

The Energy Efficiency Opportunity

Connecticut Experience & Policy Options

Speaker's Energy Task Force
Hartford, CT
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Environment Northeast

Environment Northeast is a nonprofit research and advocacy organization focusing on the Northeastern United States and Eastern Canada. Our mission is to address large-scale environmental challenges that threaten regional ecosystems, human health, or the management of significant natural resources. We use policy analysis, collaborative problem solving, and advocacy to advance the environmental and economic sustainability of the region.

Project Areas:

- Energy (efficiency, renewables, & air emissions)
- Climate Change (state & regional policy)
- Diesel Emissions
- Forest Practices & Biofuels

Offices: New Haven, CT / Hartford, CT
Boston, MA / Rockport, ME / Portland, ME



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Energy Efficiency in CT: Current Status

- Electric Efficiency (~\$95 million in 2007)
 - Well run and award winning programs with ECMB oversight
 - Save \$4 for every \$1 invested
 - Investment level limited by arbitrary spending cap (fund level)
 - No planning that balances supply and demand options to develop a least-cost plan
- Natural Gas Efficiency (increased to ~\$3 million in 2007)
 - ECMB oversight and review recently added – recent coordination with electric programs is good
 - A legislative requirement to balance supply and demand options and develop a least-cost plan exists but is NOT done
 - Utilities have been resistant to invest an equivalent amount to other states (~\$20 million would be in-line with Vermont)
- Oil Efficiency – None

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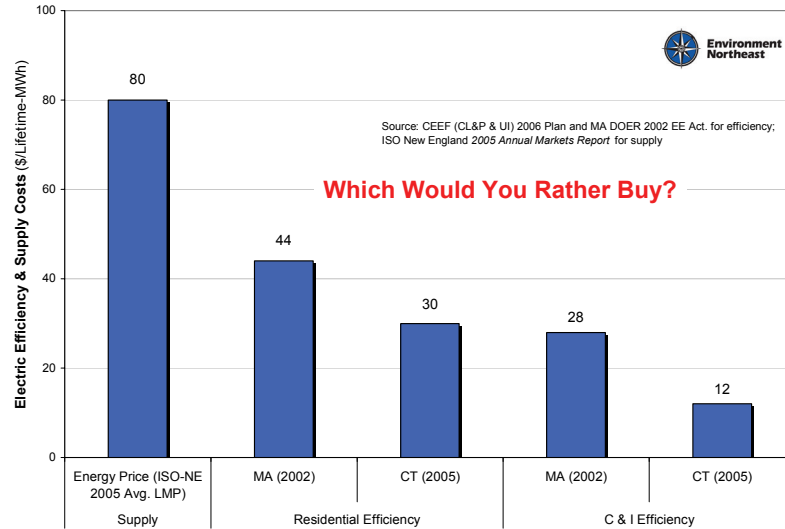
Electric EE Programs: 2005 CEEF Program Benefits

Annual Investment:	\$82,000,000		
Energy Savings:	4,398,000 MWh (Lifetime) ; 318,000 MWh (Year 1)		
Demand Reduction:	135,000 kW		
Economic Benefits:	\$550 million in avoided energy bills (Lifetime); \$40 million in avoided energy bills (Year 1) Generated \$4 in lifetime savings (today's dollars) for every \$1 spent Created approximately 1,000 non-utility jobs		
Customer Assistance to:	18,000 low income customers 890 small business customers 3,270 commercial and industrial customers		
Emissions Benefits (Tons):	Pollutant	2005	Lifetime
	CO2	198,586	2,748,461
	NOx & SOx	The program assists the region meet its goals under the cap and trade programs by reducing demand for electric power	
Awards:	Ranked #1 among U.S. states for cumulative annual energy savings (7.8%) as a percentage of annual total retail sales by American Council for Energy Efficient Economy (ACEEE) <i>National Scorecard on Utility and Public Benefits of Energy-Efficiency Programs</i> . (October, 2005). The U.S. national average is only 1.9%.		

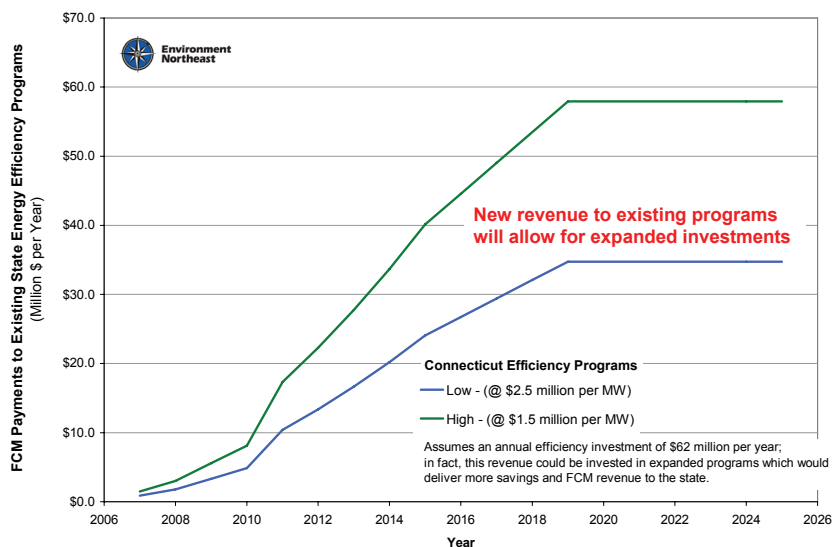
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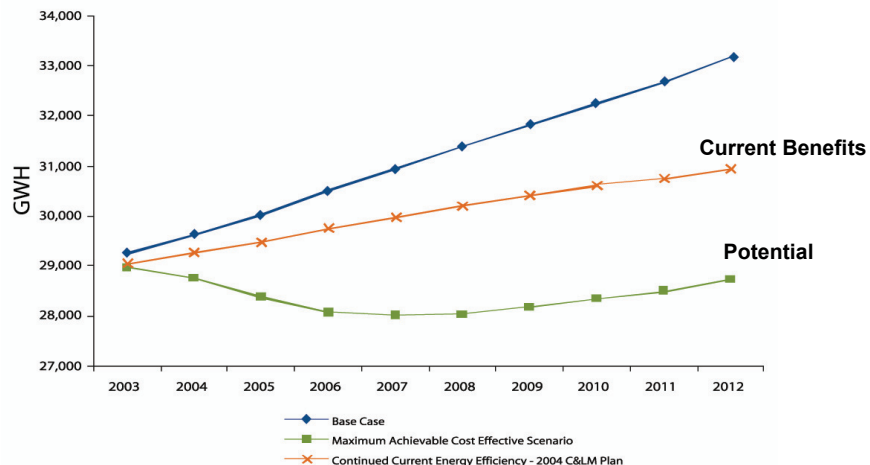
Electric EE Programs: Energy Comparison



Electric EE Programs: Capacity Market Opportunity Lowers CT EE Costs



Electric EE Programs: Maximum Achievable Cost Effective Potential



Source: GDS Associates Inc. and Quantum Consulting, 2004, *Independent Assessment of Conservation and Energy Efficiency Potential for Connecticut and the Southwest Connecticut Region*, for the Connecticut Energy Conservation Management Board

Electric EE Programs: Achieving Zero Load Growth

The maximum achievable electric efficiency potential report for Connecticut, commissioned by the CT Energy Conservation Management Board, indicates that we can reduce load growth in the state to zero and save consumers \$1.8 billion; all of this efficiency resource is available at lower cost than supply and only becoming more cost-effective as energy prices rise (the average load-weighted real-time system energy price in New England has grown from \$53.57/MWh in 2004 to \$79.96/MWh in 2005).

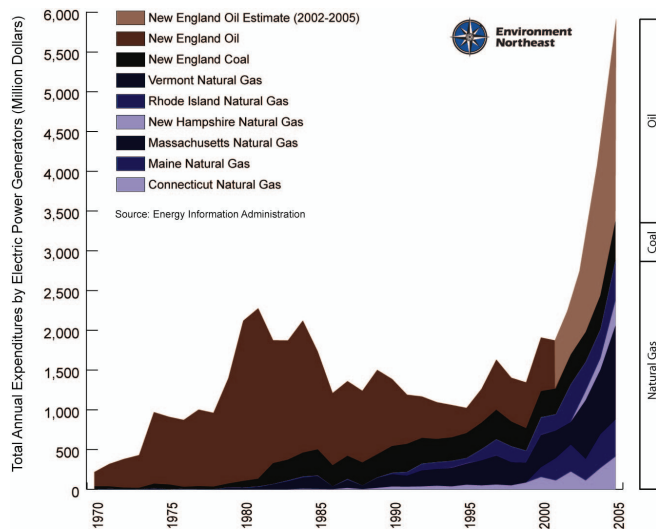
Demand Reduction	Reduction in Electric Use	NPV of Program Savings	Program Cost
Maximum Achievable Potential of 908 MW (13%) by 2012	Maximum Achievable Potential of about 4.47 million MWh (about 13%) by 2012, which eliminates projected load growth	\$1.8 Billion total, or \$1,228 per household	\$82 million - \$148 million / year (2003 dollars)

Source: GDS Associates Inc. and Quantum Consulting, 2004, *Independent Assessment of Conservation and Energy Efficiency Potential for Connecticut and the Southwest Connecticut Region*, for the Connecticut Energy Conservation Management Board

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Electric EE Programs: The Fossil Fuel Supply Alternative



The Trade Deficit to Pay for Fossil Fuels Used in New England Power Plants

Natural Gas EE Programs: Other States with Significant Programs

- Existing New England Programs
 - Massachusetts ————— □ ~\$10 million
 - New Hampshire
 - Vermont ————— □ ~\$20 million
 - Maine (new in 2005) ————— □ ~\$14 million
 - Rhode Island (new in 2006) ————— □ ~\$15million
 - Connecticut ————— □ Lagging well behind others in the region
- Equivalent Spending Level for Connecticut

Natural Gas EE Programs: 2004 Benefits - Vermont Gas Systems

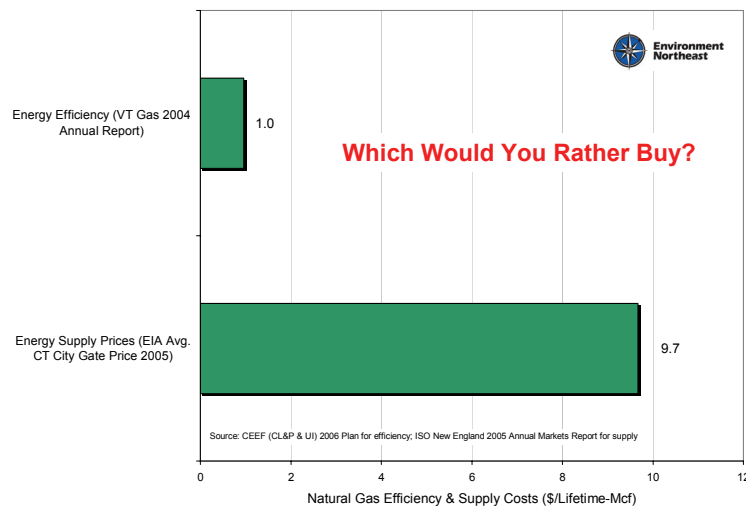
Annual Investment:	\$1.1 million 1.8% of Total Revenue (2003)	
Energy Savings:	57,000 Mcf (Annual) 1,168,000 Mcf (20 Year Lifetime)	
Demand Reduction:	480 Mcf Peak Day Savings	
Economic Benefits:	\$ 390,000 Saved (Annual) \$ 8 million Saved (Lifetime, not discounted)	
Customer Assistance:	Programs open to all customer classes on system 1,640 homes and businesses installed energy efficiency measures	
Emissions reductions (Tons):	Pollutant	2004
	CO2	3,300 tons
	NOx	2.6 tons
	SOx	1.1 tons
Awards:	VGS received the EPA/DOE Energy Star <i>Leadership in Energy Efficiency</i> in 2004. In recent years, more than 50% of residential new construction in the utility's service territory has met ENERGY STAR Qualified Home standards.	

Source: Vermont Gas Systems, Inc., "2004 Annual Report: Demand Side Management Programs," 2005, p. EXE-1.

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Natural Gas EE Programs: Energy Comparison



Policy Proposal: Overview

- Goal: Capture All Cost-effective Energy Efficiency
- Electric and Natural Gas Planning and Procurement
 - Currently no energy planning being done
 - A plan would be developed to meet the state's capacity and standard offer energy needs
 - All resources would be eligible (demand and supply)
 - Oversight and review by a stakeholder board and the DPUC
- Utility Rate Reform
 - Decoupling – align revenue requirements w/ EE
 - Performance Incentives – incentives for the utility to minimize consumer costs
- Fuel Oil Efficiency Programs

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Policy Proposal: Electric and Natural Gas Planning and Procurement

- **Goal:** To meet future electric and natural gas demand and energy growth through a transparent planning and procurement process, primarily for standard offer customers, that balances economic and environmental risks and costs and looks at all available energy resources on both the demand and supply side.
- **Process:** In order to achieve the goal, a revised regulatory structure needs to be created that allows for planning and procurement of energy and capacity in an open, transparent, and fair manner; which allows all energy resources to be eligible, including **efficiency**, demand response, **renewables**, clean distributed generation, and clean fossil

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Policy Proposal: Electric and Natural Gas Planning and Procurement

- Planning & Procurement Process
 - Part 1 – Energy and Environmental Review
 - Assess needs over the short and long term – energy & environmental
 - Identify resources, costs, benefits, and environmental issues
 - Report results and review
 - Part 2 – Procurement Plan
 - Based on the energy and environmental review, develop a procurement plan
 - Combination of resources, contract types, and contract lengths to balance costs, risk, and environmental goals
- Stakeholder Panel
 - Provide oversight, review, and preliminary approval
 - Model on the ECMB or adjusted CEAB
- Final Approval by the DPUC

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Policy Proposal: Utility Rate Reform

- In order to align utility incentives with the goals of this planning and procurement process, there should be reforms to the way distribution utilities are compensated for the services they provide.
- **Decoupling:** Electric distribution companies currently recover most fixed costs through kilowatt-hour charges that create an incentive for the utility to maximize sales. To remove this powerful disincentive for investments in energy efficiency and distributed resources, modest, regular true-ups in rates should be established to ensure that any fixed costs recovered in kilowatt-hour charges are not held hostage to sales volumes.
- **Performance Incentives:** Distribution companies should recover reasonable and prudent costs incurred in implementing planning and procurement. The DPUC would conduct a proceeding to establish a performance-based incentive plan, tied to objective benchmarks, for gas and electric distribution companies to provide an incentive to lower the cost and volatility of energy to consumers through the procurement planning and acquisition process.

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Policy Proposal: Fuel Oil Efficiency Programs

- State residents' and businesses that use heating oil also deserve relief from soaring prices
- Similar efficiency and conservation programs should be developed for heating oil users under the oversight of the Energy Conservation Management Board and in coordination with other efficiency programs for maximum cost effectiveness
- These programs should be paid for through a 1 cent per gallon surcharge on heating oil or from a dedicated \$10 million per year from the gross-receipts tax on petroleum products

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Increased Investments in Energy Efficiency Yield:

- Lower bills for the state's consumers
- More energy \$\$\$ invested at home instead of flowing out of state to pay for fossil fuels, leads to documented economic growth
- Job growth in the energy service sector
- More efficient commercial & industrial operations
- Reduced requirements to build new power plants, transmission lines, and import facilities
- Reduced air emissions and greenhouse gas emissions

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