

Overview of OCC & ECMB Energy Efficiency, The Cost-Effective Solution to Climate Changes & High Energy Bills

SIPRAC

CT Department of Environmental Protection

July 12, 2007

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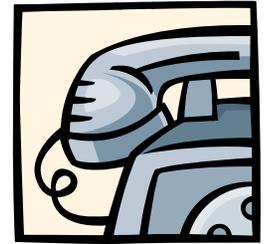


What Is the OCC?

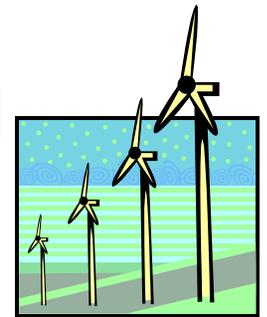
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- Mary J. Healey, Consumer Counsel
- 10 Franklin Square
- New Britain, CT 06051
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- <http://www.ct.gov/occ/site/default.asp>
- OCC: Member of ECMB, CEAB, NEPOOL, CEAC, CERC



THE OCC MISSION



- OCC is an independent state agency with statutory responsibility to represent customers of Connecticut's five regulated utilities – electric, gas, water, telephone, and cable television, primarily in matters before the Department of Public Utility Control (DPUC) (and also at FERC).



OCC Employees

- 1 Consumer Counsel
- 6 Lawyers
- 5 Finance and Accounting
- 4 Administrative Support
- 0 Obstructionists



The Energy Conservation Management Board





The Mission of the Energy Conservation Management Board is to advise and assist the utility distribution companies in the development and implementation of comprehensive and cost-effective energy conservation and market transformation plans. (as per Sec 33(d), PA 98-28, An Act Concerning Utility Restructuring)



Connecticut Energy Efficiency Fund

- CEEF was created by the Legislature in 1998 to Advise and Assist on Utility Plans
- Changed in 2005 to add gas & municipal utilities
- It provides cost-effective energy efficiency & load management programs through a \$0.003/kWh surcharge on bills
- It is a ratepayer fund administered by the electric distribution utilities (CL&P and UI)
- In 2007, ~\$95M is available in funding
- The Department of Public Utility Control (DPUC) is responsible for approval of the programs

Background

- The Connecticut Energy Efficiency Fund (CEEF) was created by the State Legislature in 1998
- It provides cost-effective energy efficiency programs through a small surcharge
- A ratepayer fund administered by the electric distribution utilities (CL&P and UI)
- The CEEF Board was created by the Legislature to advise and assist on utility plans
- Department of Public Utility Control (DPUC) is responsible for approval of the C&LM programs

Programs for All (17+ !)

- Residential
- Large Commercial & Industrial
- Small Commercial & Industrial
- Municipalities
- Low Income
- Education
- Over 85% of the funds go to actual programs!

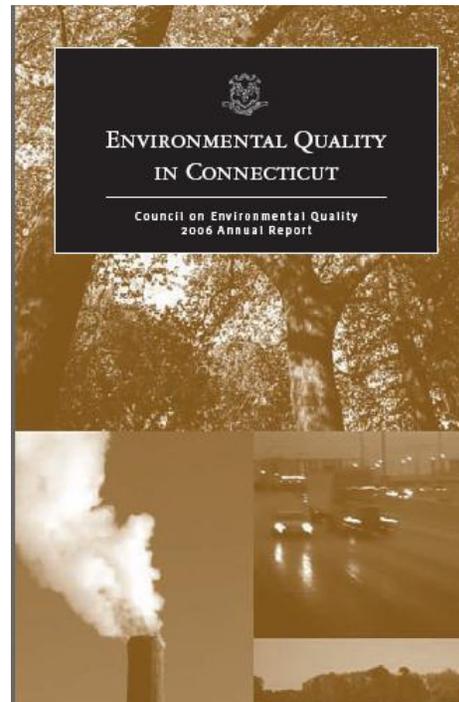
C&LM Expenditures and Benefits

- ~\$95 million/yr currently collected
- Has ranged from about \$89 million (2000-01) to about \$60- \$70 million in recent years
- 60+ MW of energy efficiency resources has been provided in a fully funded year
- Reduces annual load growth by 50-80%
- Energy efficiency is the least cost resource ~ \$.02 to \$.09 per lifetime kWh, delivered
- **Provides ~\$4 in benefits for every \$1 invested**

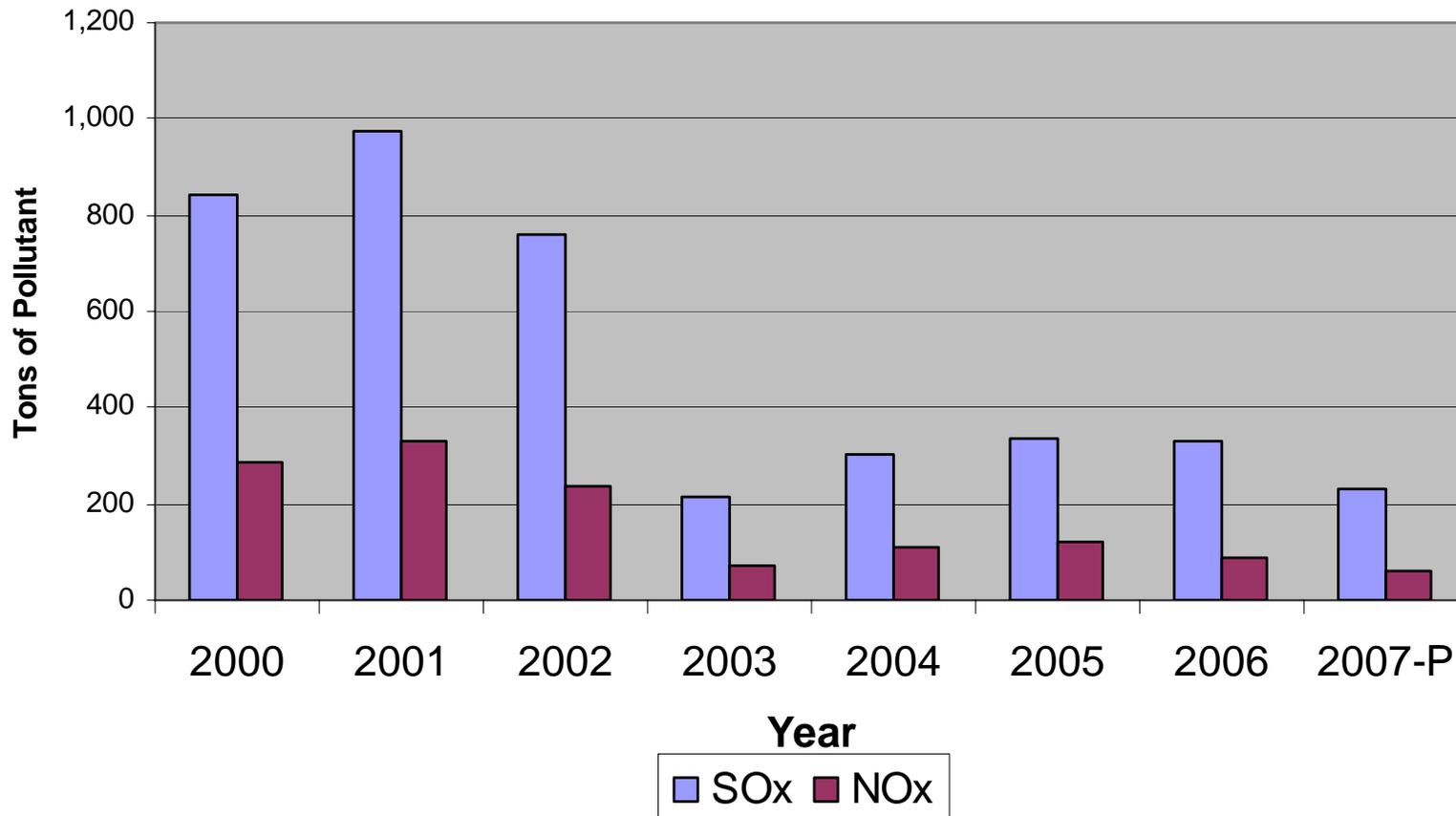
Environmental Improvement Has Been a **Primary** ECMB Goal

“Connecticut reduced air pollution even as the state gained people, traffic and power plants Progress came at considerable expense, but the largest costs fell on consumers and private companies rather than on the public purse. There is only a small chance, however, that Connecticut will be able to meet the 2010 federal deadline for keeping ground-level ozone at healthful levels for nearly an entire summer.”

Page 3. CT CEQ 2006 Annual Report

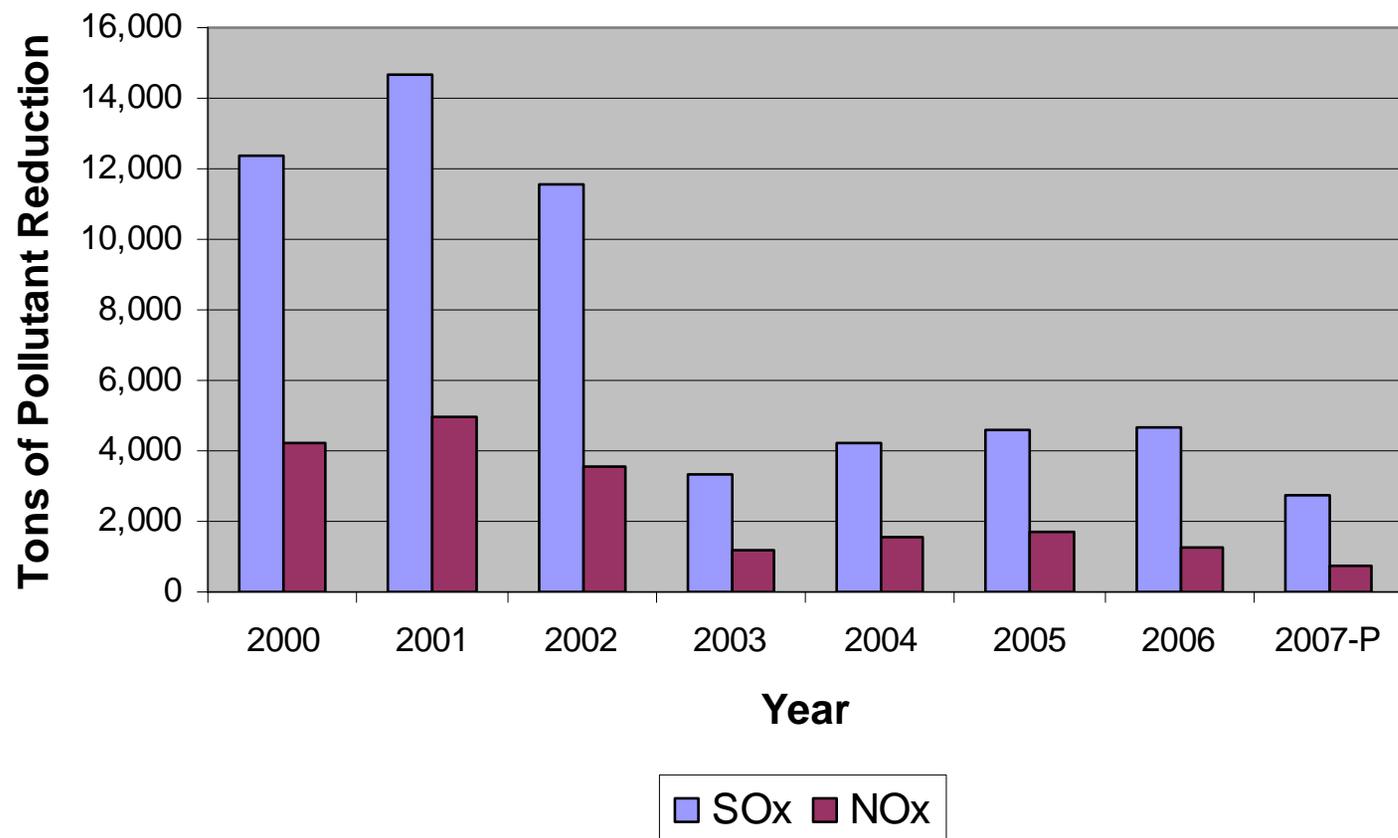


SOx and NOx Annual Energy Efficiency Reductions



P connotes projected figures.

SOx and NOx Lifetime Energy efficiency Reductions



P connotes projected figures.



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



Climate Change 2007: The Physical Science Basis

Summary for Policymakers

Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change

This Summary for Policymakers was formally approved at the 10th Session of Working Group I of the IPCC, Paris, February 2007.

Note:

Text, tables and figures given here are final but subject to checking and copy-editing and editorial adjustments to figures.

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“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level.”

Page 4, IPCC Fourth Assessment Report



Energy Efficiency is What Has Been Termed a “No Regrets” Strategy for Climate Change

A strategy in response to the threat of climate change which argues that energy-saving measures should be undertaken immediately to help reduce global warming and climate change. Even if the threat of climate change is not as pronounced as we now fear, the supporters of this strategy say would not need to be any regrets because we would have benefited from saving the energy.

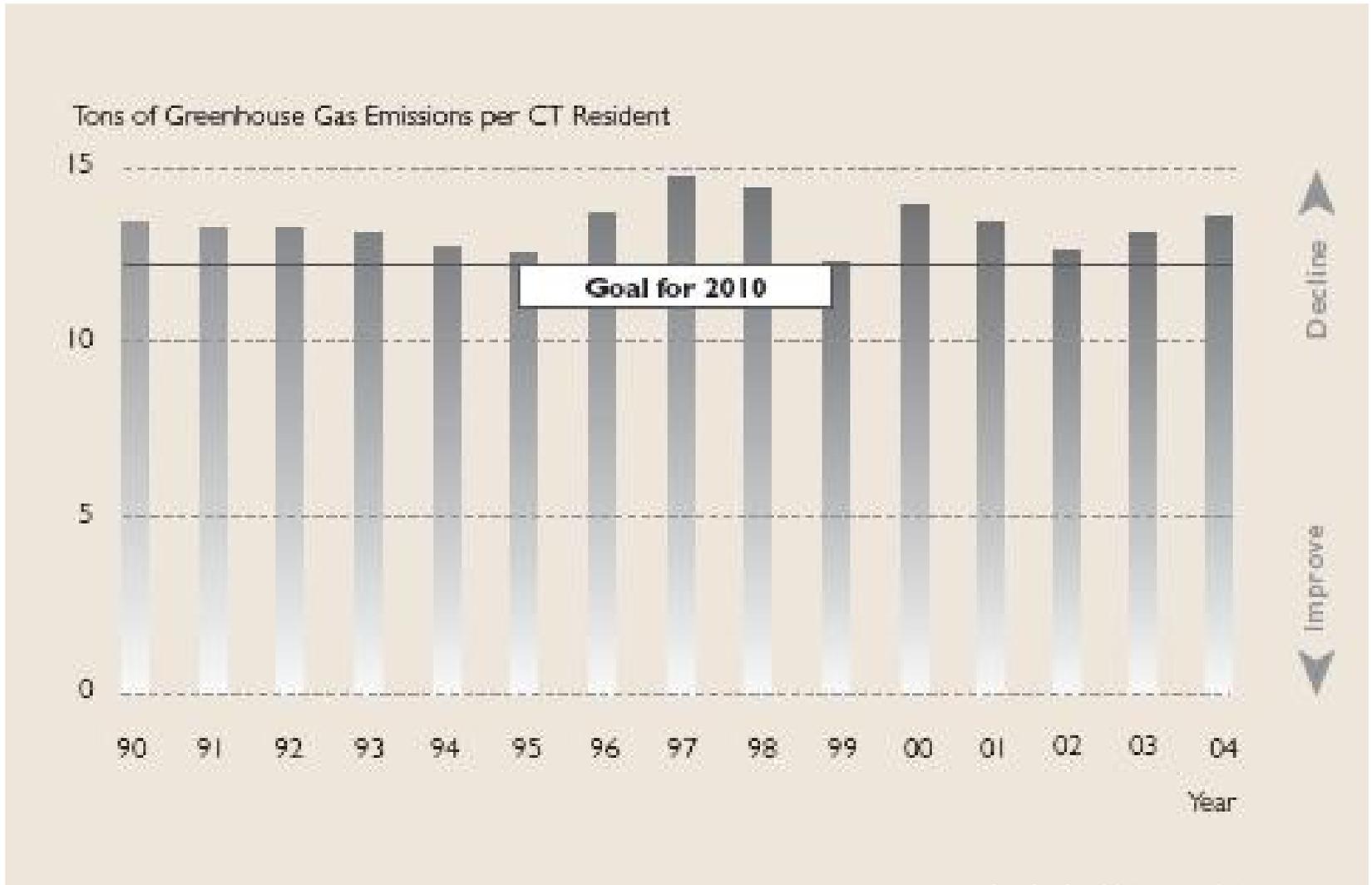
http://www.babylon.com/definition/No_Regrets_Strategy/English

Some “Co-Benefits” Include

- **Reduction of Criteria Pollutants (SO_x, NO_x)**
- **Reduction of peak loads**
- **Reduction of Energy Cost**
- **Reduction of Foreign Sources of Energy**
- **Enhanced Grid Resilience**
- **Greater Employment Opportunities**
- **Provides a Competitive Edge via Productivity Gains**

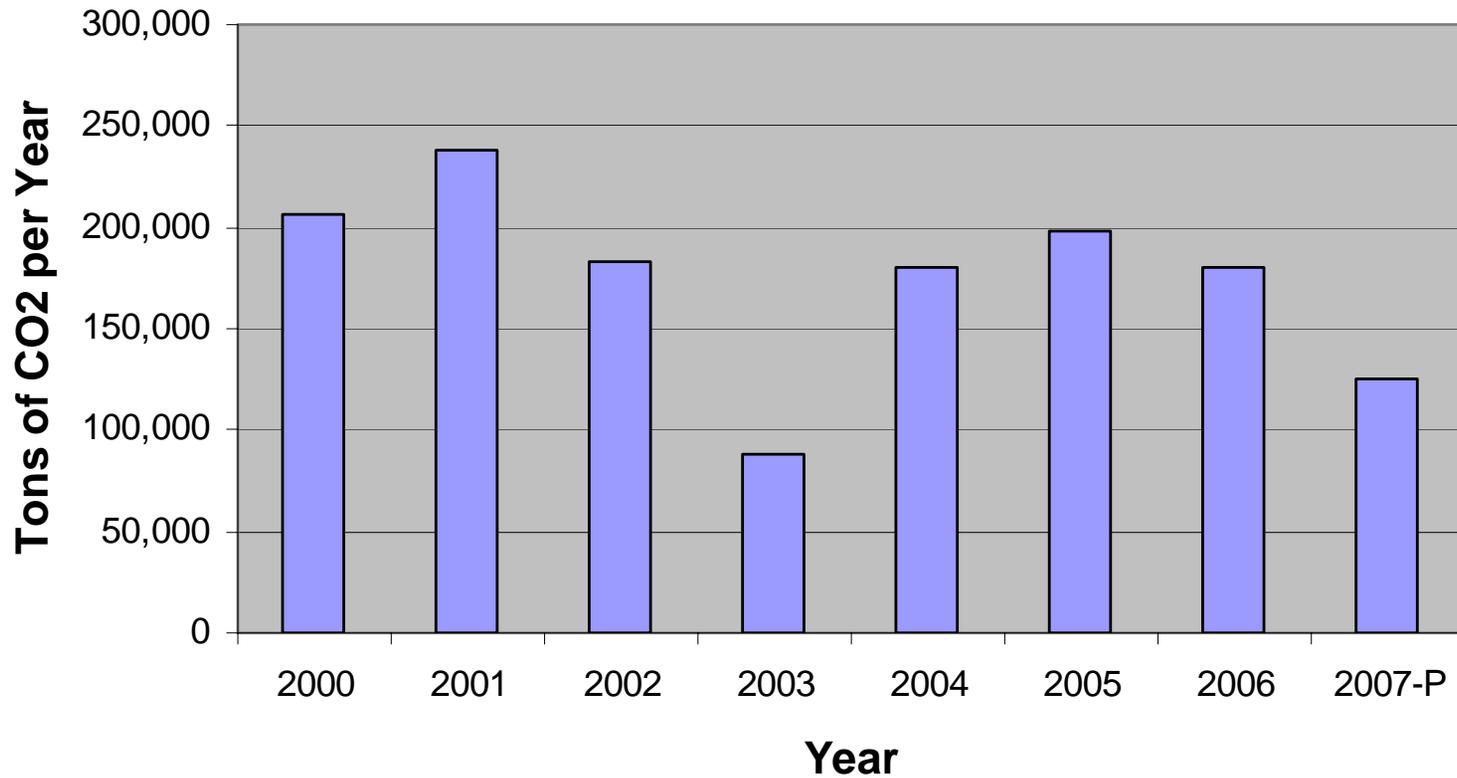
Climate Watch

Connecticut has set ambitious goals to reduce emissions of “greenhouse gases,” primarily carbon dioxide, that trap heat in the earth’s atmosphere and alter global climate. Growing energy consumption threatens to undermine the state’s efforts to reach its goal.



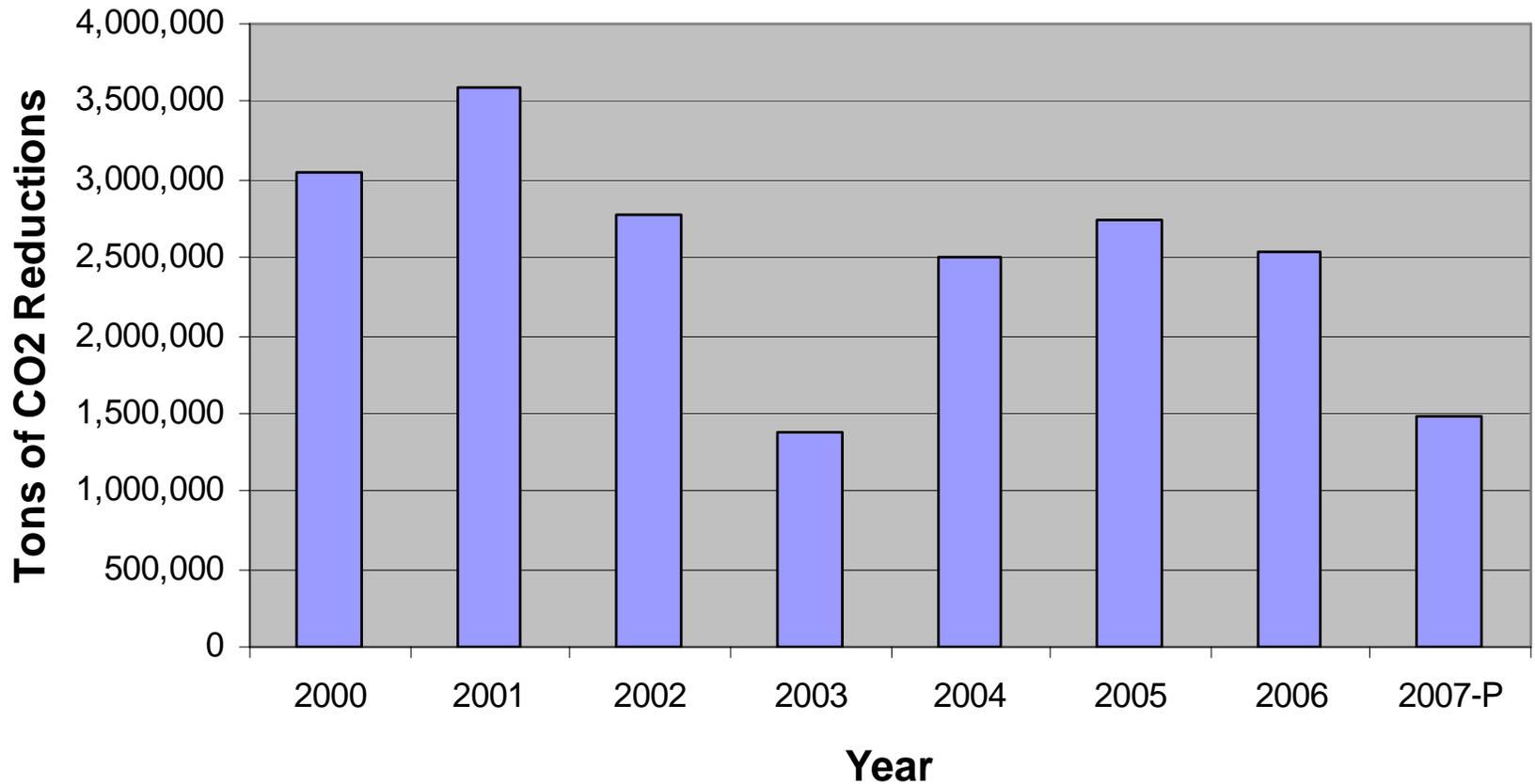
CT CEQ 2006 Annual Report. Page 29.

CO2 Annual Energy Efficiency Reductions



P connotes projected figures.

CO2 Lifetime Energy Efficiency reductions



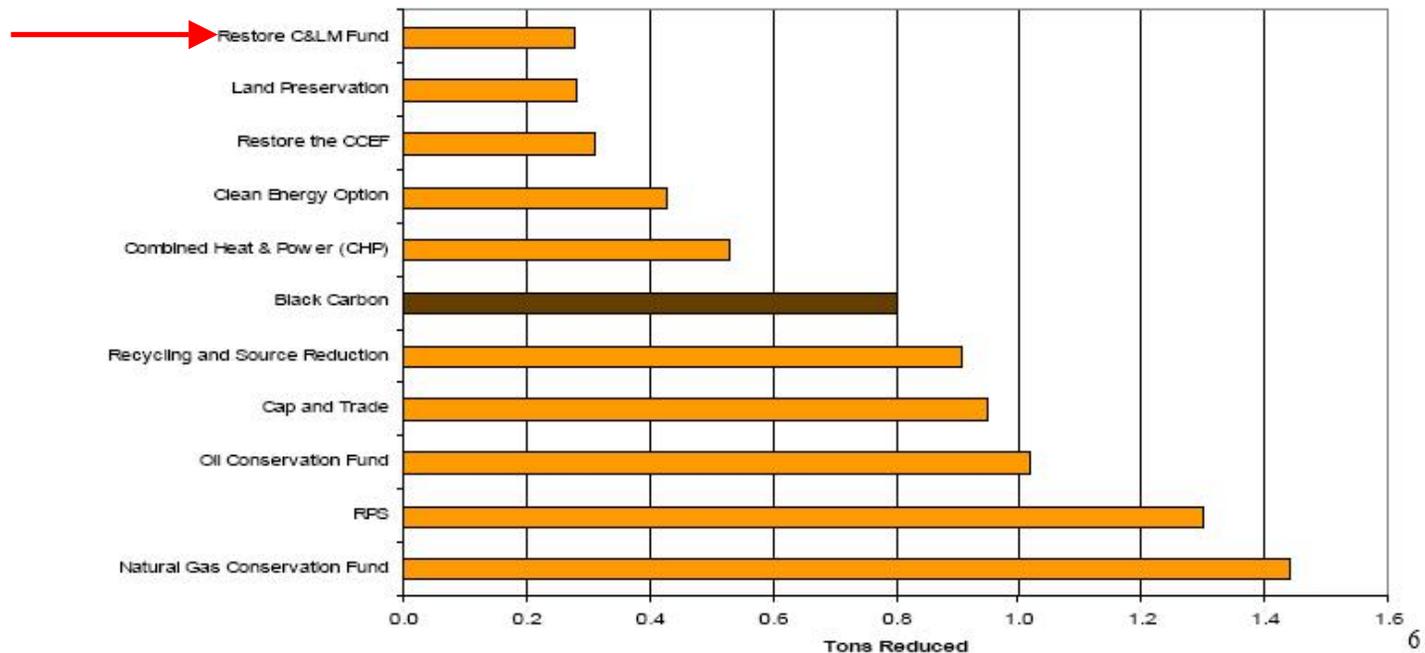
P connotes projected figures.

DEP's Climate Change Action Plan May Underestimate Energy Efficiency



Connecticut Climate Change

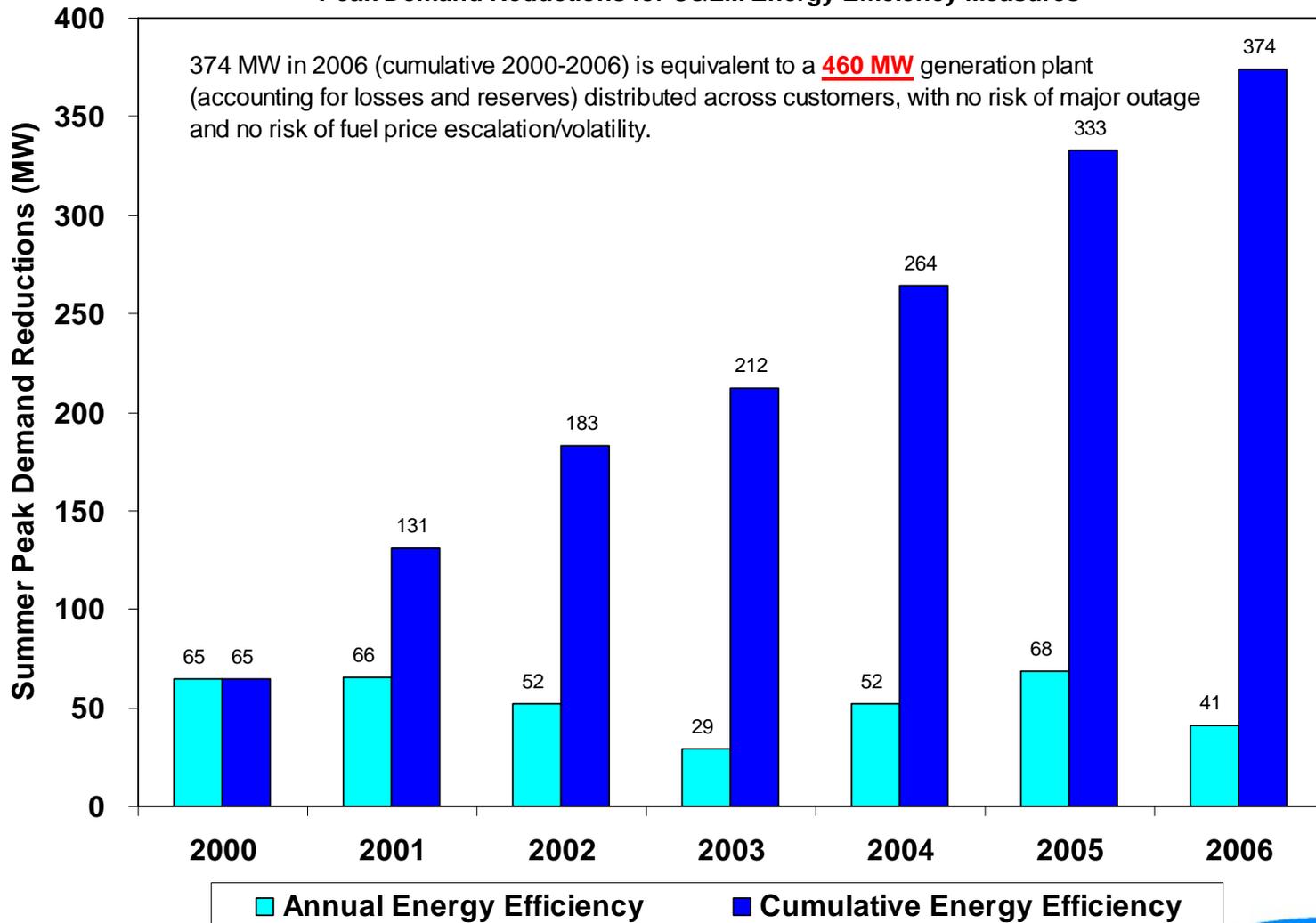
CT Climate Change Action Plan Background GHG Reductions for Top 10 Actions for 2010



<http://www.ctclimatechange.com/documents/C4pptforJune192007stakeholdermeeting.pdf>, Slide 6

Cumulative Energy Efficiency Summer Peak Demand Reductions

Peak Demand Reductions for C&LM Energy Efficiency Measures



The American Council for an Energy Efficient Economy (ACEEE) Ranked Connecticut #1 for Energy Efficiency in a Three Way Tie With California and Vermont.

States Were Ranked On:

- * Fuel economy standards for vehicles
- * Energy efficiency resource standards for utilities
- * Appliance efficiency standards
- * Building energy codes
- * Combined heat and power (CHP) technologies
- * Smart growth and public transportation policies
- * Tax incentives for efficient technologies
- * Energy efficiency in public buildings and fleets

The Order IS Important

To Maximize Pollution Reduction at the Least Cost

Efficiency Comes **First!**

- At least 12" of attic insulation
- Sealing air leaks and supply ducts
- Compact fluorescent bulbs
- New Energy Star appliances as old ones wear out.
- Possible new heating unit and a demand water heater
- Other measures on a case-by-case basis (sidewall insulation, new low-e windows, etc.)

Electrofinance

Using the positive cash flow savings provided by energy efficiency measures that are cost effective today to pay for other commodities such as:

- 1) The Clean Energy Options program green tags
- 2) A solar hot water or a photovoltaic (PV) system
- 3) Your retirement nest egg (found money)

Demand Side Management

Demand Response (MW)

Load Response

Price Response

Energy Efficiency (MW & MWh)

Demand Response=Time Dependent Activities

to:

Improve electric grid reliability

Manage electricity costs

Encourage load shifting/load shedding when the grid is near capacity or power prices are high

Demand Response Programs are designed to:

Offer clients incentives to curtail energy use

Provide reliable, predictable amount of power reductions

Typically require installation of software and hardware

Control client's electric power as needed during high use periods

Load Response

Load Response programs operate in response to requests for peak load reductions.

There is little, if any, discretion in compliance on the part of the customer.

The buyer or operator, directs load response programs.

Price Response

**Price response programs employ voluntary actions
in response to economic signals**

**Price response programs rely on wholesale clearing prices
as a signal to reimburse customers for their participation**

Are much more likely to be voluntary

**Price Response and Load Response programs differ
as a matter of degree**

Program Types

- **Reliability (Demand) Programs**
 - Customers respond to System Reliability Conditions as determined by ISO Control Room
- **Price Programs**
 - Customers respond to Wholesale Prices as determined by the Market

How Can Customers Participate?

- **Reduce Electricity Consumption**

- Shut down a manufacturing process
- Turn off discretionary lighting, motors, etc.
- Raise HVAC temperatures
- Use Lighting Controls (i.e., Dimming)
- Use an Energy Management System

- **Start Emergency Generator**

- Transfer load from the Grid to an Emergency Generator

- **Combination**

- Start up Emergency Generator and reduce load at the same time (Real Time Demand Response only)



Distributed Resources

- **Energy Independence Act (Public Act 05-01)**
 - Distributed Generation
- **Qualifying Projects**
 - Combined Heat and Power
 - Peak Shaving
 - Installed and Operating after July 21, 2005
- **Incentives**
 - \$450 or \$500 per kW



Distributed Resources

- **Energy Independence Act (Public Act 05-01)**
- **Emergency Generation**
 - \$250/kW Southwest Connecticut*
 - \$200/kW Remainder of Connecticut
 - Must enroll in ISO-NE Demand Response Program



Additional \$50/kW only available for units operational before April 30, 2008

So, Like Diamonds, Energy
Efficiency is
The Gift That Keeps on Giving

“We’re From the Government; We’re Here to Help You.”

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