

Observations on Mature Energy Efficiency Programs



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Overview

- Many states have introduced or reintroduced energy efficiency programs in recent years
 - 25 states have energy efficiency targets
- Some states have had vibrant energy efficiency programs for many years
 - California and Connecticut are two examples that will be examined here
 - New York's experience has been presented in other presentations for this conference

Current State of Energy Efficiency Programs

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Connecticut's Energy Situation

- Connecticut's electricity prices are among the highest in the nation
 - Natural gas costs generally set electricity prices
 - Usage per customer is lower than in most states
- Connecticut's market has been deregulated for about a decade
 - About 30% of residential and most commercial/industrial customers use alternative energy suppliers
- The New England ISO considers energy efficiency resources in its Forward Capacity Market
- Older generation plants are being replaced by newer, cleaner plants

Connecticut's Experience

- Connecticut initiated the Connecticut Energy Efficiency Fund in 1998
- Since 2000, Connecticut has generally been ranked as one of the top three states in the nation for energy efficiency
 - In 2010 its ACEEE scorecard rating dropped to 8th when the state diverted some of the energy efficiency funds to help balance the state budget
- The state's electric companies have been preparing joint plans since 2000
 - Natural gas companies have contributed to these plans since 2005
- Money from American Recovery and Reinvestment Act (ARRA, 2009) has been used to allow fuel oil and propane customers to participate in programs with a \$75 co-pay

Connecticut's Accomplishments

- Since 1998, Connecticut's energy efficiency programs have delivered critical peak demand reductions and energy savings equivalent to the generating capacity of a 595 MW power plant
- In 2009, CEEF program activities resulted in 2.6 billion kilowatt-hour lifetime savings. This is the equivalent of:
 - Providing electricity to more than 313 thousand homes for one year
 - Reducing energy costs by \$533 million over the life of the measures
 - Avoiding the emissions of 1.9 million tons of carbon dioxide
- Connecticut claims that for every \$1 spent on electric efficiency, it receives electric system benefits of more than \$4 and the same claim can be made for the natural gas system

California's Energy Situation

- California is one of the world's largest consumer of energy and gasoline
- Since 1974, successive administrations have enacted more than 100 laws to assist in implementing state energy policy
- Attempts to introduce market restructuring ran into highly publicized problems
- California has been at the forefront of energy efficiency implementation
 - Since 2000 there has been renewed emphasis on energy and peak demand savings
 - It has been ranked #1 in the ACEEE scorecard for four years in a row
- California has placed emphasis on developing a sustainable, competitive market for energy efficient products and services

California's Experience

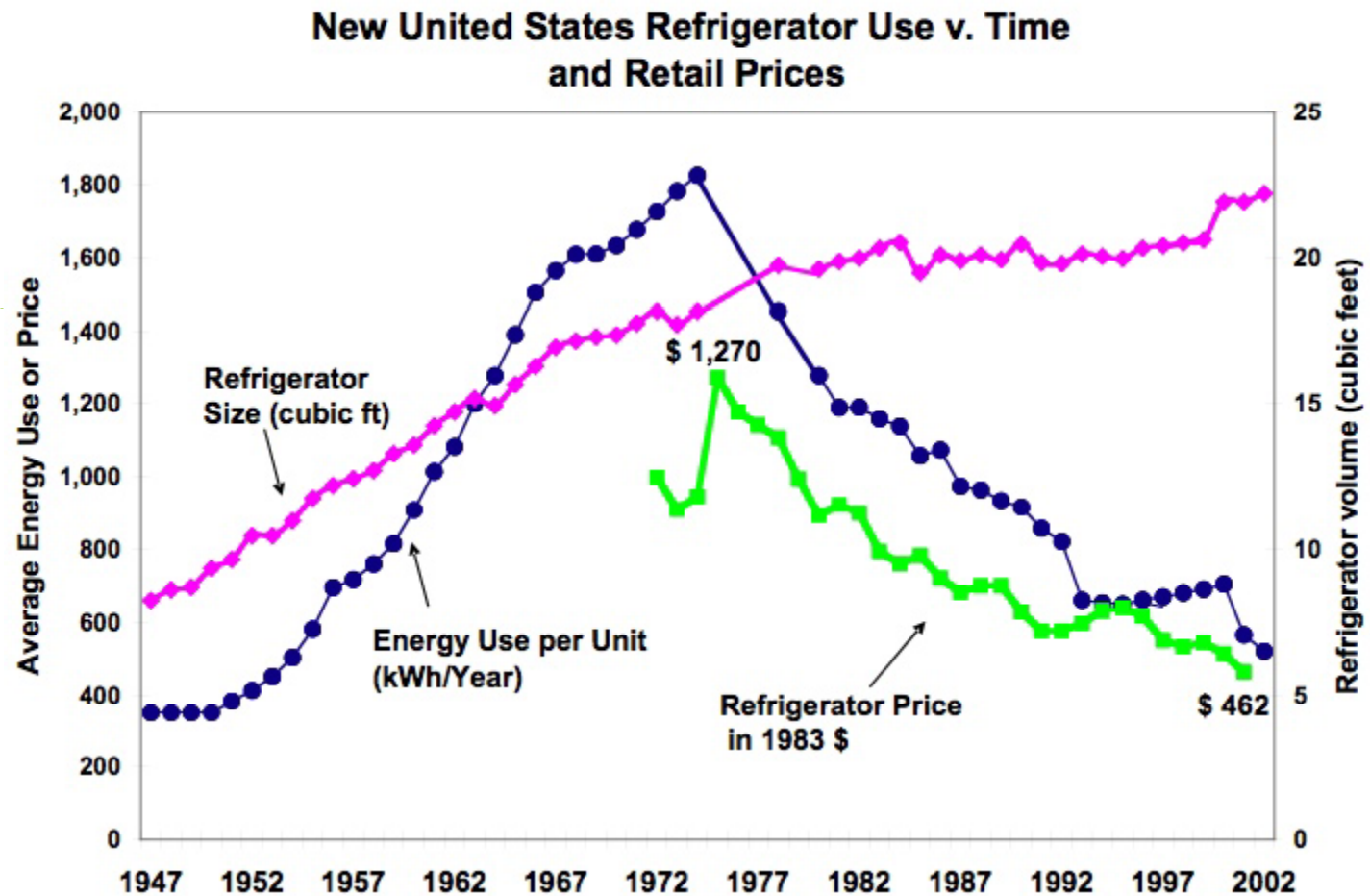
- Since the 1970's the California PUC has overseen the funding and design of energy efficiency programs
 - Funding for energy efficiency comes from electricity consumption surcharge on customer bills
- In 1974, the California Legislature created the California Energy Commission, the State's principal energy policy and planning organization
 - As part of its mission it promotes energy efficiency and conservation by setting state appliance and building efficiency standards
 - Supports public interest energy research
- Expenditures for California's energy efficiency programs rose to \$400 million in 1993 and 1994, declined in the late 1990's, and began increasing again starting in 2000.
 - In 2009, CPUC approved \$3.1 billion in expenditures for the 2010-2012 program cycle

California's Accomplishments

- In 2007, planning began on the Big, Bold Energy Efficiency Initiative
 - Resulting Strategic Plan expected to save an estimated 2,056 MW, avoiding the need for four new 500 MW power plants
 - In September 2010 the CPUC launched 2010-2012 Zero Net Energy Action Plan with goal of transforming the state's commercial buildings "into clean energy powered, energy-efficient structures by 2030."
- California's efforts have led to market transformation, including more efficient appliances nationwide
- State policy that energy efficiency is the preferred means for meeting new load needs

Market Transformation Impacts

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Source: David Goldstein

Observations on Mature Energy Efficiency Programs

- Energy efficiency programs can save billions for consumers
- Energy building codes and appliance standards are the most cost effective method for reducing energy usage and have the largest potential for producing large energy savings
- Existing and proposed U.S. appliance standards could saving 6.1 quads a year in 2030 – roughly enough to meet energy needs of a quarter of US households

Observations on Mature Energy Efficiency Programs (continued)

- Customer outreach and education is a critical part of an energy efficiency programs
- Over time, utilities and customers get used to energy efficiency concepts that were once considered bold
- Market transformation has more long term impacts than rebate-only programs
- Training programs for those offering energy efficiency services are important

Observations on Mature Energy Efficiency Programs (continued)

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- Energy efficiency is much more cost effective than building new generation
 - ACEEE estimates an average cost of 2.5 cents per kwh saved vs. 8 to 14 cents per kwh for new generating stations
- Providing utilities incentives for participating in energy efficiency programs helps secure their participation
- Having an explicit policy that energy efficiency is the preferred method of meeting energy needs affects planning

Observations on Mature Energy Programs (continued)

- Having a stable funding source is critical
- It is important to develop a mechanism for funding programs for all types of heating fuel
- New products that significantly raise electricity usage are always being introduced; gas applications are more limited
- Even with aggressive energy efficiency programs, there is always more that can be done

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