

# California Bill AB 2529

## Plug-in Equipment Efficiency Goal

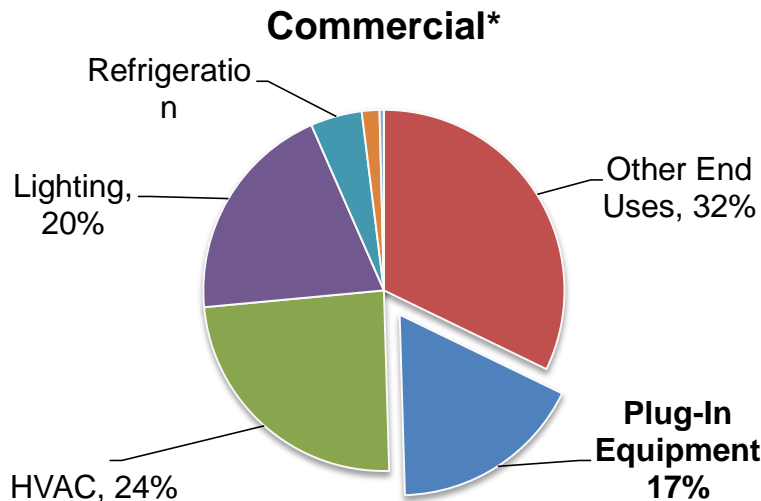
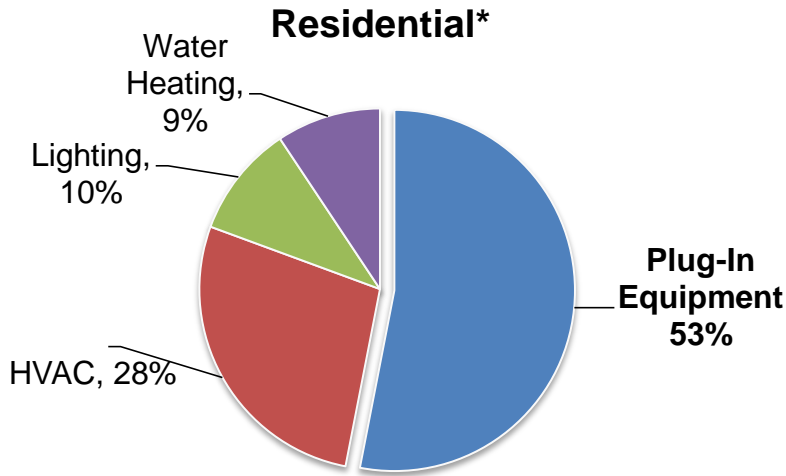
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# Why a Plug-In Equipment Efficiency Goal?



\* EIA AEO 2013

## The problem:

- Plug-in consumption is large and growing
- Current efficiency progress not keeping pace with growth, Zero Net Energy goals
- Barriers to scaling up utility programs

## AB 2529 will:

- ✓ Set ambition level for plug-in efficiency in line with other CA clean energy policies
- ✓ Ensure target-driven planning
- ✓ Pursue all-of-the-above approach

# AB 2529 (Williams) - Plug-In Equipment Efficiency Goal

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## 1. Baseline study

- What plug-in equipment consumes how much, when?

## 2. Statewide reduction targets

<b>Residential</b>	<b>Commercial</b>
25% reduction per household by 2030 below 2014	40% reduction per sq ft by 2030 below 2014

## 3. Coordinated implementation plan

- What are the most cost-effective ways to meet these targets?

## 4. Biennial progress report

- Progress to goal
- Revised implementation plan as market and technology evolve

# What Plug-In Equipment?

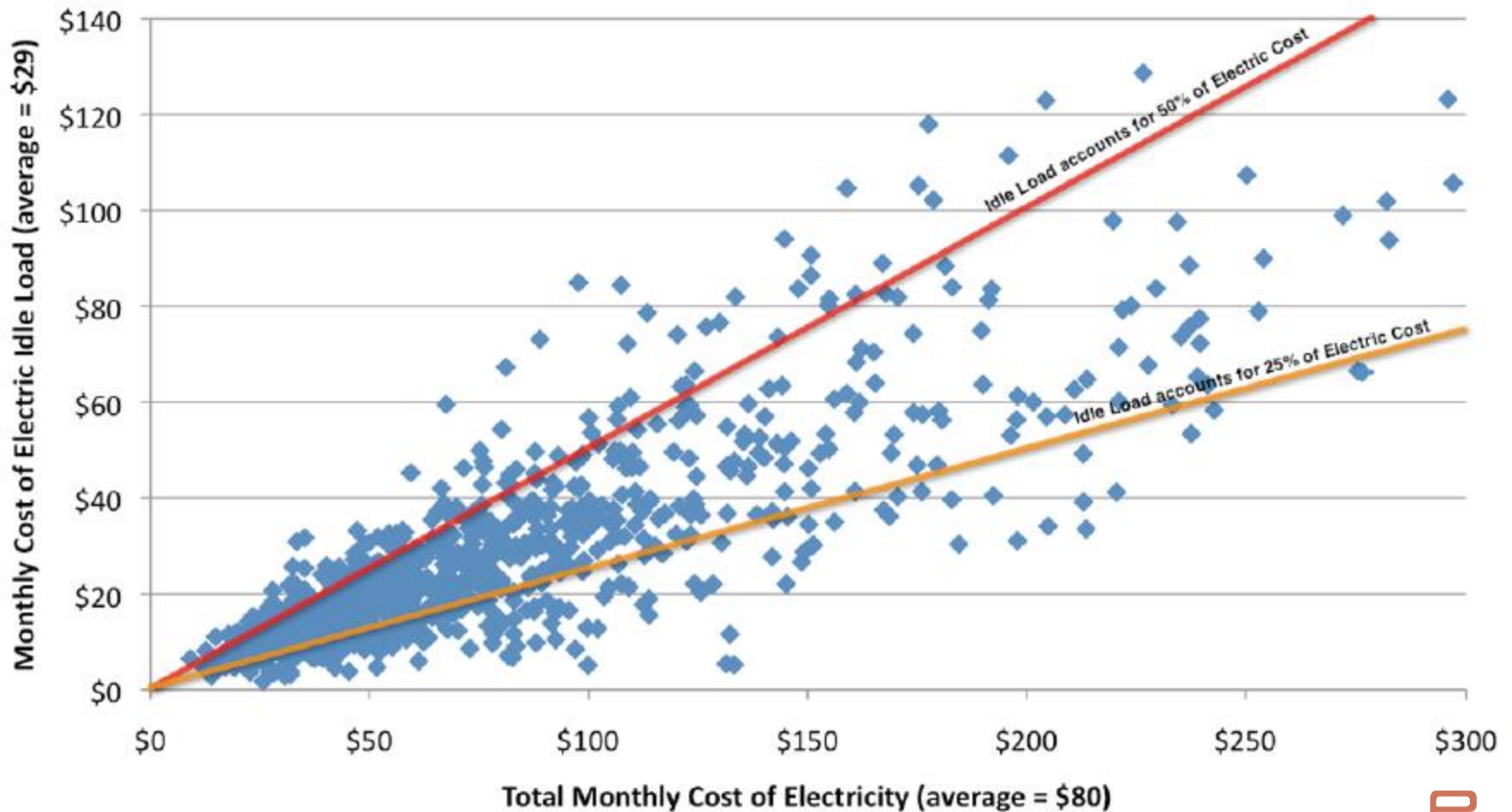
- ✓ All equipment brought into the building by the occupant, not covered by building code

Home Appliances	Electronics & IT	“Long tail” misc.
		

- ✗ Not including: hard-wired equipment, lighting, EVs, medical devices

# BASE LOADS AVERAGE 36% OF ELECTRIC BILL

## Monthly Idle Load Cost vs Monthly Total Electric Cost for Mountain View Homes (n=930)



# STANFORD ANALYSIS OF BULK PG&E DATA

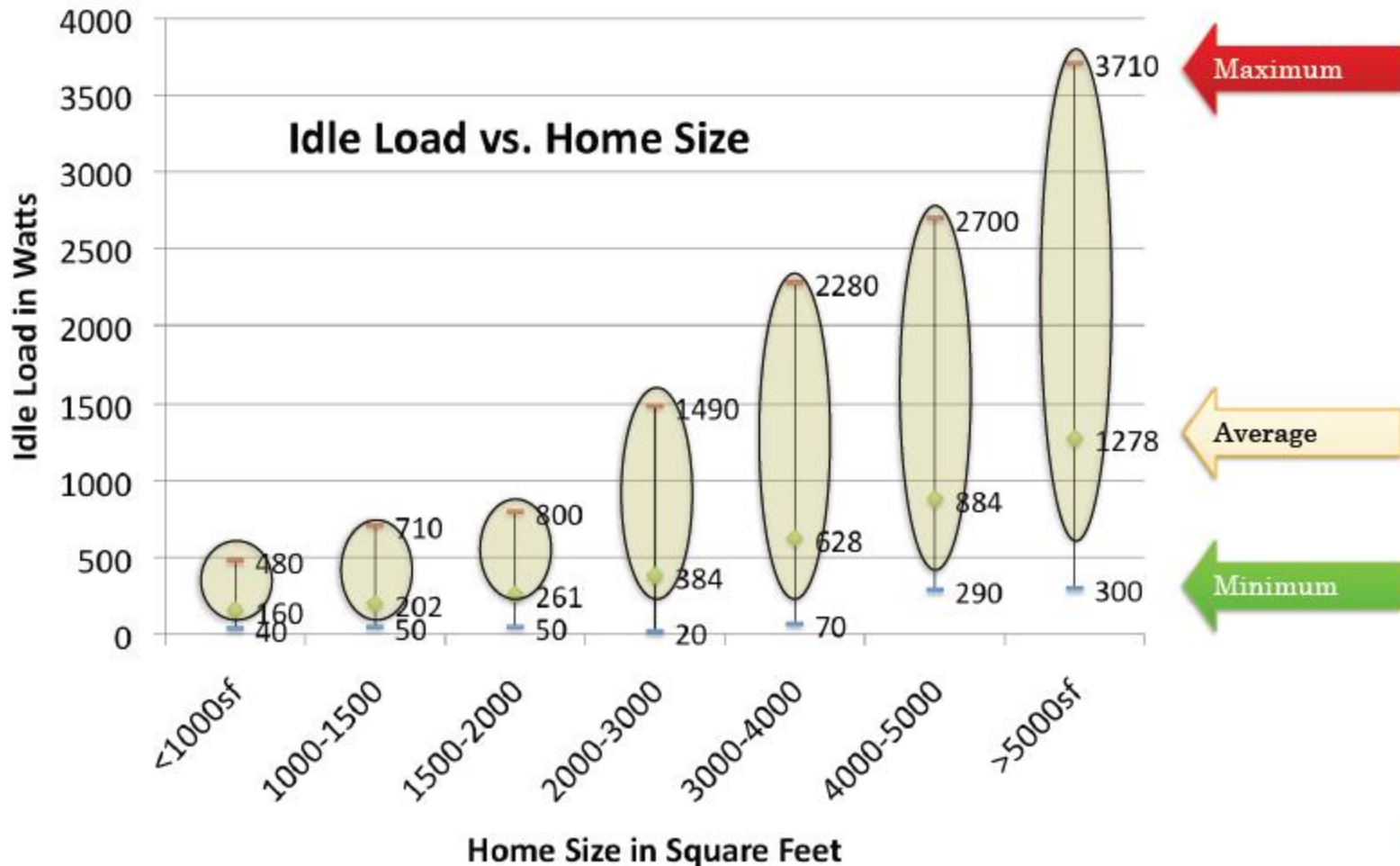


STANFORD  
UNIVERSITY

- \* Researcher: Ram Rajagopal
- \* 12 months of smart meter data from over **200,000** California Homes in 3 climate zones
- \* On average, electric base load = **36-43%** of total electric use
- \* Consistent across:  
Winter & Summer  
Fresno & San Francisco



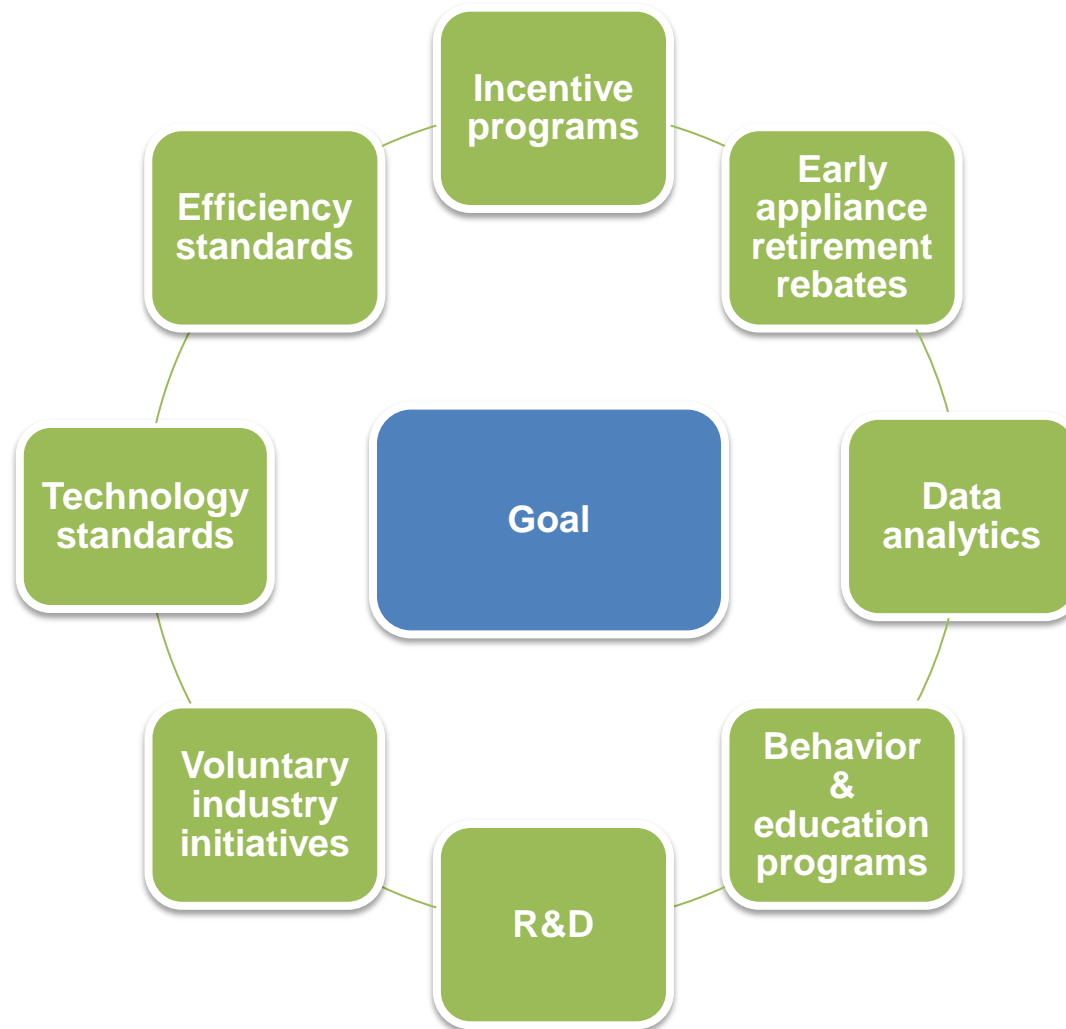
# BASE LOADS: LOTS OF VARIATION



**Lots of Low-hanging Fruit!**

# Performance-based goal gives flexibility to use all the tools in the toolkit

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# Why 25% (res.) and 40% (com.) targets?

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Targets set to 75% of difference between economic and market potential ⇒ Can be achieved entirely cost-effectively

Market and economic potential based on two primary studies:

- DOE Prioritization Tool 2012 (NREL)
- CPUC 2013 Potential & Goals study 2013 (Navigant)

This economic potential is conservative:

- Focused on select appliances, not exhaustive
- Does not account for future innovation and price reductions (learning curve)

# Closing

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## Bill timeline:



## Large environmental and economic benefits:

- 7 MT CO<sub>2</sub> annually
- \$2.5 billion bill savings annually

Thank you!