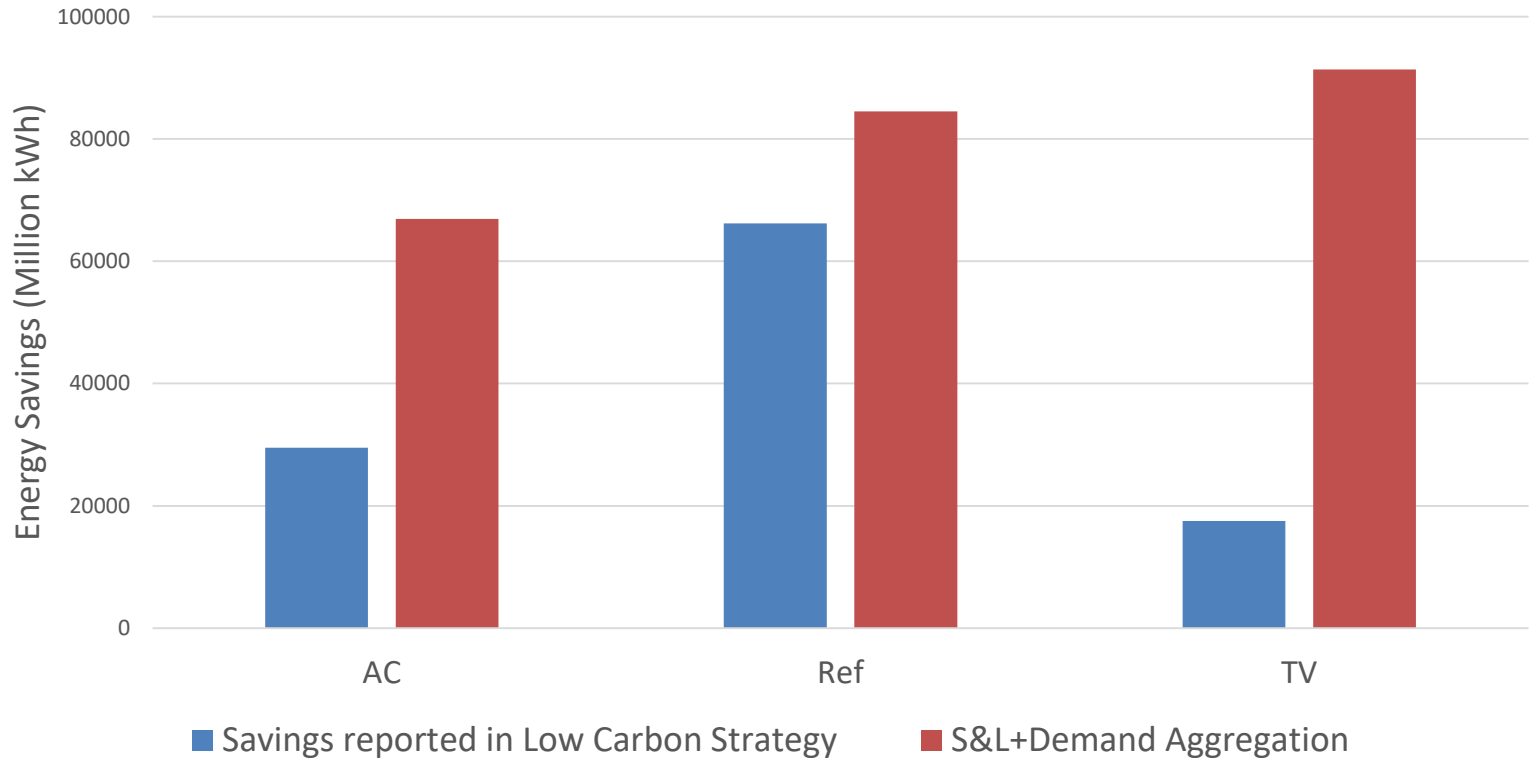
Benefits of Incorporate Star Rating in Procurement/Demand Aggregation

Bridge the price gap between successive star rating levels

Enhanced credibility due to compliance checks of S&L

Build consumer awareness and trust in Government programs

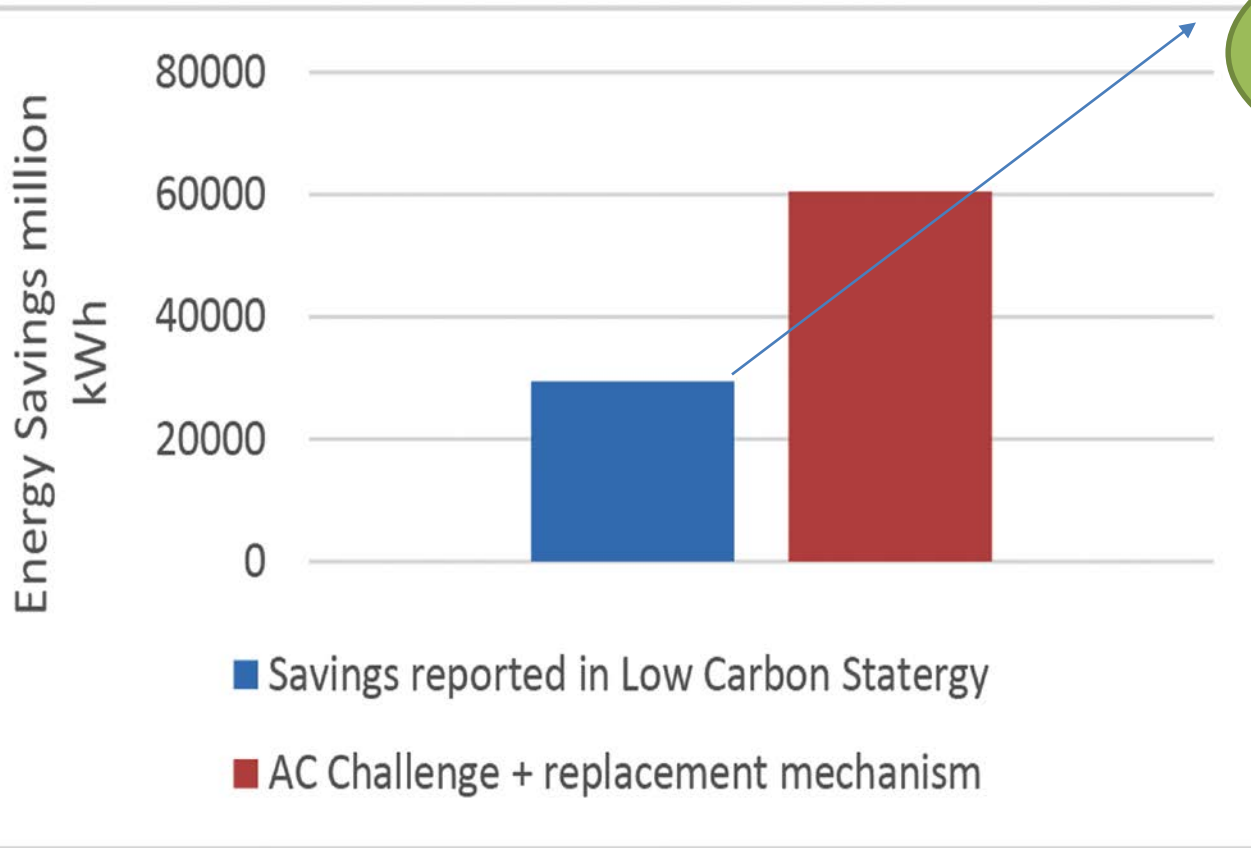
Saving projection for 2030



ACs- 10% of current 4 star penetration results in 56% savings
 Refrigerator- 10% of 5 star penetration in 22% savings
 Television- 10% of 5 star penetration in 81% savings

Combined Approaches- Incentive based

- Scheme to replace old star rated appliances with super efficient



52% higher savings

30% of ACs sold in 2011 replaced with Super efficient ACs

Saving projection for 2030



Combined Approaches- Tariff Rebate

Can be implemented in partnership with DISCOMs

- Direct reduction in the electricity bill
- Year end claim by producing electricity bill at DISCOM
- Discount of equivalent amount while purchasing 5 star appliance

Climatic Zones	Average yearly Hours with temp >35°C	Avg. Energy consumption- 2 Star AC (kWh)/	Avg. Energy consumption -SE AC (kWh)	Energy Savings (kWh) /AC/year)	Rebate amount for 2 years for every SE AC (in €)	Actual cost of AC to Consumer (in €)
Warm Humid &	341	2.0	0.958	339	47	852
Hot & Dry	940	2.0	0.958	934	131	768
Composite	649	2.0	0.958	645	90	809

Seasonal tariff rebate mechanism



- S&L program is flagship program in India
- Cumulative savings from S&L (2006-2014) and UJALA (until February 17) resulted in 35,227 MW of avoided capacity generation
- Need to accelerate the deployment of highly efficient technologies for transforming the markets
- Periodic review and strengthening of standards for higher stringency
- Potential impact on energy savings can be exponentially higher through integrated policy approaches and move the market towards super efficiency





Thank You

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