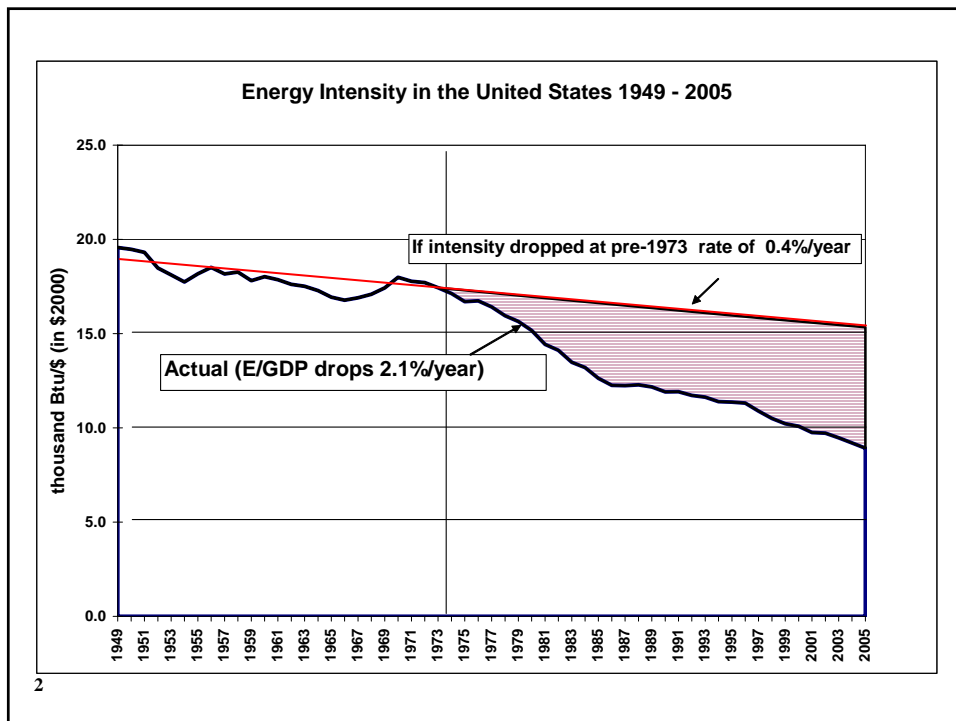


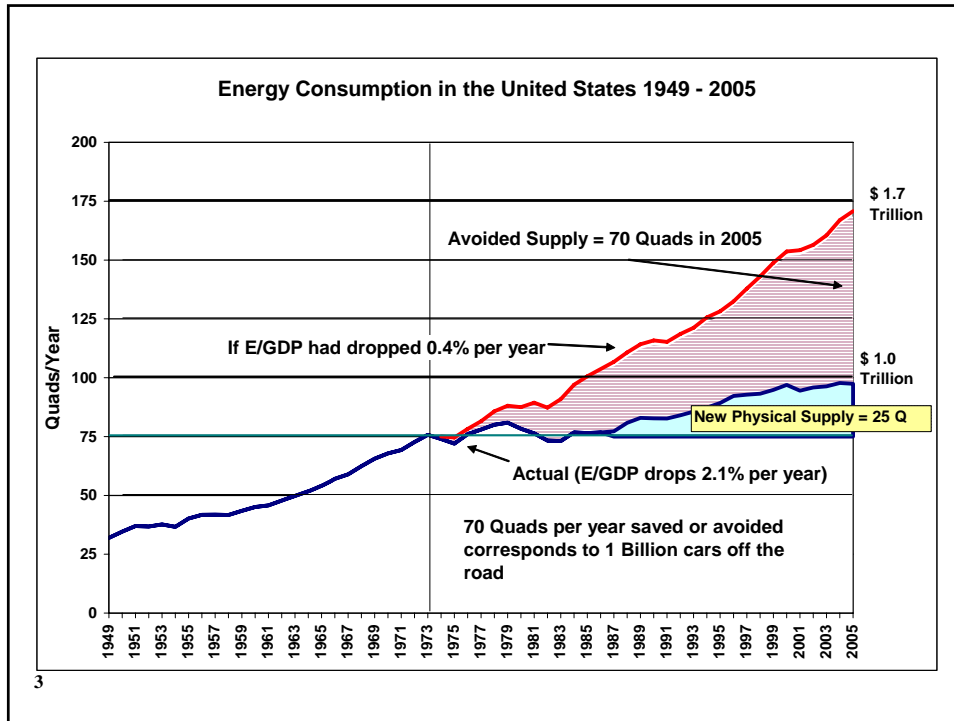
Energy Efficiency: US and California Success Stories

Alliance to Save Energy: Buildings Panel
Washington, DC
September 12, 2006

Arthur H. Rosenfeld, Commissioner
California Energy Commission
(916) 654-4930
ARosenfe@Energy.State.CA.US

<http://www.energy.ca.gov/commission/commissioners/rosenfeld.html>





How Much of The Savings Come from Efficiency?

- ◆ Easiest to tease out is cars
 - In the early 1970s, only 14 miles per gallons
 - Now about 21 miles per gallon
 - If still at 14 mpg, we'd consume **75 billion gallons more** and pay **\$225 Billion more** at 2006 prices
 - But we still pay **\$450 Billion per year**
 - If California wins the “Schwarzenegger-Pavley” suit, and it is implemented nationwide, we'll save **another \$150 Billion per year**
- ◆ Commercial Aviation improvements save another **\$50 Billion per year**
- ◆ Appliances and Buildings are more complex
 - We must sort out true efficiency gains vs. structural changes (from smokestack to service economy).

How Much of The Savings Come from Efficiency (cont'd)?

- ◆ Some examples of estimated savings in 2006 based on 1974 efficiencies minus 2006 efficiencies

	Billion \$
Space Heating	40
Air Conditioning	30
Refrigerators	15
Fluorescent Tube Lamps	5
Compact Fluorescent Lamps	5
Total	95

- ◆ Beginning in 2007 in California, reduction of “vampire” or stand-by losses
 - This will save \$10 Billion when finally implemented, nation-wide
- ◆ Out of a total **\$700 Billion**, a crude summary is that 1/3 is structural, 1/3 is transportation, and 1/3 is buildings and industry.

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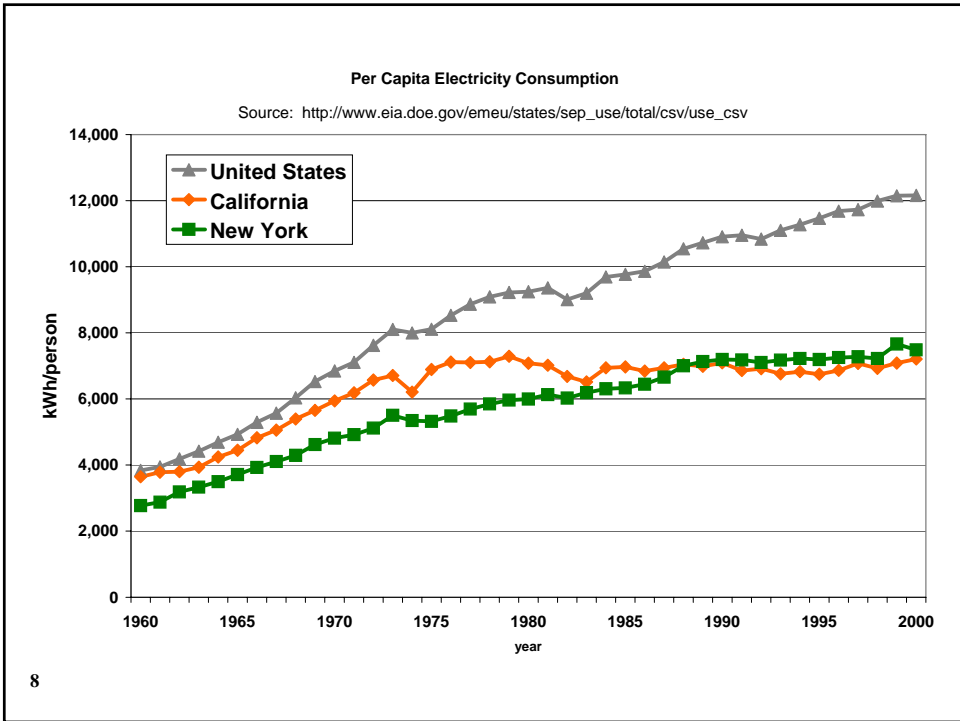
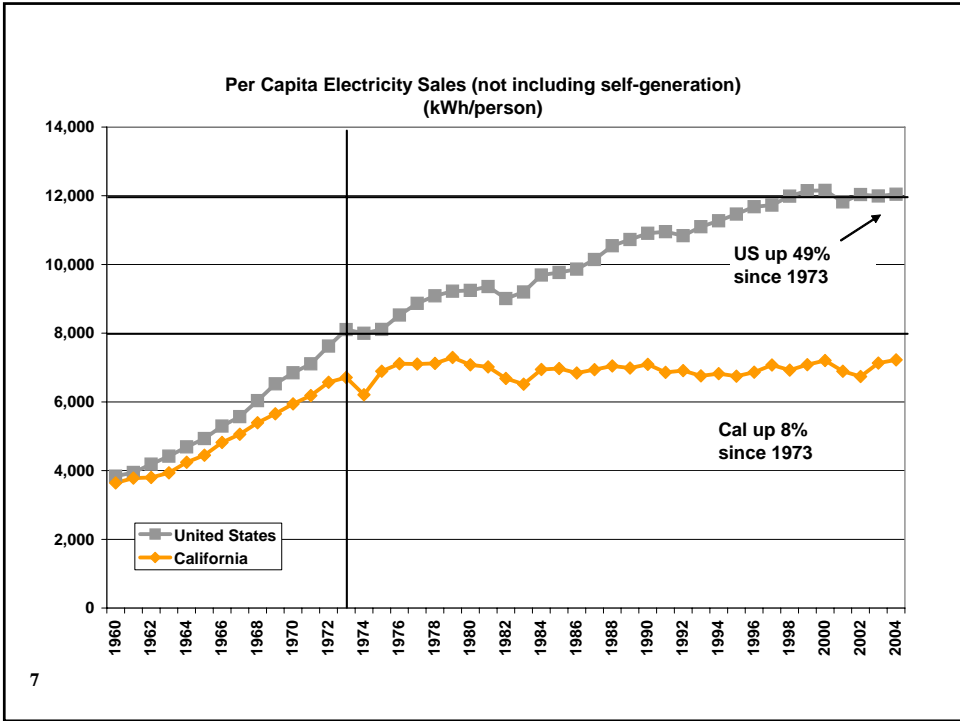
A supporting analysis on the topic of efficiency from Vice-President Dick Cheney

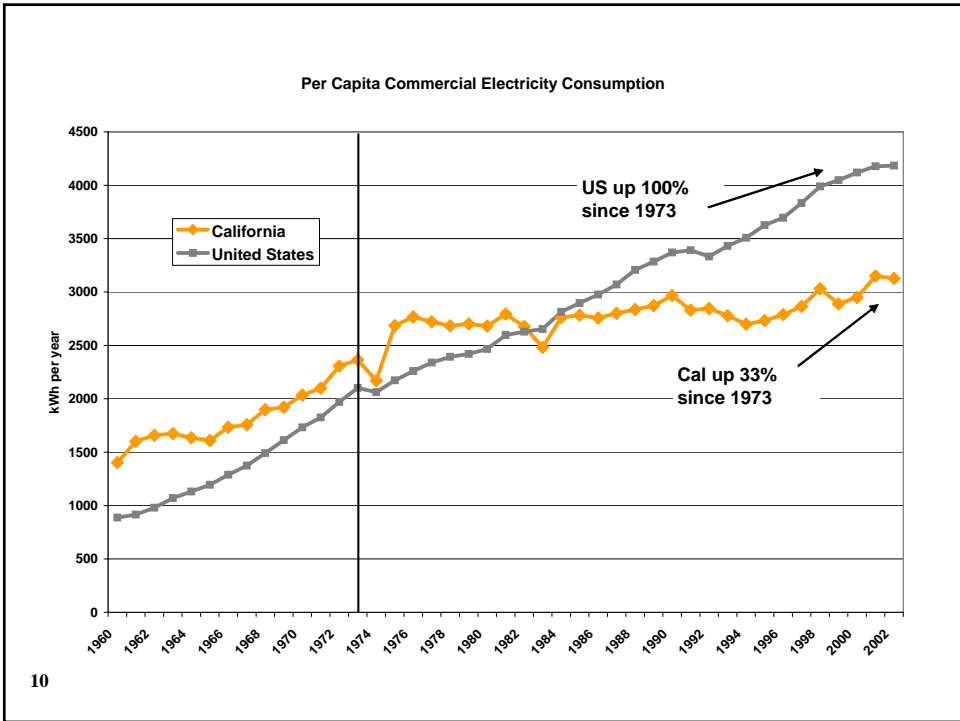
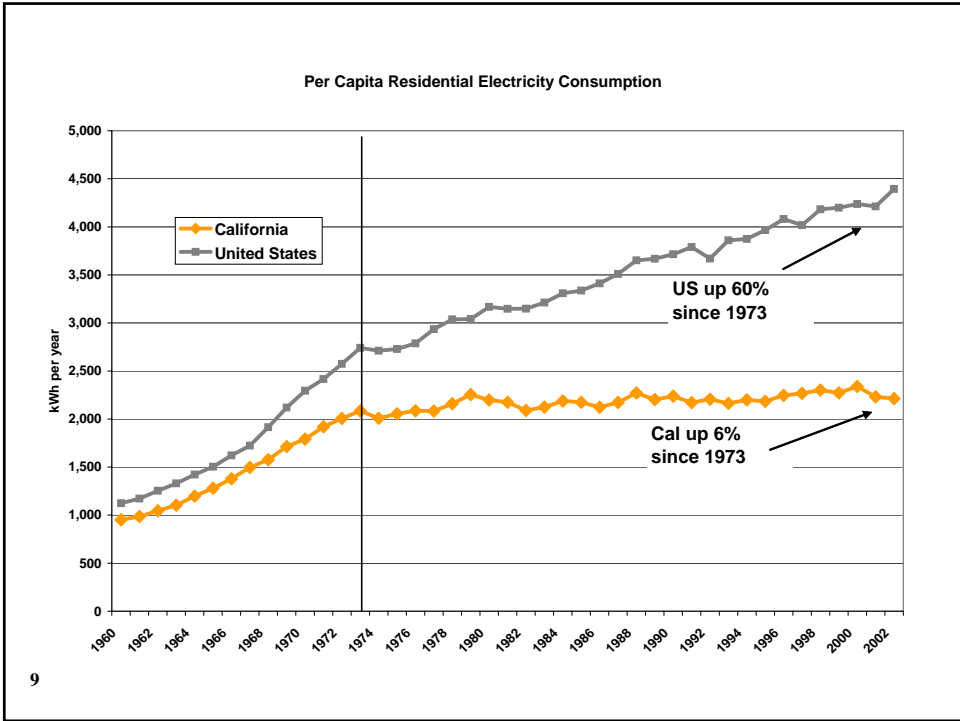
- ◆ “Had energy use kept pace with economic growth, the nation would have consumed 171 quadrillion British thermal units (Btus) last year instead of 99 quadrillion Btus”
- ◆ “About a third to a half of these savings resulted from shifts in the economy. The other half to two-thirds resulted from greater energy efficiency”

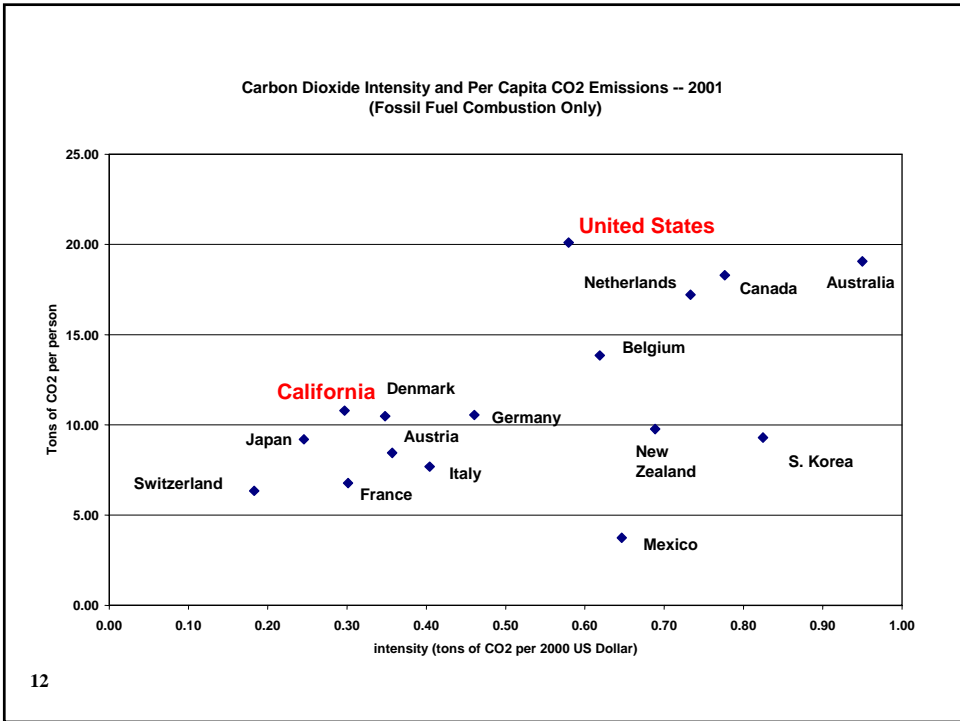
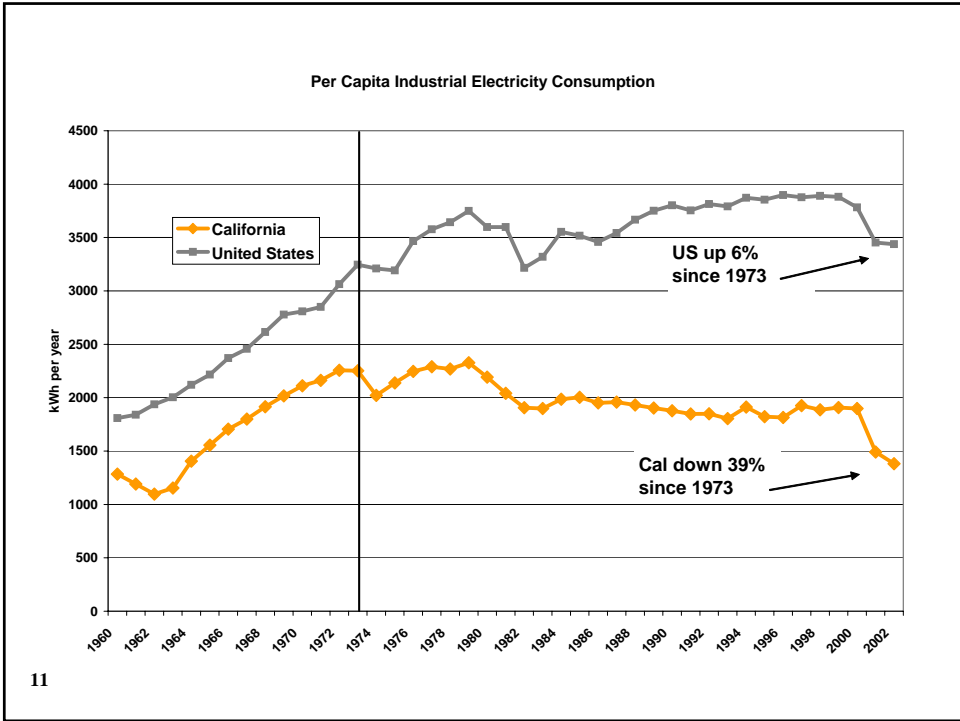
Source: National Energy Policy: Report of the National Energy Policy Development Group, Dick Cheney, et. al., page 1-4, May 2001

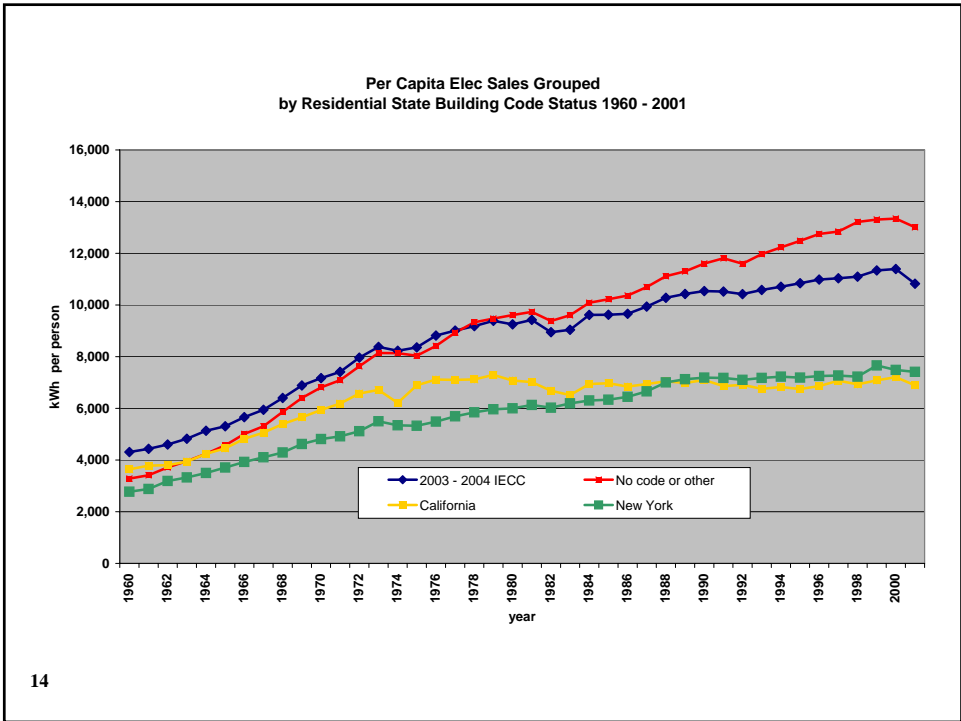
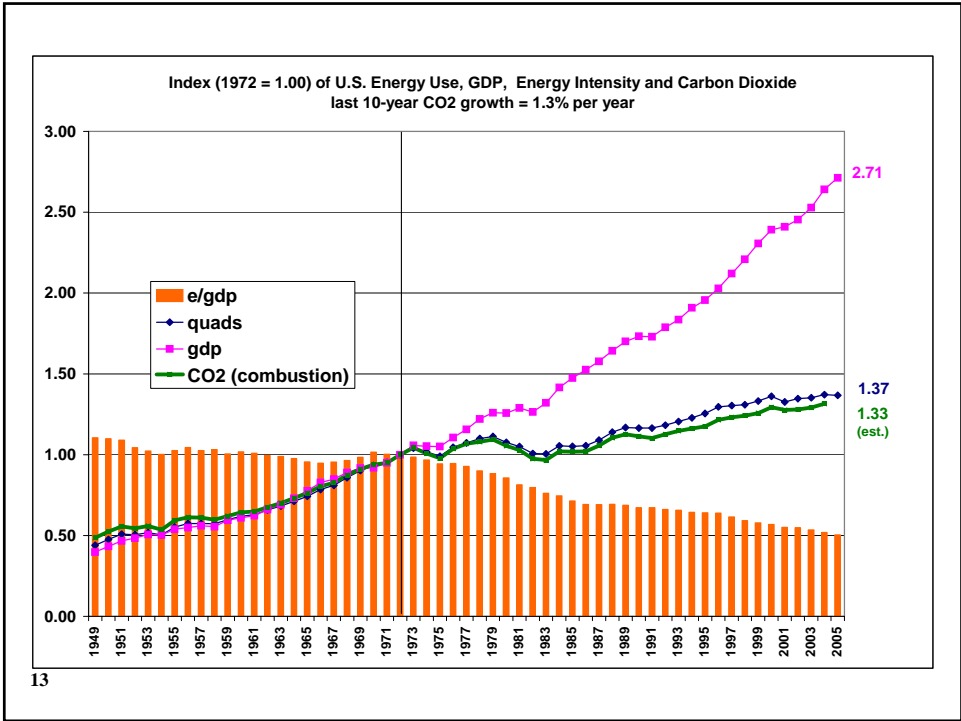
Cheney could have noted that 72 quads/year saved in the US alone, would fuel one Billion cars, compared to a world car count of only 600 Million

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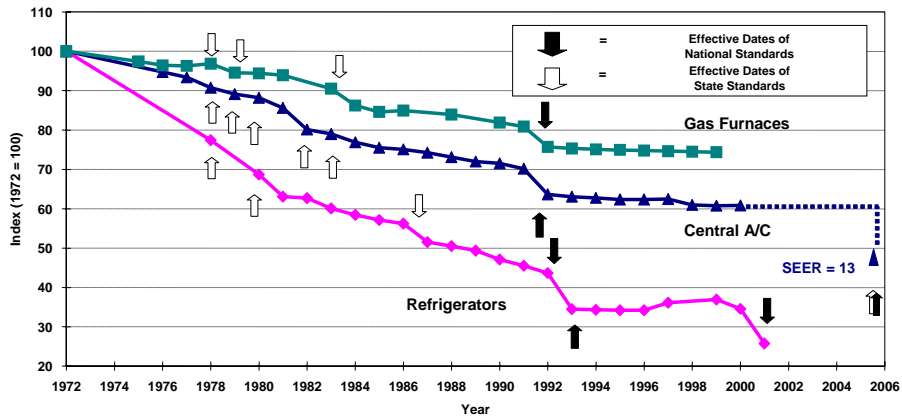








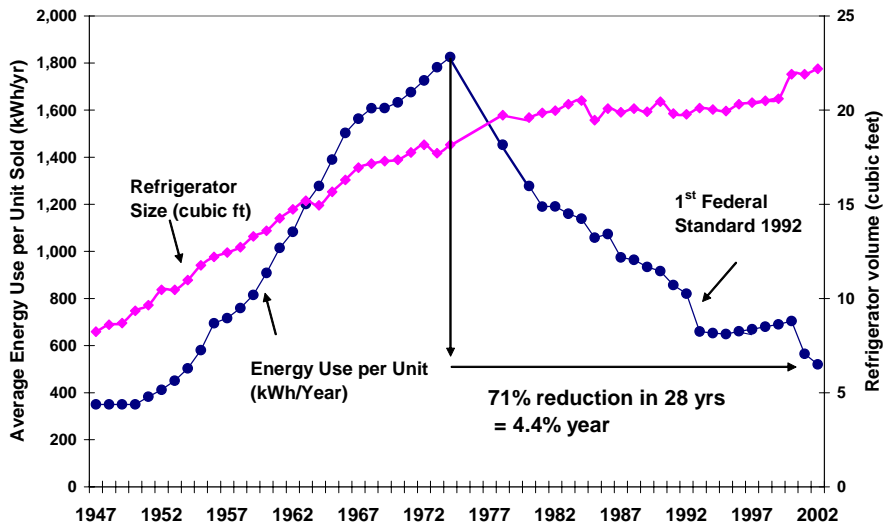
Impact of Standards on Efficiency of 3 Appliances



Source: S. Nadel, ACEEE,
in ECEEE 2003 Summer Study, www.eceee.org

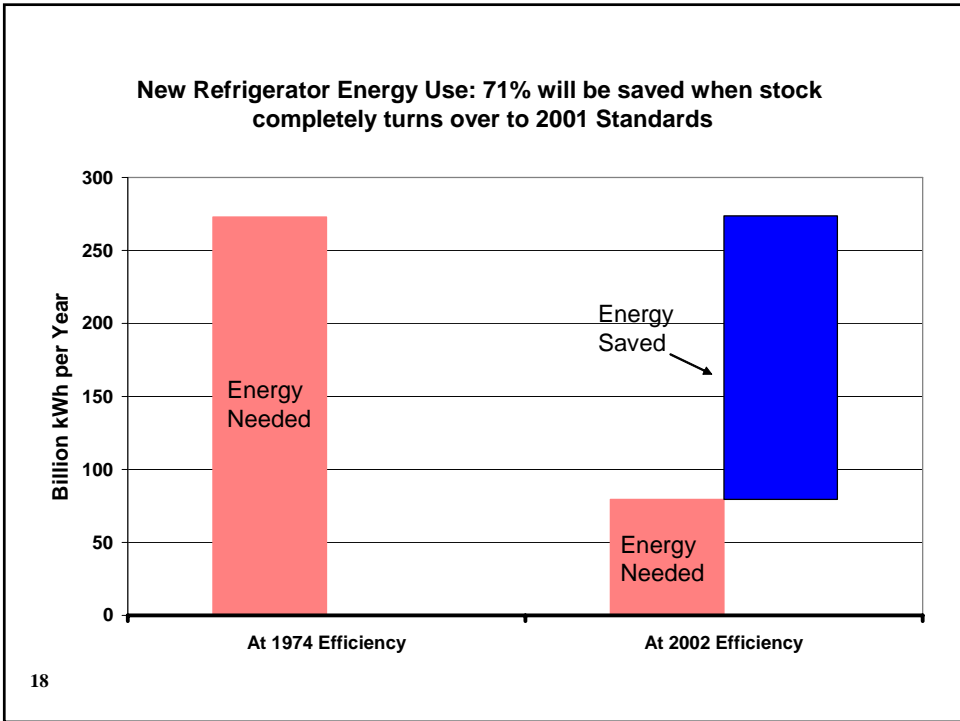
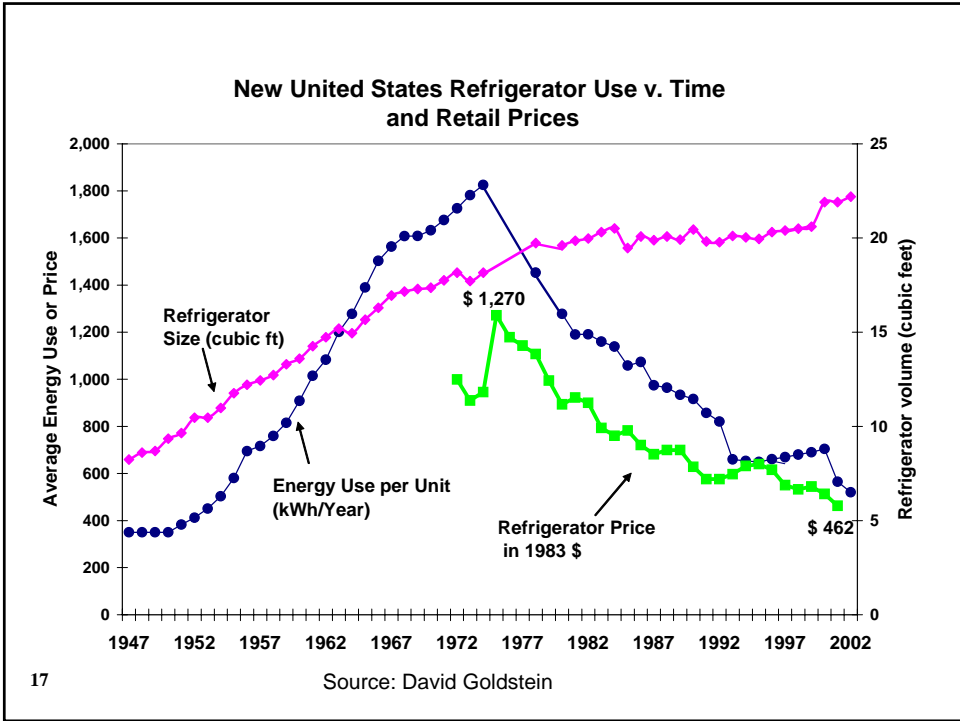
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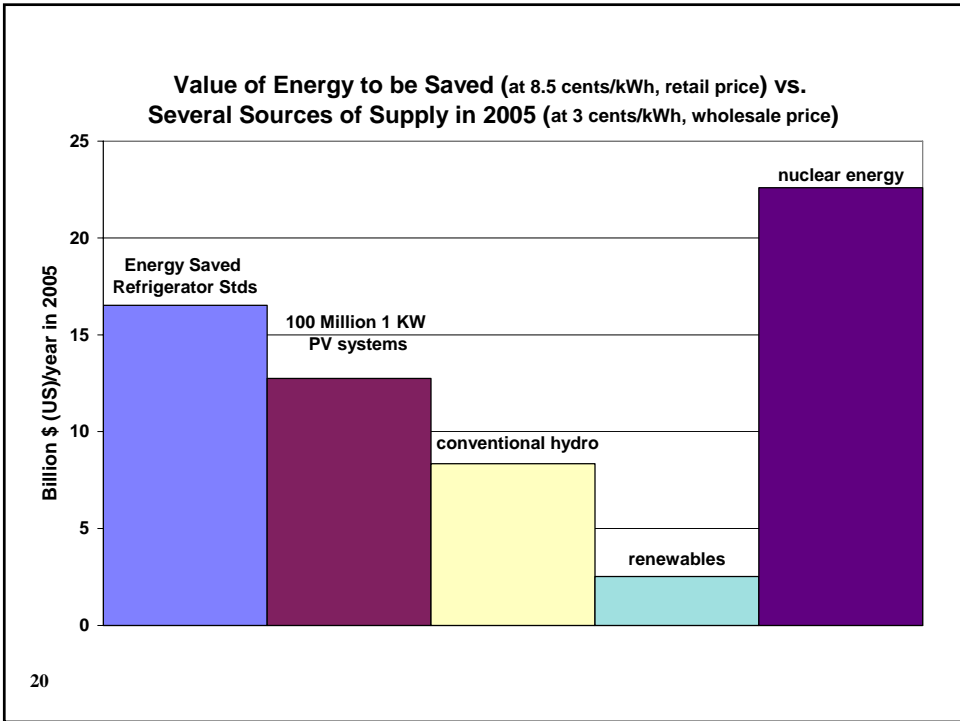
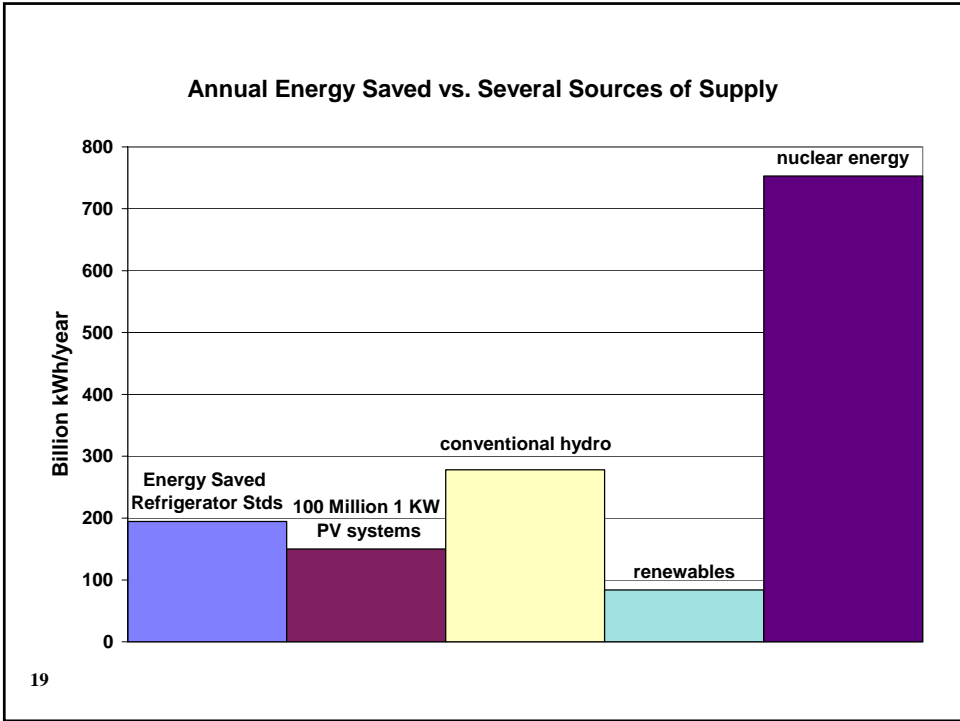
New United States Refrigerator Use v. Time



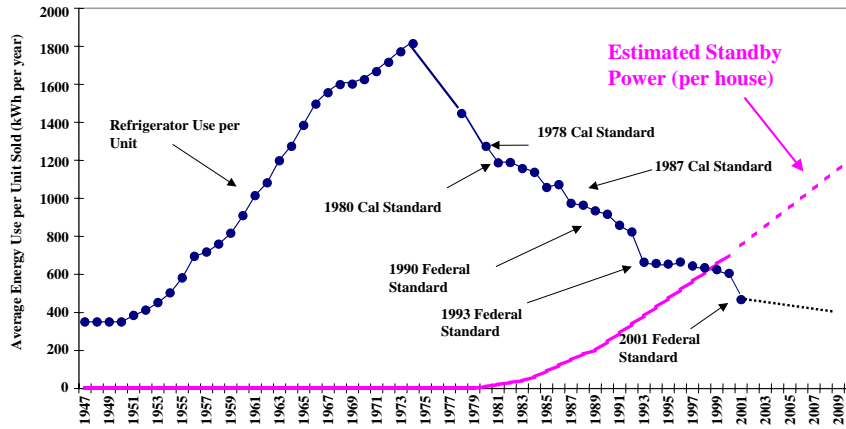
Source: David Goldstein

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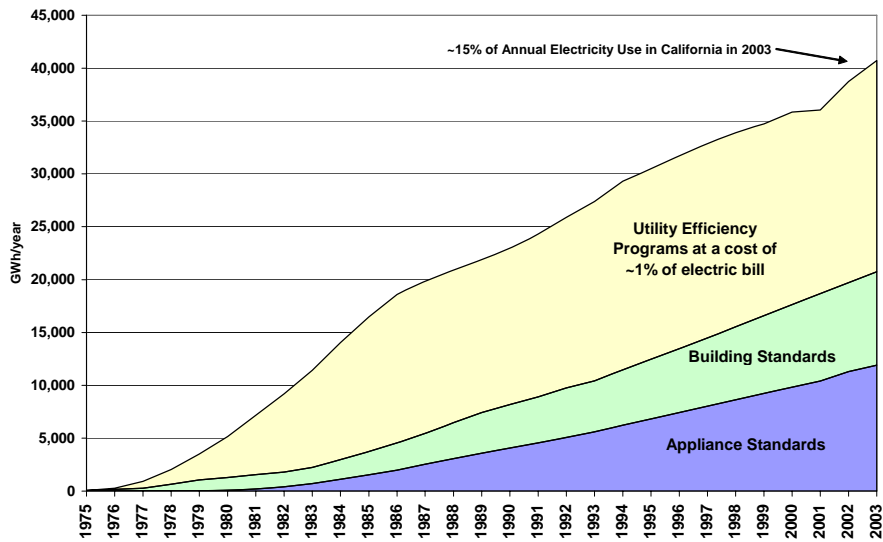


United States Refrigerator Use, repeated, to compare with Estimated Household Standby Use v. Time

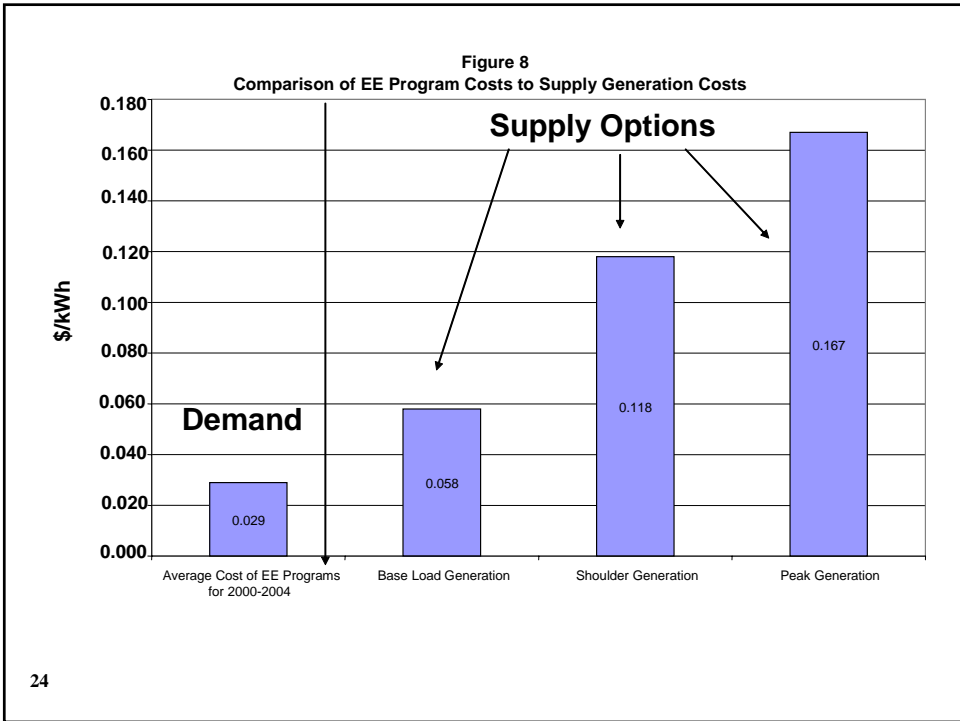
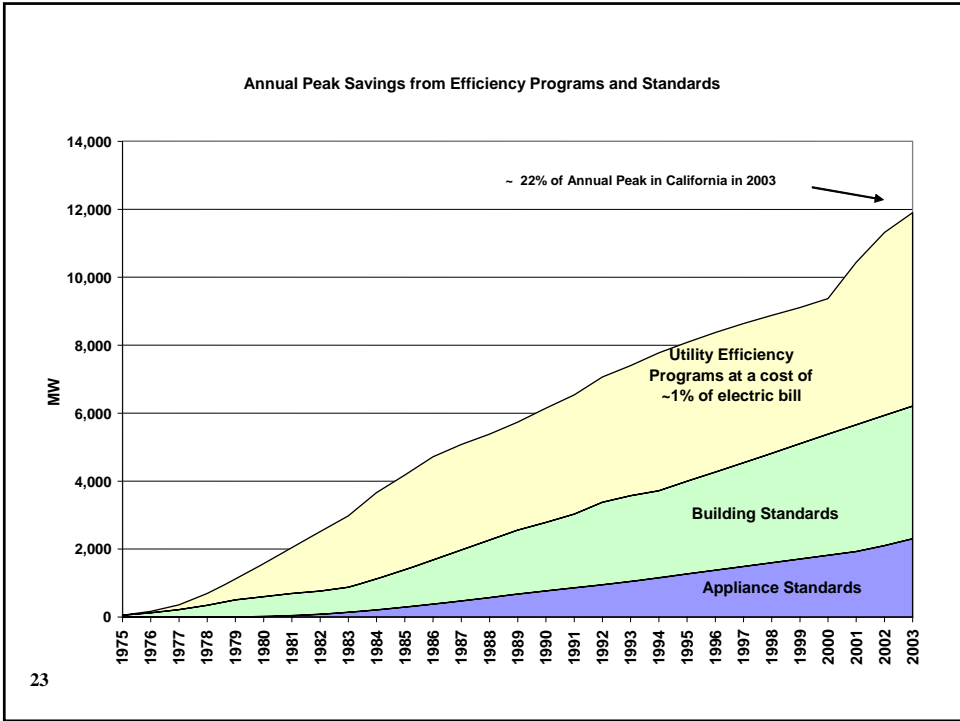


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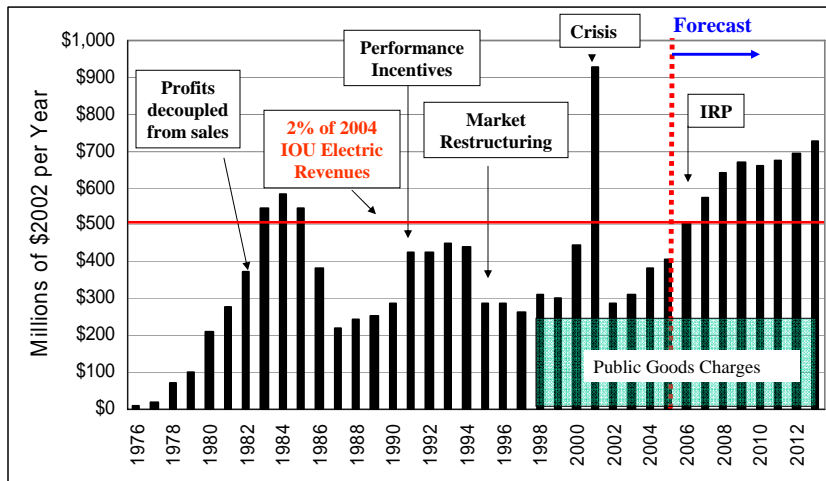
Annual Energy Savings from Efficiency Programs and Standards



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California IOU's Investment in Energy Efficiency



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Energy Action Plan

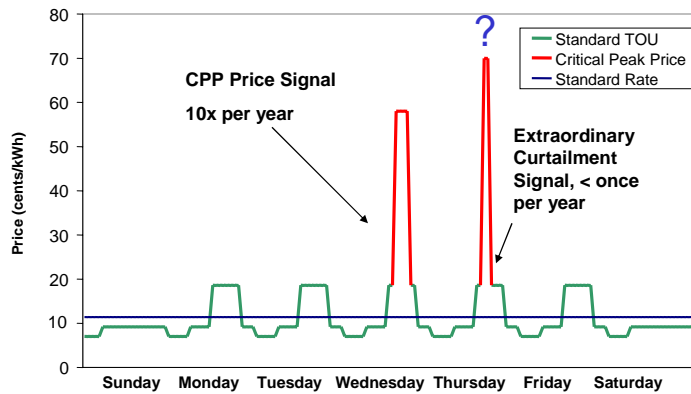
The Energy Action Plan is driven by the Loading Order contained in the multi-agency Energy Action Plan. Since its enactment in 2003, the Loading Order has been integrated into the major CPUC decisions governing energy policy and procurement. Energy resources are prioritized as follows:

- ◆ 1. Energy Efficiency/Demand Response
- ◆ 2. Renewable Generation, including renewable DG
- ◆ 3. Increased development of affordable & reliable conventional generation
- ◆ 4. Transmission expansion to support all of California's energy goals.

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Critical Peak Pricing (CPP) with additional curtailment option

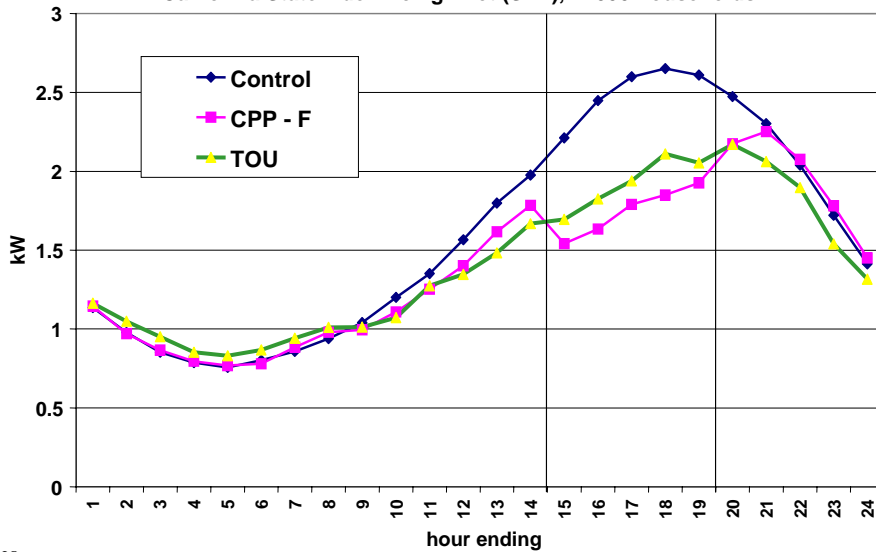
Potential Annual Customer Savings:
 10 afternoons x 4 hours x 1kw = 40 kWh at 70 cents/kWh = ~\$30/year



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Climate Zone 4 (Very Hot Areas) on CPP Days

California Statewide Pricing Pilot (SPP), ~2000 households



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Results of LBNL / PG&E Auto-CPP in 2003-2005

Company	Avg kW Savings	Avg % Savings	Max kW Saving	events (2003-4/2005)	Setup Cost
ACWD	52	20%	84	4 (0)	\$12,824
B of A	111	2%	227	3 (4)	\$1,614
Chabot	18	5%	46	3 (1)	\$4,510
50 Douglas	61	21%	85	4 (4)	\$2,000
2530 Arnold	61	16%	92	1 (3)	\$2,000
Echelon	78	25%	110	4 (3)	\$3,620
Gilead	71	10%	208	4 (1)	\$7,500
IKEA	219	12%	272	2 (0)	\$5,050
Oracle	45	10%	65	1 (0)	\$375
Target	33	10%	56	4 (1)	\$3,312
USPS	202	15%	265	0 (2)	\$12,000
Summary	951	13.4%			\$57.62 / kW *

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