



CPUC & Energy Efficiency



CEC Staff Workshop on Battery Chargers and Lighting Controls

Ayat Osman, PhD

Energy Efficiency Evaluation and Planning

California Public Utilities Commission

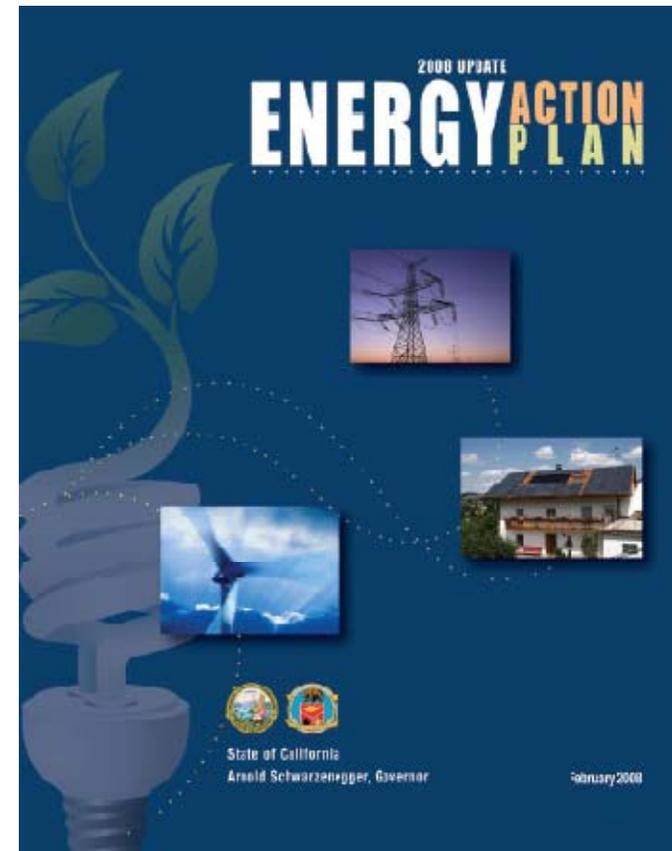
March 3rd, 2011





Energy Action Plan (EAP)

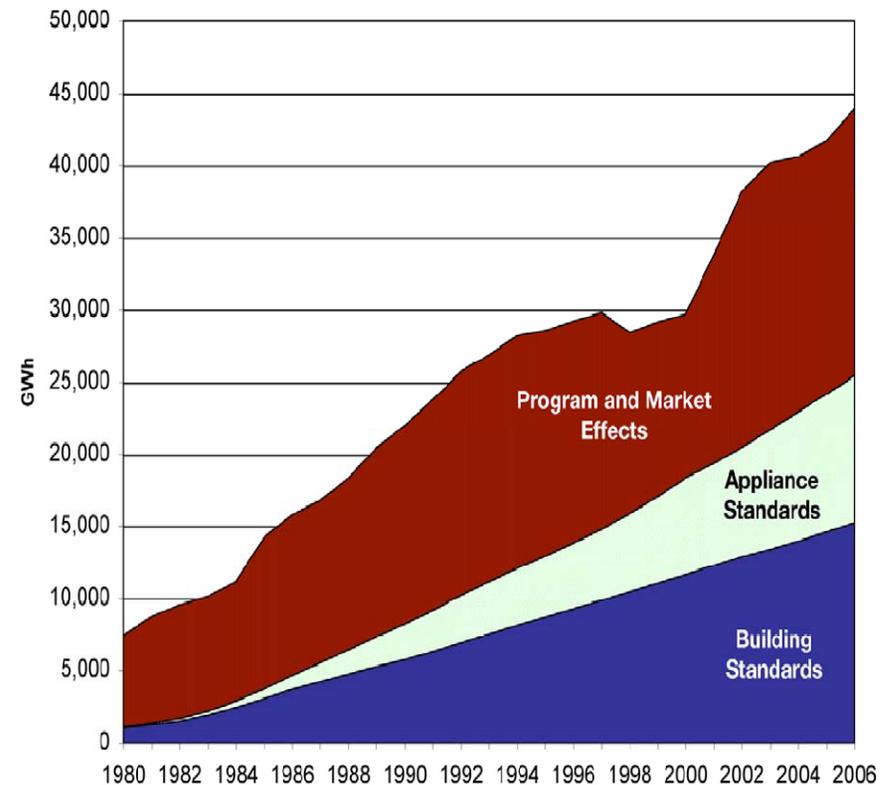
- CPUC, CEC, and CPPA adopted EAP in 2003 and EAP II in 2005
- **2008 EAP Update**
 - Loading Order: Energy efficiency, Demand Response, Renewable Energy and clean, distributed generation, and Cleanest available fossil-fired generation
 - Need for Coordination & Integration
 - Broadening Perspectives & the Focus of Action
 - Leverage through Partnerships
 - Cross-Sectional Options





Energy Action Plan (Cont..)

- **Energy Efficiency**
 - Tool for addressing greenhouse gas emissions in the energy sector & meeting AB 32 goals
 - AB 2021 required CEC, PUC and publicly owned utilities to set SW energy efficiency targets for 2017
 - All cost-effective energy efficiency
 - Powerful strategies: building codes, appliance standards, and utility energy efficiency programs



Cumulative Conservation Savings (2008 Update EAP)

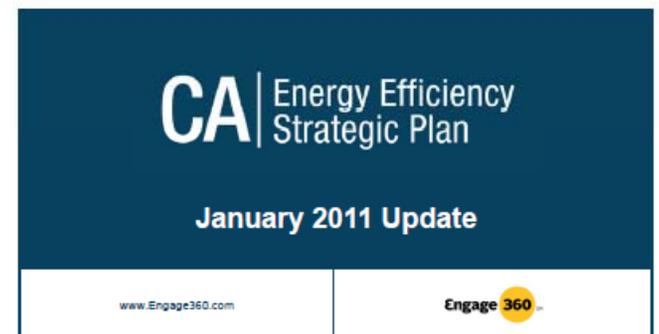




Need for Innovative Approaches!

- **“Big, Bold” programmatic initiatives:**
 - All new residential construction in California will be **zero net energy by 2020**
 - All new commercial construction in California will be **zero net energy by 2030**
 - Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California’s climate
 - All eligible low-income customers will be given the opportunity to participate in the **low income energy efficiency program by 2020.**

Energy Efficiency Strategic Plan (EE SP)





Next Steps (EAP 2008 Update)

- Partnerships with local governments on EE delivery, as well as **enforcement of building codes**
- **Additional more stringent, codes and standards for appliances and buildings and the associated technology and design research and development to support them**
- **Local government support in building code enforcement**
- SW SP that will serve as a **“roadmap” of actions** needed to achieve all cost-effective EE potential in California
- Strategies to achieve targets for **“big bold” initiatives** in residential and commercial new construction and HVAC
- New Strategies to address existing buildings and emphasis on a more **comprehensive approach**
- EE savings goals consistent with AB 32
- Additional low-income EE initiatives

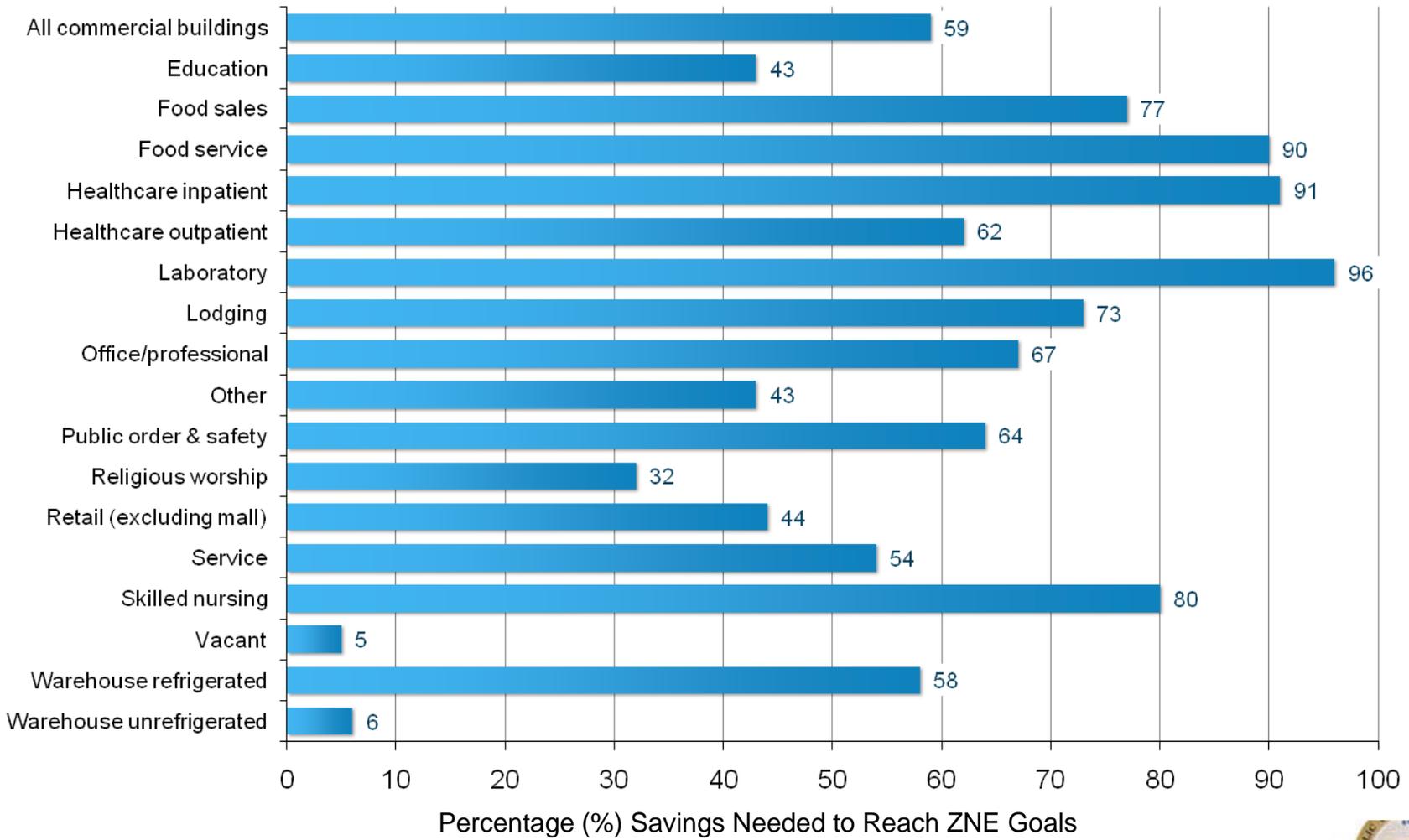




ZNE & Plug Loads

- SP calls to **expand T20 and T24** to address all significant energy end uses
- **Time-sensitive** opportunities to inform the next T24 upgrade; T20 continue update process until 2016
- Non-regulated energy loads (plug loads) in buildings
 - Include office equipment and refrigeration
 - About 25% of overall energy use
 - Up to 70% in restaurants and grocery stores
 - Plug load are expected to grow

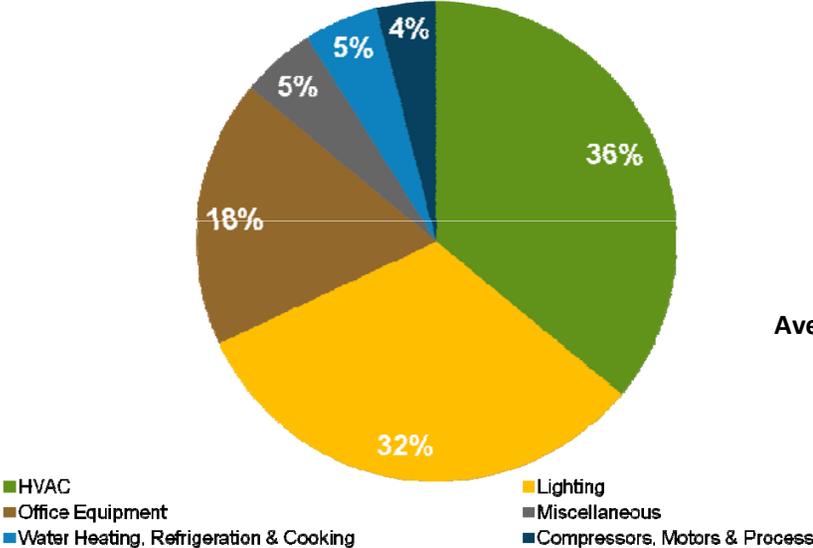




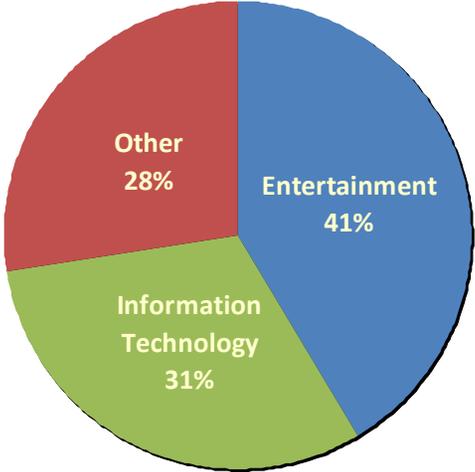


ZNE & Plug Loads

California's Office Electricity Consumption



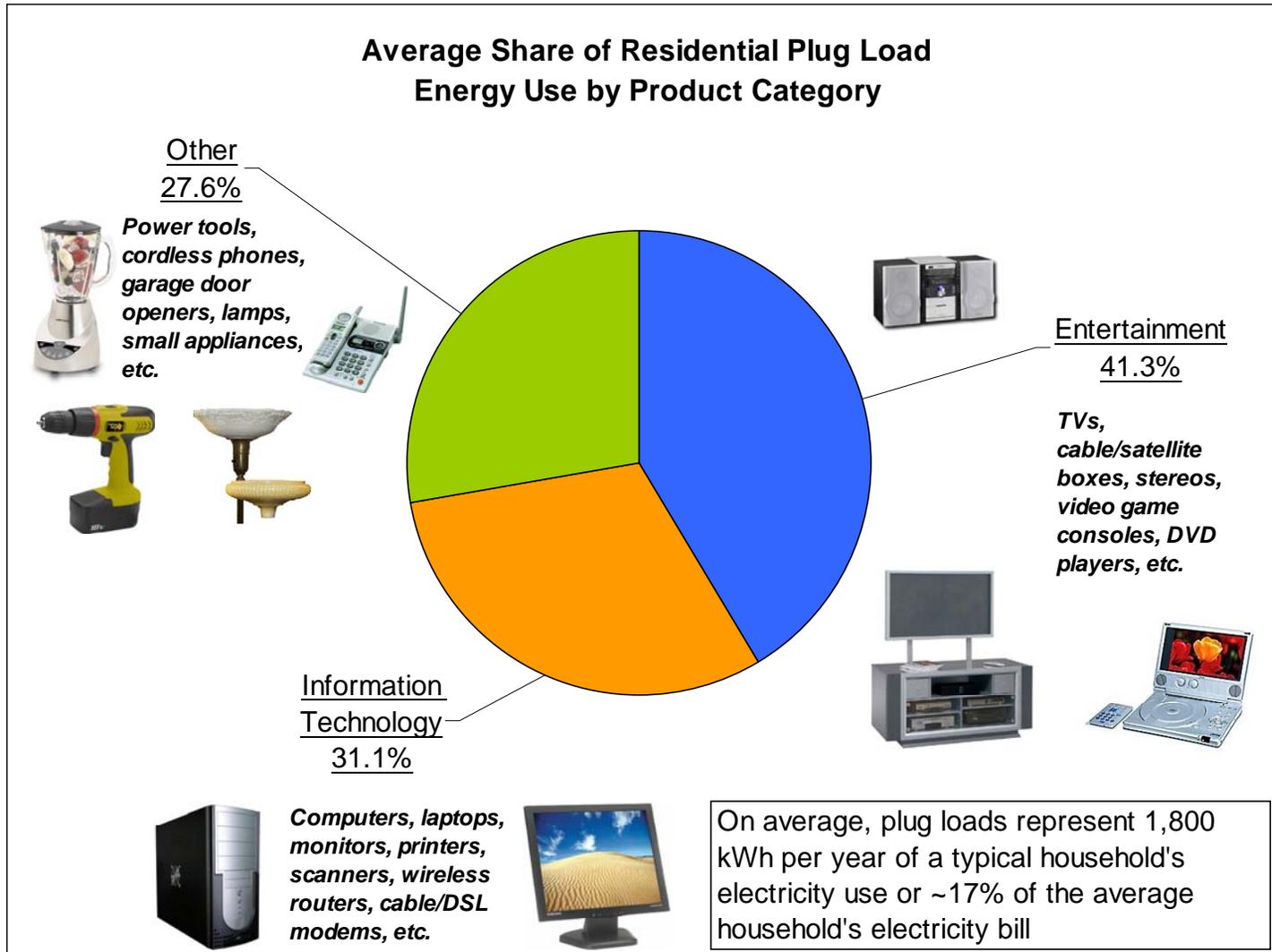
Average Share of Residential Plug Load Energy Use by Product Category





ZNE & Plug Loads

KS2



Slide 9

KS2

Need to redraw for palate, plus delete pictures and credit CEC

Kristina Skierka, 10/7/2010



EE Strategic Plan → ZNE Action Plan

- ZNE Action Plan: Commercial Building Sector
 - Designed to achieve the milestones identified in the Strategic Plan
 - Continued work with the broader stakeholder community, including state agencies, buildings industry, utilities, manufacturers, contractors, local governments (Champions Network: www.Engage360.com)





ZNE Action Plan

- Strategy 1-2: Expand T20 and T24 to Address All Significant Energy End Uses

Milestone	Champions	Key Actions	Timeline
1-2-1 Develop and adopt broader codes and standards for plug loads such as copiers, printers, battery chargers, televisions	David Jacobowitz, Google	Research new plug load efficiency opportunities; review/test costs and performance	Complete
	Brad Meister, CEC	Develop case studies to substantiate costs, savings	Q3 2010
	Ken Rider, CEC	Engage industry stakeholders on relevant changes to T20	Q2 2011
	Harinder Singh, CEC	Propose/adopt changes to Title 20	Q2 2012





ZNE Action Plan

2-8: Improve Utilization of Plug Load Technologies Within the Commercial Sector

Milestone	Champions	Key Actions	Timeline
2-8-1 Test and deploy package of rebates, incentives and voluntary industry agreement to bring significant numbers of the best available technologies for managing plug loads within the commercial sector	David Kaneda, Ideas, Inc.	Conduct research into plug load energy impacts	Complete
	Rich Lauman, Ecos Consulting	Define a set of plug load strategies	Q3 2010
		Conduct pilot efficiency strategies in initial buildings to evaluate effectiveness and user response to plug load efficiencies	Q4 2010
		Review and test additional plug load control strategies	Q4 2010
		Create recommendations for 2013-2015 programs	Q4 2011
		Collaborate with commitment campaign in Strategy 2-1	Q3 2012





ZNE & Plug Loads: Recommendations

- Aggressive consumer education on the energy use of office electronics
- Promotion of office electronics whose power management features cannot be disabled
- Promotion of highly efficient products and of highly efficient power supplies
- Use of —smart plug strips and other automatic controls
- Consideration of office electronics in Title 20
- Consideration of switched outlets in Title 24





Thank you!
Questions?

For Additional Information

www.cpuc.ca.gov

<http://www.cpuc.ca.gov/PUC/energy/Energy-engage360.com>

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