Overview of California’s Appliance Standards, and a Proposal for Multi-state Cooperation

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Overview of CEC

• Created in 1975 to be California’s energy policy agency:
  – Power plant licensing
  – Efficiency standards for buildings and appliances
  – Energy supply and demand assessments
  – Research ($80 M/yr)
  – Renewables ($220 M/yr)
• 5 commissioners appointed by Governor
• 450 staff, $360 million budget
• Website: www.energy.ca.gov
GWH Impacts from Programs Begun Prior to 2001

~ 14% of Annual Use in California in 2001

Utility Programs: at a cost of ~1% of Electric Bill

Building Standards

Appliance Standards

Public Interest Energy Strategies – CEC #100-03-12F
Total Electricity Use, per capita, 1960 - 2001

- **U.S.**
- **California**

- 1960: 4,000 kWh
- 2000: 12,000 kWh
Economic benefits

- California kWh/person would have been 50% higher if we kept up pre-1975 growth
- California electric bill in 2004 ~ $32 Billion
- so we’ve avoided ~$16 B/yr of electricity bills
- we have spent about 1%/yr on utility programs and standards (about $10/family/yr)
- so, net saving is “only” ~$12B/year, but that is $1,000/family/yr.
California state law

• Public Resources Code sec 25402(c), requires the CEC to set standards:
  – for all appliances that use a significant amount of energy.
  – that are feasible, and must reduce demand growth.
  – that are cost-effective to consumers over the life cycle of the appliance.

• Manufacturers must certify to the CEC they meet the standards in order to sell in the state.

CEC appliance regulations

• Adopted by the Commission.
• Specifies standards, compliance and enforcement provisions.
• Current regulations “Title 20” (~150 pp):
  – www.energy.ca.gov/appliances/documents/
• CEC appliances standards website:
  – www.energy.ca.gov/appliances
Regulated appliances – adopted 78-84

- IIDs
- refrigerator
- room AC
- central AC
- heat pumps
- furnaces
- boilers
- wall heaters
- plumbing fittings (showerheads, faucets)
- ballasts
- large AC (65-135 KBtu).
Regulated appliances – adopted 2002

- central AC (EER)
- commercial AC
- vending machines (lighting)
- commercial frigs (transparent and solid doors <85 CF)

- traffic signals
- torchieres
- domestic and coin-op clothes washers
- distribution transformers
- exit signs
New standards – adopted 2004

- external power supplies
- digital TV adaptors
- commercial frigs
- walk-in frigs
- vending machines (daily energy use)
- ice makers
- refrigerated water dispensers
- pedestrian traffic signals
- audio and video consumer electronics
- very large AC (240-760 KBtu)
- evaporative coolers
- pool pumps
- portable spas
- pre-rinse spray valves
- fluorescent ballasts
- (and others …)
Standards for data reporting only

• Purpose: gathering data for future standards and other evaluation programs.
• Requirements adopted 2004:
  – ceiling fans
  – evaporative coolers
  – whole house fans
  – residential exhaust fans
• Delayed: set-top boxes (IRDs)
CEC activities in 2005

• “Clean up” rulemaking
• Rulemaking to adopt delayed lighting standards:
  – general service incandescent lamps
  – incandescent reflector lamps
  – metal halide lamps
Standards development process

- Rely extensively on utility staff and consultants.
- PG&E CASE program (Codes and Standards Enhancement):
  - www.energy.ca.gov/appliances/documents/case_studies
Compliance

• Manufacturers required to certify to the CEC that they meet the standard.

• CEC created databases (were printed, now on-line):
  – www.energy.ca.gov/efficiency/appliances
  – Data is also used for building code compliance.
Enforcement

- CEC had contract for testing (about $75k/yr), and used to do spot checks.
- Now, CEC can demand test report from manufacturer, and if do not get one, CEC can have test performed at mfr expense. (sec. 1608 (c)).
- If do not comply, then appliance is delisted and is not legal to be offered for sale in the state.
- Also survey retail stores…
Cost of CEC appliance program

• CEC costs:
  – about 5 FTE staff – about $500k/yr
  – database support – about $200k/yr
  – legal support – about $100k/yr (preemption battles are big unknown)

• Utility support (PG&E CASE):
  – about $500k/yr (including preemption waiver support)

• Total: about $1.3 million/yr
Activities in other states

• ASAP: Appliance Standards Awareness Project
  – Andrew deLaski, Executive Director
  – Report on benefits of state standards (energy, dollar, pollution savings)
    • www.standardsasap.org
  – Summary of current state activities attached

• States where standards enacted/adopted:
  – AZ, WA, MD, CT, NJ, CA

• States where standards are pending:
  – MA, ME, NY, OR, RI, VT, PA

• Covered products vary by state; generally subset of those adopted in CA in 2004
Proposal: Multi-state Standards Program

- Problem: creating compliance and enforcement programs are a burden to states adopting standards
- Solution:
  - Compliance: states can refer to CEC database for certified products.
  - Enforcement: CEC can provide testing when other states request, and delist non-complying products. Should do retail surveys, probably need to be local.
- ASAP is coordinating effort to create “model regulations” that would enable this.
Opportunities…

- **Technology**: Research combined with utility emerging technology and efficiency programs.
  - Cycle: R&D > ET > EE > standards

- **International markets**:
  - External power supplies are an example of many entities working together on test procedures and specification levels for voluntary and mandatory programs.
  - EnergyStar, California, China, Australia, European Union, and other countries.
  - Next: set top boxes and TVs
    - Meetings in San Francisco June 28, 29