

Trends in Residential Energy Consumption and Opportunities for Reduction

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California Air Resources Board

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Today's Seminar

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- Behavioral responses to real-time individual energy usage information: A large scale experiment
Magali A. Delmas (UCLA)
- Using Information to Improve the Effectiveness of Nonlinear Pricing: Evidence from a Field Experiment
Matthew E. Kahn (UCLA)
- Exploring Very Low Energy Consumption Rates in Urban California Households
Alan Meier (UCD) & Reuben Deumling (We Don't Need Oil)

Why Study Energy Use Behavior?

- CA Climate Legislation
 - AB32 - Reduce GHG emissions to 1990 levels by 2020
 - Executive Order S-03-05 (2005) - 80% below 1990 levels by 2050
- AB 32 Scoping Plan: CA's road map
 - 2008 Plan
 - Update Release - Fall 2013

Behavioral Research Projects at ARB

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■ Current Projects

■ Commercial buildings

- Behavioral strategies to bridge the gap between potential and actual savings in commercial buildings
- Using feedback from commercial buildings to support energy-conserving behavior at work and at home

■ Travel behavior

- Examine how land use and transportation strategies, like light rail transit and complete streets, influence travel behavior

■ Upcoming Projects

■ Travel behavior

- Examining Factors that Influence ZEV Sales in California
- Analyzing consumer behavior of vehicle purchases, including zero emission vehicles
- Examining household usage and charging behaviors of plug-in electric vehicles

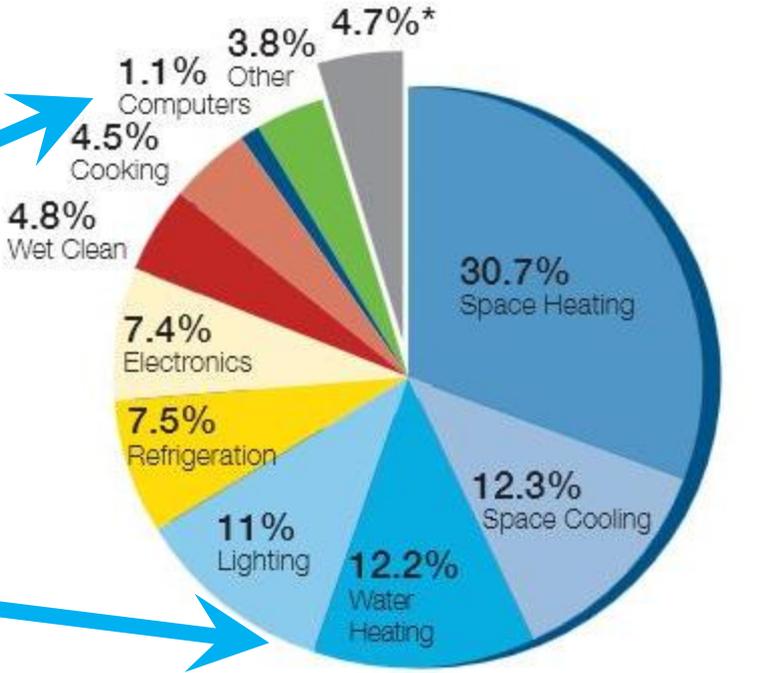
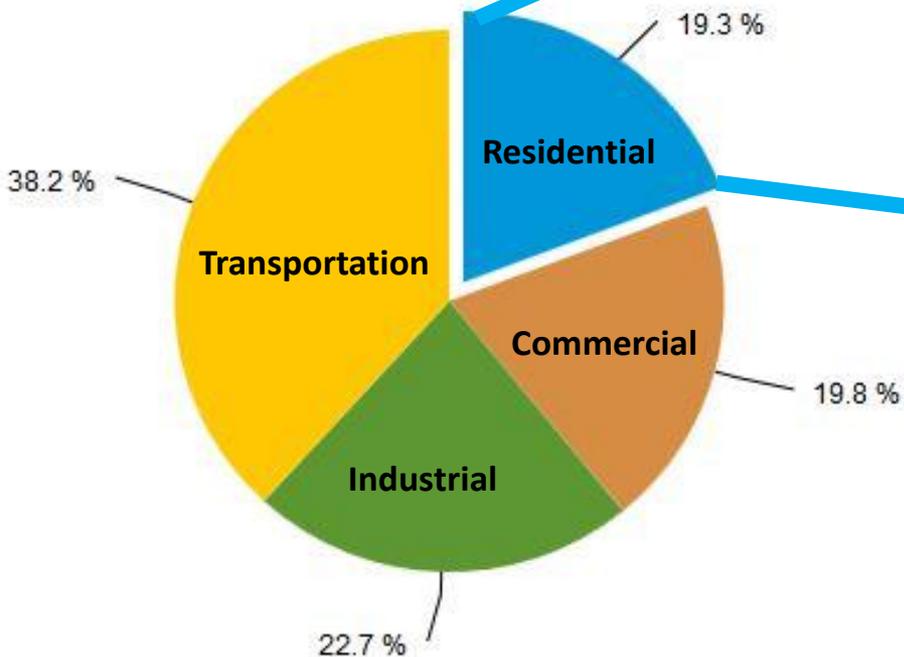
California's Behavioral Research Efforts



- Multiple State Agencies Involved:
 - California Air Resources Board (CARB)
 - California Energy Commission (CEC)
 - California Public Utilities Commission (CPUC)
- Research Partners
 - Investor-Owned Utilities

Residential Energy Consumption

Energy Consumption by Sector in CA

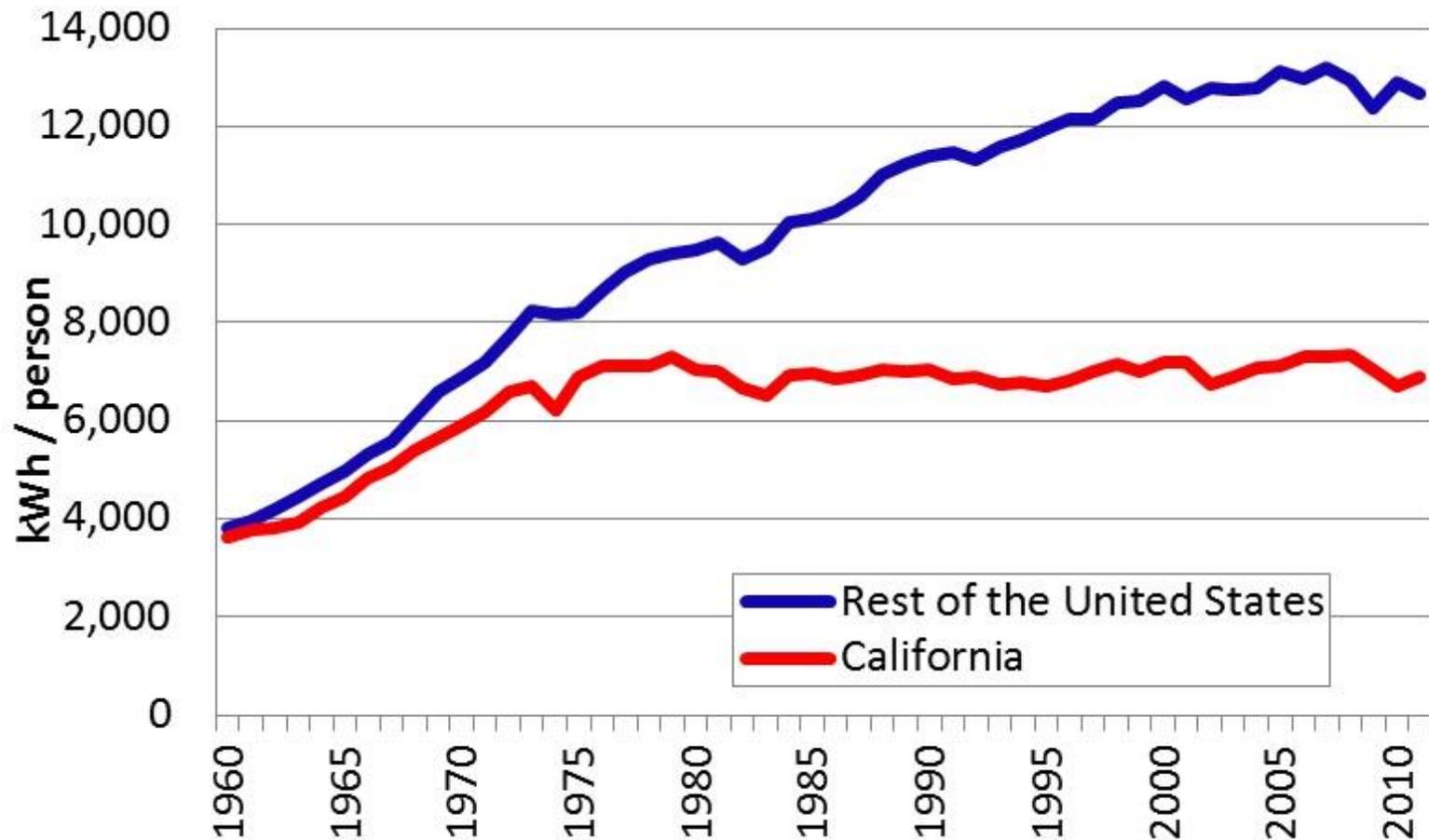


Residential Energy Use

Source: U.S. Energy Information Administration

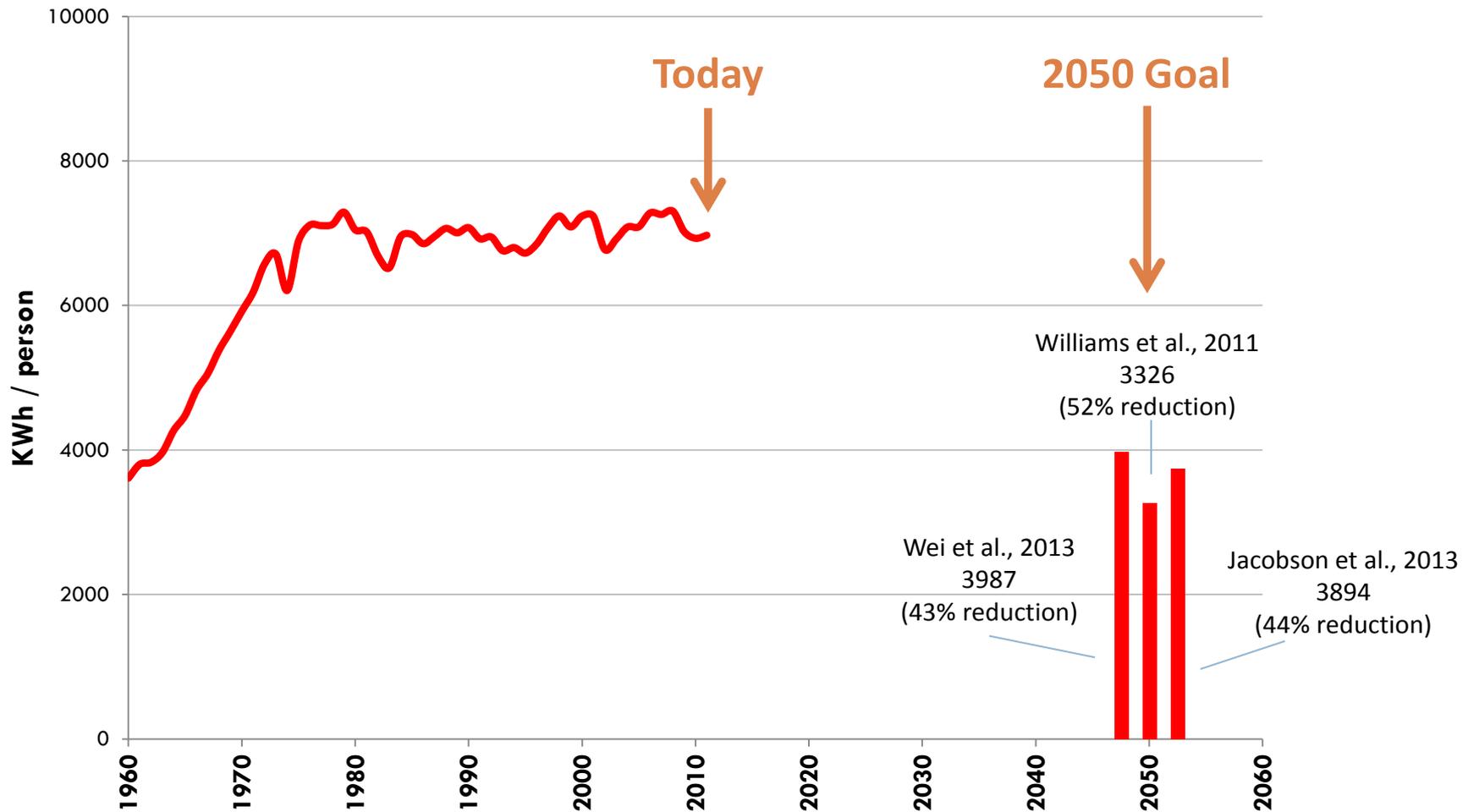
Energy Efficiency - California vs US

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Source: U.S. Energy Information Administration

Historic and Projected Energy Efficiency in CA



Outreach for ARB's Research

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- Final reports
 - <http://www.arb.ca.gov/research/research.htm>
- Archived video and slides
 - <http://www.arb.ca.gov/research/seminars/seminars.htm>
- Listserve
 - http://www.arb.ca.gov/listserv/listserv_grp.php?listtype=R0
- Contact
 - spittigl@arb.ca.gov

Chair's Lecture Series

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Climate Change: Its Impact on California's Cities and Economy

Matthew E. Kahn, Ph.D., UCLA, and author of *Climatopolis: How Our Cities Will Thrive in the Hotter Future*

Tuesday, August 13, 2013, 12 Noon PDT

Coastal Hearing Room, 2nd Floor

Cal EPA Headquarters, 1001 "I" Street, Sacramento, CA

<http://www.arb.ca.gov/research/lectures/speakers/kahn/kahn.htm>