



Energy Efficiency Appliance Standards: Where do we stand, how far can we go and how do we get there? An analysis across several economies

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- Analysis compares different energy efficiency scenarios for MEPS and comparable programs for governments participating in the Super-efficient Equipment Appliance Deployment (SEAD) initiative
- SEAD is a multinational government collaboration whose primary objective is to accelerate global market transformation for energy efficient products
 - Activities are organized under five working groups:
 - Standards and Labels Programs
 - Awards
 - Procurement
 - Incentives
 - Technical Analysis



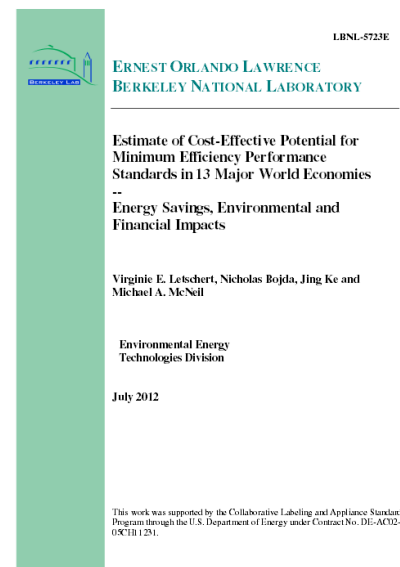
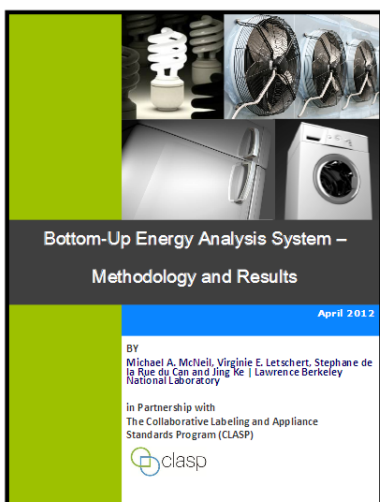
Participants

Observers



Background

- Bottom-up Energy Analysis System (BUENAS), global energy demand model developed by LBNL with support from CLASP and USDOE



- Using BUENAS modeling framework allows for consistent comparison of efficiency scenarios across countries and end-uses, which bring insights on:
 - Progress to date on S&L
 - Opportunities for appliance/equipment efficiency across SEAD partner countries



Scenario Description

BAU

- **Business-As-Usual (BAU)**: forecast energy demand to 2030 based on macroeconomic variables, annual unit energy consumption and recent trends in sales, market efficiency when possible

RA

- **Recent Achievements (RA)** : estimates the impact of MEPS that were implemented, announced, or are being considered from January 2010 to July 2012

CEP

- **Cost-Effective Potential (CEP)** : identifies the maximum energy savings while providing net positive benefits to consumers

BAT

- **Best Available Technology (BAT)** : determines the maximum potential savings that would result from large scale adoption of the most efficient available technologies

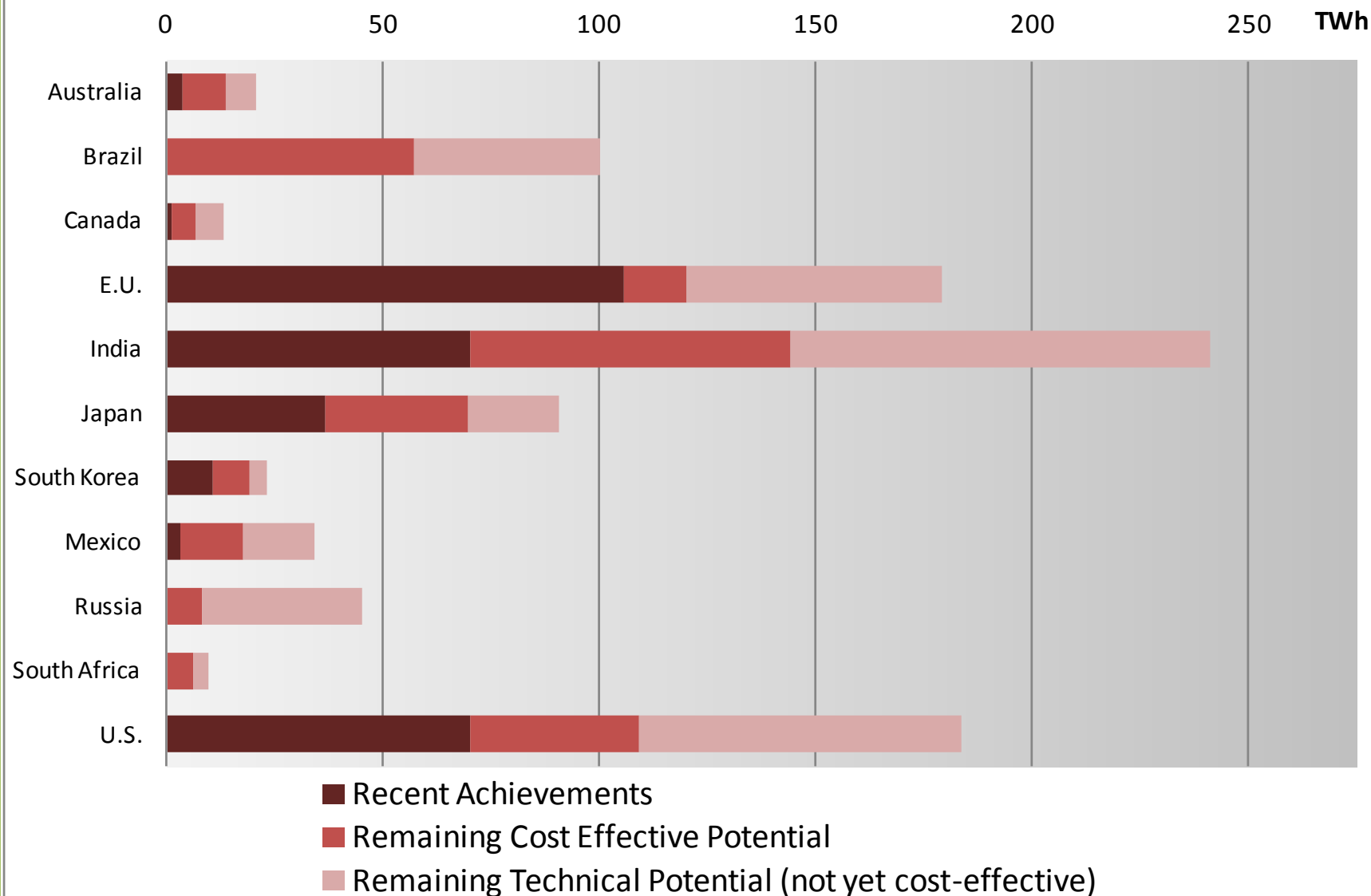


Scope

Appliance	Air Conditioner	Refrigerators	Standby Power	Lighting	Fans	Televisions	Central Air Conditioners	Washing Machines	Freezers
Australia	XX	X	X	XX	X	X			
Brazil	X	X	X	X	X	X			
Canada	XX	X	XX	X	X	X	X		
EU	XX	XX	XX	XX	X	X		XX	XX
India	XX	XX	X	X	X	X			
Japan	XX	XX	X	X	X	X			
Korea	X	X	XX	X	X	X		XX	
Mexico	XX	XX	X	X	X	X	X	XX	
Russia	X	X	X	X	X	X			
USA	XX	XX	XX	XX	X	X	XX	XX	XX
South Africa		X	X	X	X	X			

Shaded = covered in BAU,
XX = covered in RA, CEP and BAT, X = covered only in CEP and BAT scenario)

Energy Savings Potential in the SEAD economies in 2030

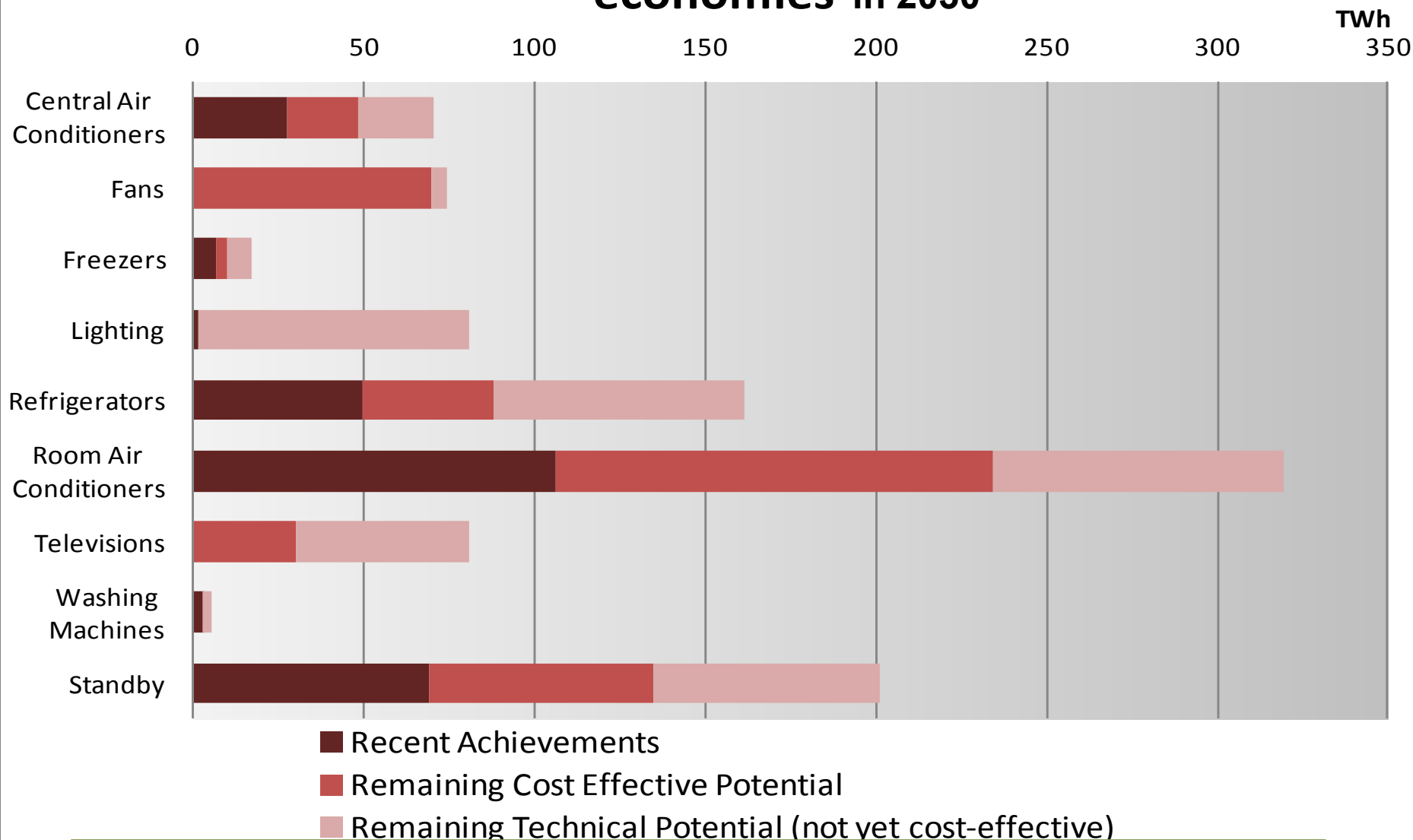


Key Considerations:

RA: Data Availability, Schedule, Focus on MEPS

CEP and BAT: Moving Targets

Energy Savings Potential by Appliance in the SEAD economies in 2030



Technology Profiles:

Established/conservative technologies, Highly cost-effective technologies,
Technologies not yet cost-effective





Reaching Cost-Effective Potential

- **Barriers**

Institutional

- Lack of public process
- Schedule and scope

Economy

- Subsidized tariffs
- Upfront cost

Capacity

- Lack of data
- Lack of resources to carry analysis



- **Best Practices/ Policy Remedial**

- Engage stakeholders in MEPS-setting process
 - Establish process of prioritization (BUENAS)
- Remove subsidies or consider incentives for ee appliances (LEERA)
- Financial incentives
- Involve stakeholders in data collection
 - Robust techno-economic analysis at low cost (PAMS-MEPS)



Moving toward Technical Potential

Existing cost-effective
potential not
addressed

Emerging super-
efficient technologies
with large energy
saving potential

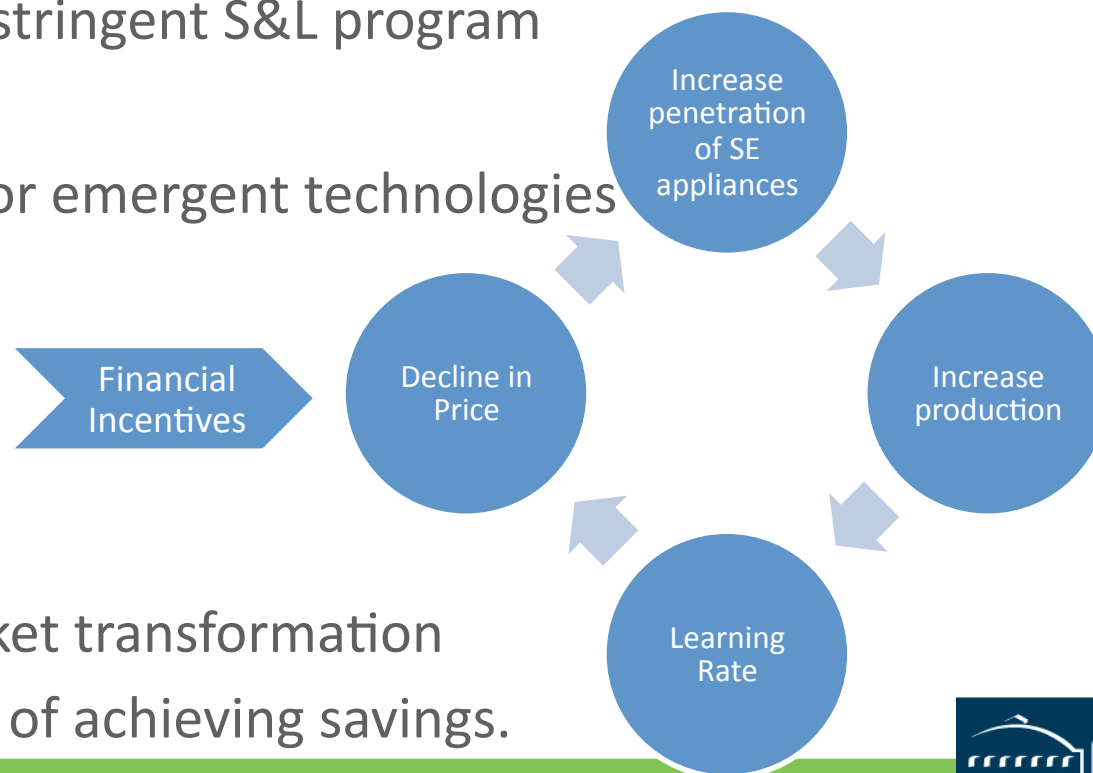


Complementary policy
measures, such as financial
incentives, are needed to
accelerate market
transformation



Benefits of Financial Incentives

- Increase penetration of super-efficient appliances
- Go beyond S&L policies – accelerating the pace of market transformation towards super-efficient products
- Prepare the market for more stringent S&L program
- Support local industries
- Create a sustainable market for emergent technologies



➡ FI are at the front end of market transformation and an essential link in the chain of achieving savings.



Conclusion

- 900 TWh of potential annual energy savings in SEAD economies in 2030 (500 Mt CO₂)
- Two-thirds have been found cost-effective (600 TWh).
- Situation varies greatly between SEAD partners, on average they have captured only about half of this potential
- Techno-economic analysis is required to justify more stringent MEPS
- Complementary measures such as financial incentives help achieve higher penetration of efficient technologies
- S&L and incentive programs can work together to accelerate market transformation for ee appliances by encouraging adoption of more efficient products, driving down the cost of efficient technologies, and removing inefficient products from the market.



Thank you!

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