



# Our Future...

## *CalPlug Semiannual Workshop*

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# Looking Into the Future



- What can we expect for the future?
  - **Scary Factor:** Uncertainty
  - **Not So Scary Factor:** Certainty



*Note: Due to the nature of this CalPlug event (which occurred two days before the Halloween), the content presented may not be suitable for all ages. Parental discretion is strongly advised.*



**Scary Factor: Uncertainty**

# Electric Utility History: Past 130 years...



- Energy utilities electrified the world
  - Rapid growth of electricity demand
    - Building bigger and bigger power plants
  - Rapid growth actually helped reduce the cost of energy
    - So, more people have demanded more electricity
  - Source of Energy for Many technologies: Electricity
    - Including Anti-Aging Spa Pods for Pets???
- One technology changed the peak-hours from night-time to day-time...
  - Can you guess which technology?



# Scary Factors (or Challenges)



- Age – Aging Infrastructure
- Big Monsters
  - Oogie Boogie Man: **Internet-of-Things**
  - **Electric Vehicles**: It is bigger than the house (energy use)
  - **Misc. Electric Loads**: Over 50% of energy consumption in ZNE Homes
  - Home Medical Devices
- Smart Home / Smart Grid
  - IQ = ???
  - Some Smart Technologies...
    - R.I.P. – Already?



# Not So Scary Factor: Certainty



- “Nothing Can Be Said To Be Certain Except **Death** and **Taxes**”
- **Green Monsters:**
  - Green Movements & Environmental Regulations
  - Reducing Waste, including energy...

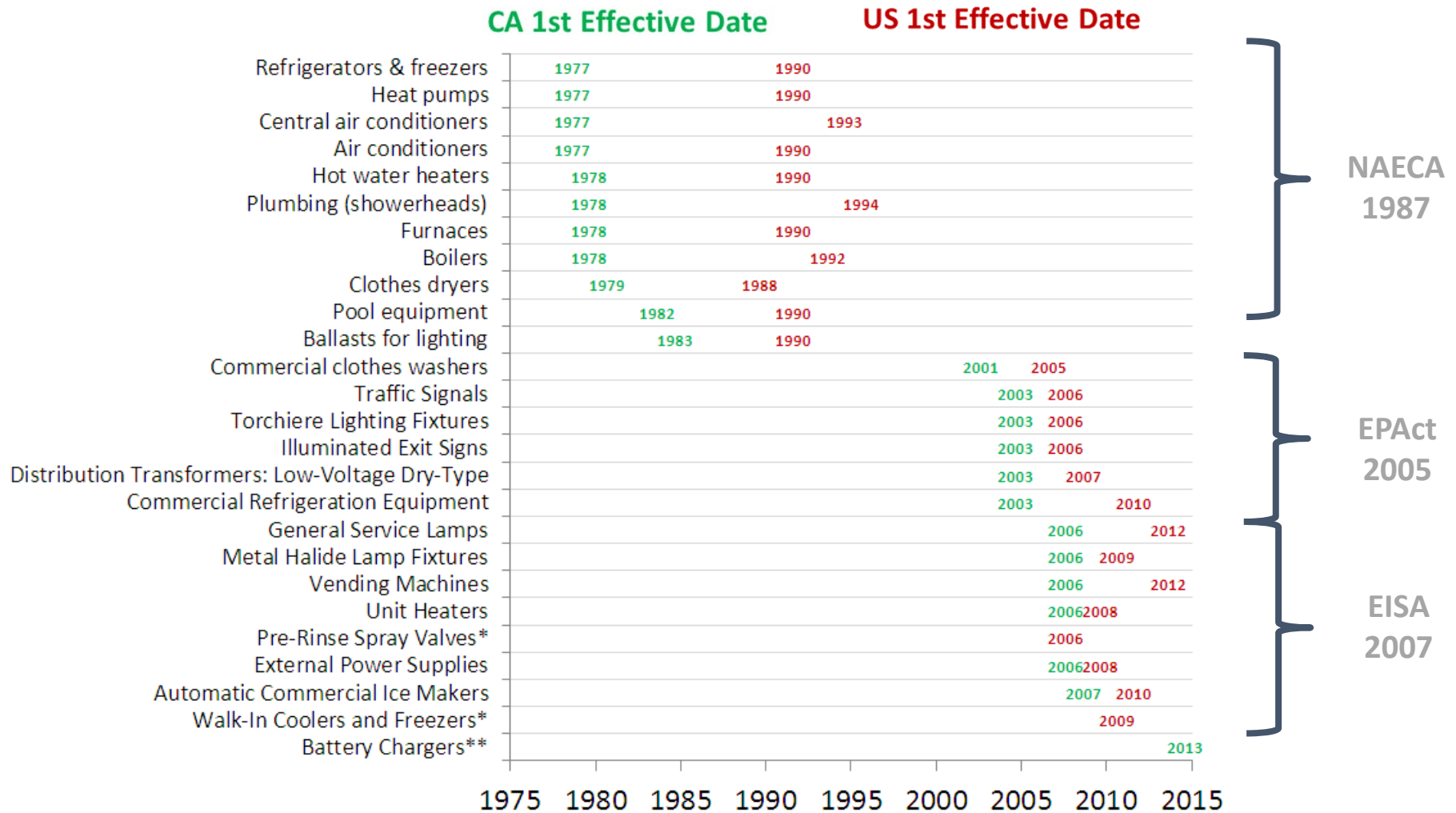


# No So Scary: CA is a nationwide leader of energy and environmental initiatives



- Green House Gas Emission Reduction: Assembly Bill 32, 2005 Executive Order:
  - 1990 levels by 2020 (approximately 30% reduction)
  - 80% reduction below 1990 level by 2050
- California Governor Calls for (by 2030):
  - Increase renewable energy generation to 50%
  - Reducing the petroleum used in cars and trucks by up to 50%
  - Doubling the efficiency of existing buildings
- Zero-Net-Energy (ZNE) Homes by 2020
- ZNE Buildings by 2030

# California Leads the Nation



\*CA standard adopted but preempted before it became effective; \*\*DOE is working on a final rule for battery chargers with effective date TBD

Sources: CEC. <http://www.energy.ca.gov/appliances/documents/CAEnergyEfficiencyStandards.pdf>. ASAP: <http://www.appliance-standards.org/products>



# Products Covered by Federal Standards

## COMMERCIAL

Automatic Commercial Ice Makers  
Boilers, Commercial  
Clothes Washers, Commercial  
Commercial 3-Phase Central AC  
Commercial CAC and HP (Air-Cooled)  
Commercial CAC and HPs (Water- and Evaporatively-Cooled)  
Commercial Water Heaters  
Distribution Transformers: Liquid-Immersed  
Distribution Transformers: Low-Voltage Dry-Type  
Distribution Transformers: Medium-Voltage Dry-Type  
Electric Motors  
Fans, Blowers, and Fume Hoods  
Furnaces, Commercial Warm Air  
Packaged Terminal AC and HP  
Pre-Rinse Spray Valves  
Pumps, Commercial and Industrial  
Refrigeration Equipment, Commercial  
Small Electric Motors  
Unit Heaters  
Urinals  
Vending Machines  
Walk-In Coolers and Freezers

## RESIDENTIAL

Battery Chargers  
Boilers  
  
Central Air Conditioners and Heat Pumps  
Clothes Dryers  
Clothes Washers  
Dehumidifiers  
Direct Heating Equipment  
Dishwashers  
External Power Supplies  
Faucets  
Furnace Fans  
Furnaces  
Microwave Ovens  
Plumbing Products  
Pool Heaters  
Ranges and Ovens  
Refrigerators and Freezers  
Room Air Conditioners  
Toilets  
Water Heaters  
Wine Chillers

## LIGHTING

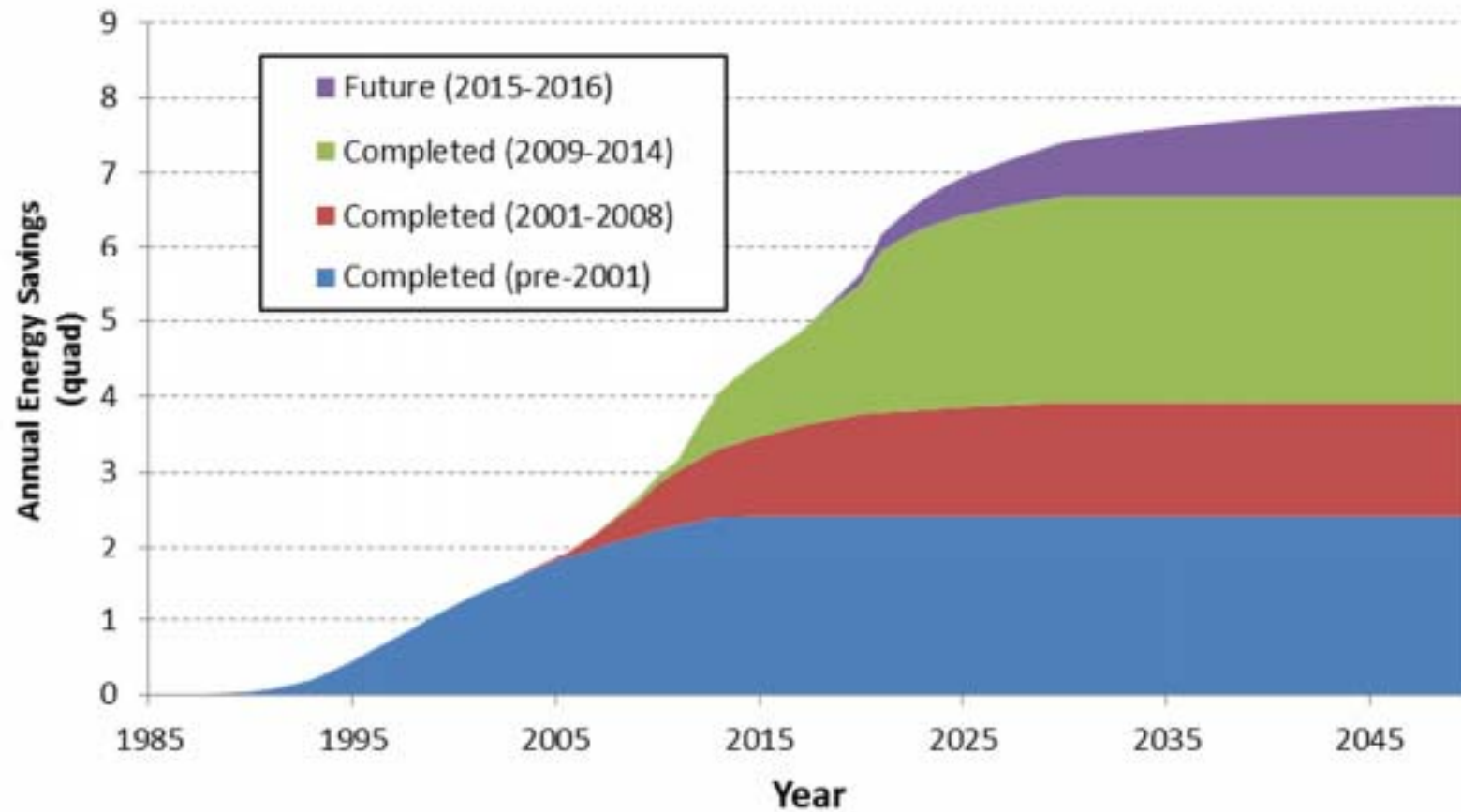
Candelabra & Intermediate Base Incandescent Lamps  
  
Ceiling Fans and Ceiling Fan Light Kits  
Compact Fluorescent Lamps  
Fluorescent Lamp Ballasts  
General Service Fluorescent Lamps  
General Service Lamps:  
Incandescents plus CFLs, GSLED, GSOLED  
HID Lamps  
Illuminated Exit Signs  
Incandescent Reflector Lamps  
Incandescent Reflector Lamps (includes certain BR and Other Exempted IRLs)  
Luminaires  
Mercury Vapor Lamp Ballasts  
Metal Halide Lamp Fixtures  
Torchiere Lighting Fixtures  
Traffic Signals

# 2015-2016 Planned Federal Advocacy

- Commercial Boilers
- Ceiling Fans
- Central ACs
- Clothes Dryers (Res)
- Compressors
- Computers
- Direct Heating Equipment
- Dishwashers (Res)
- General Service Lamps
- Fan and Blowers
- External Power Supplies
- Wine Chillers
- Pool Pumps
- Portable ACs
- Room ACs
- Small Motors
- Water Heaters (Com)
- Water Heaters (Res)

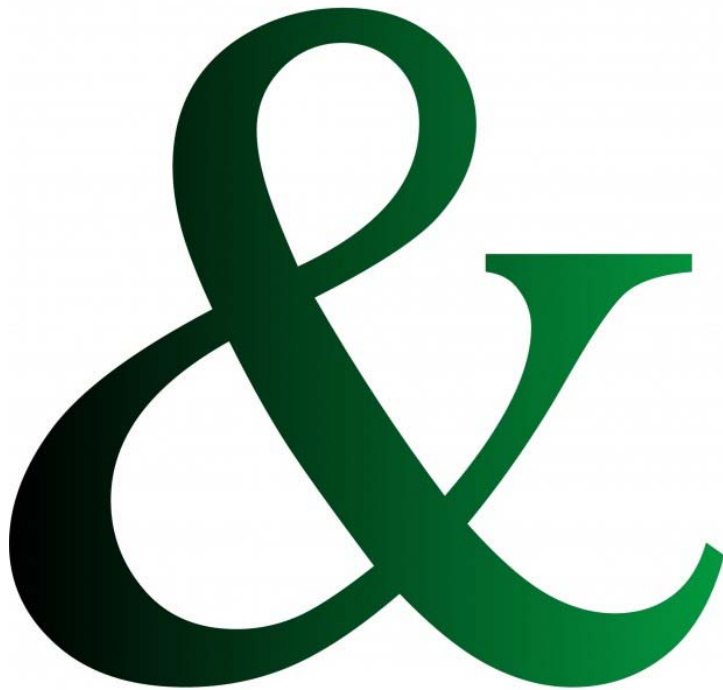


# Savings Impacts from Federal Standards





# One Thing for Sure



- Our Future
- Our Choices
- Our Businesses
- Our Children
  
- Let's Welcome Green Monster Everyday into Our Businesses!

**Thank You!**

