



CALIFORNIA ENERGY COMMISSION

CEC appliance standards and electronics research



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Battery charger workshop

San Francisco, 11/17/05





Topics

- What is the California Energy Commission?
- Growing importance of energy use of electronics
- CEC appliance efficiency standards (“Title 20”)
- CEC Public Interest Energy Research (PIER) program
- Today’s agenda



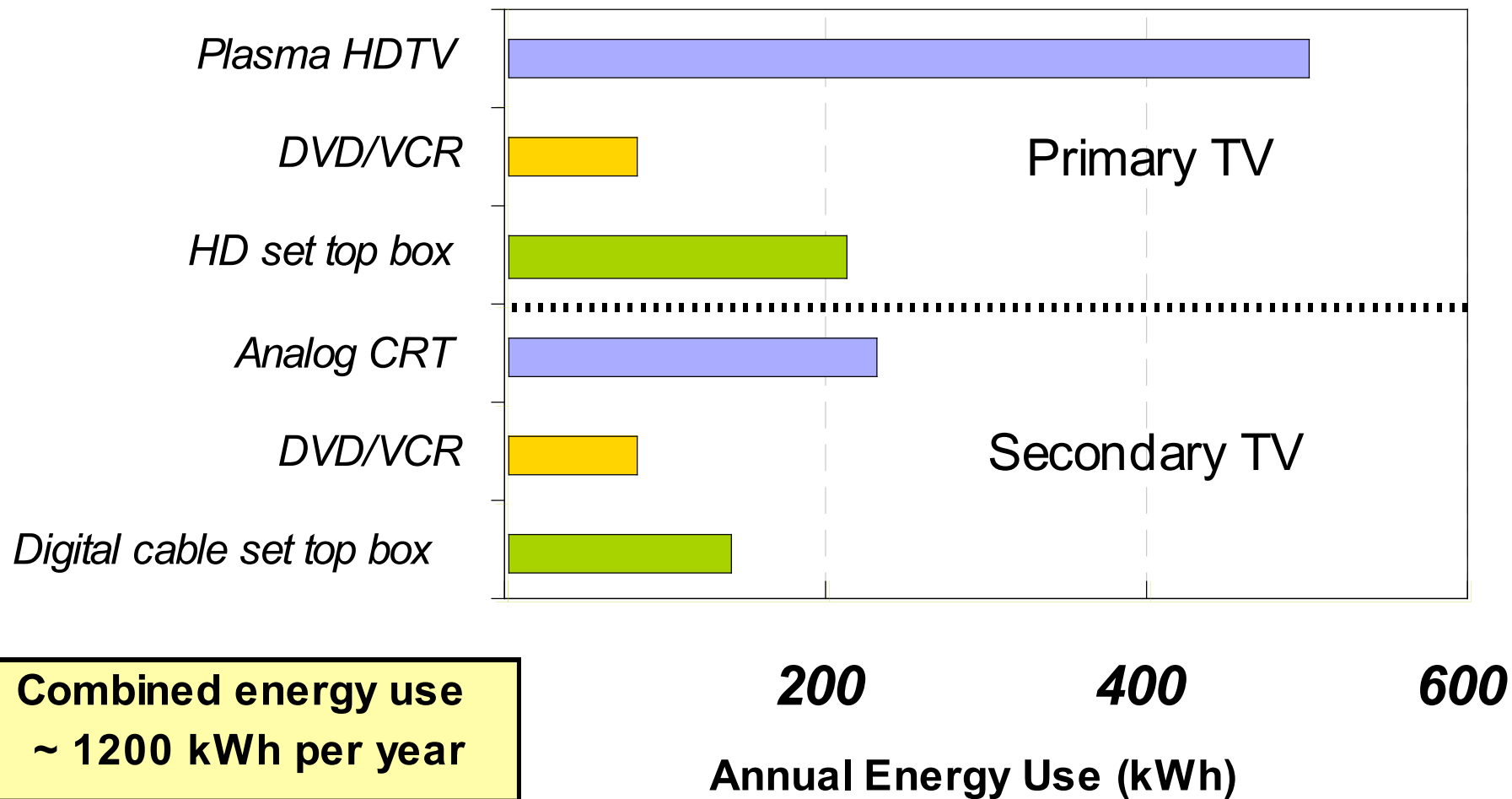


Overview of CEC

- Created in 1975 to be California's energy policy agency:
 - Power plant licensing
 - Efficiency standards for buildings and appliances
 - Energy supply and demand assessments
 - Public Interest Energy Research (\$80 M/yr)
 - Renewables (\$220 M/yr)
- 5 commissioners appointed by the Governor
- 450 staff, \$360 million budget
- Website: www.energy.ca.gov



Household Energy Use for Entertainment Electronics

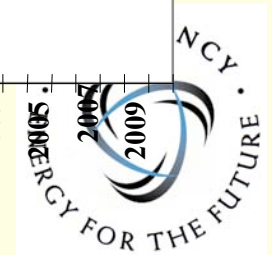
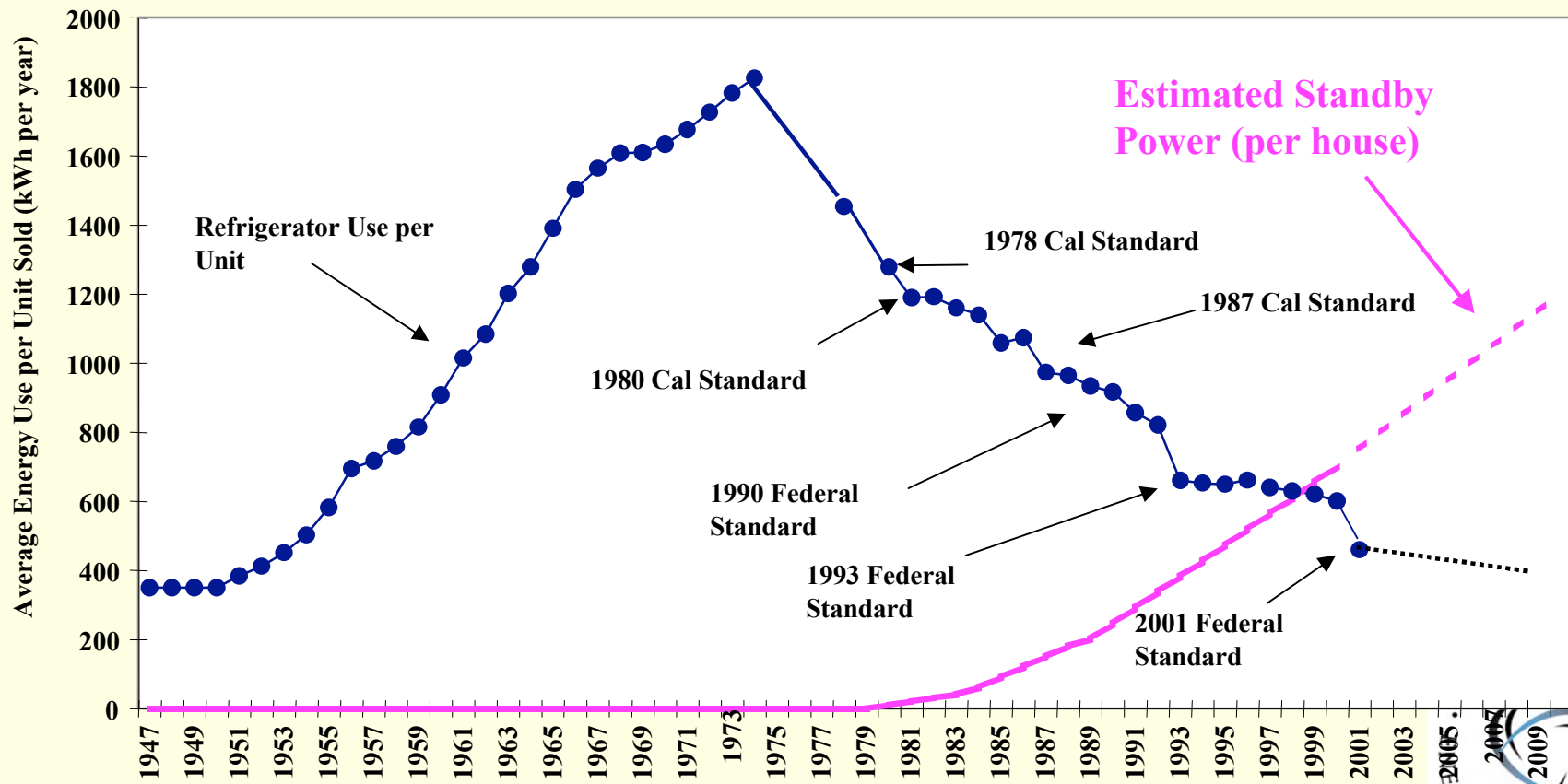


NRDC, "Tuning in to Energy Efficiency: Prospects for Saving Energy in Televisions," January 2005.





Refrigerator and standby energy use





California's appliance standards

- Standards are minimum efficiency requirements for appliances that are offered for sale in the state.
- Criteria: standards must be feasible and cost-effective.
- Enforcement: manufacturers must certify that their appliances meet the standards.
 - CEC maintains on-line databases
- Update standards about every three years.
- CEC standards became federal standards in 1988.
- Website: www.energy.ca.gov/appliances
- Office manager:
 - [Bill Pennington, bpenning@energy.state.ca.us](mailto:bpenning@energy.state.ca.us)





Audio and video equipment standards

<i>Appliance</i>	<i>Effective Date</i>	<i>Maximum Power Usage (Watts) During Standby/Active Mode</i>
Compact Audio Products	January 2007	2 W standby for those without a permanently illuminated clock display 4 W standby for those with a permanently illuminated clock display
Televisions	January 2006	3 W standby
DVD players and recorders	January 2006	3 W standby
Digital Television Adapters	January 2007	1 W standby 8 W active





External power supply standards effective July 2006 (Tier 1)

<u>Nameplate Output</u>	<u>Minimum Efficiency in Active Mode</u>
<u>0 to < 1 Watt</u>	<u>$0.48 * \text{Nameplate Output}$</u>
<u>≥ 1 and ≤ 49 Watts</u>	<u>$0.089 * \text{Ln}(\text{Nameplate Output}) + 0.48$</u>
<u>> 49 Watts</u>	<u>0.84</u>
	<u>Maximum Energy Consumption in No-Load Mode</u>
<u><10 Watts</u>	<u>0.5 Watts</u>
<u>>10 Watts</u>	<u>0.75 Watts</u>

Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.





Electronics standards in other states

- Consumer audio and video products
 - CA, NY
- Digital television adapters
 - CA, NY
- External power supplies
 - CA, NY, AZ, MA, OR, RI, WA





PIER program

- Public interest research in 6 areas:
 - Buildings
 - Renewables
 - Advanced generation
 - Environmental
 - Industry, agriculture and water
 - Energy systems integration
- Funding: \$62 M/yr electric, \$20 M/yr natural gas
- Website: www.energy.ca.gov/research





Research in electronics

- Co-sponsored development of external power supply test procedure, and design competition
- Contract with Ecos Consulting to continue EPS work, and develop BC test procedure
- Currently reviewing proposals as part of \$3M RFP
- Areas of interest: set-top boxes, networking...
- Program manager:
 - **Brad Meister, bmeister@energy.state.ca.us**





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