

Energy Efficiency: An Engine of Economic Growth

Presentation to Connecticut ECMB

October 21, 2009



Why This Study Was Needed

- Other assessments only look at the direct costs and savings of the program to participants and ratepayers
- Need to understand the positive impacts of EE to the broader economy
- Encourage and reinforce treatment of efficiency by state leaders as an economic development tool

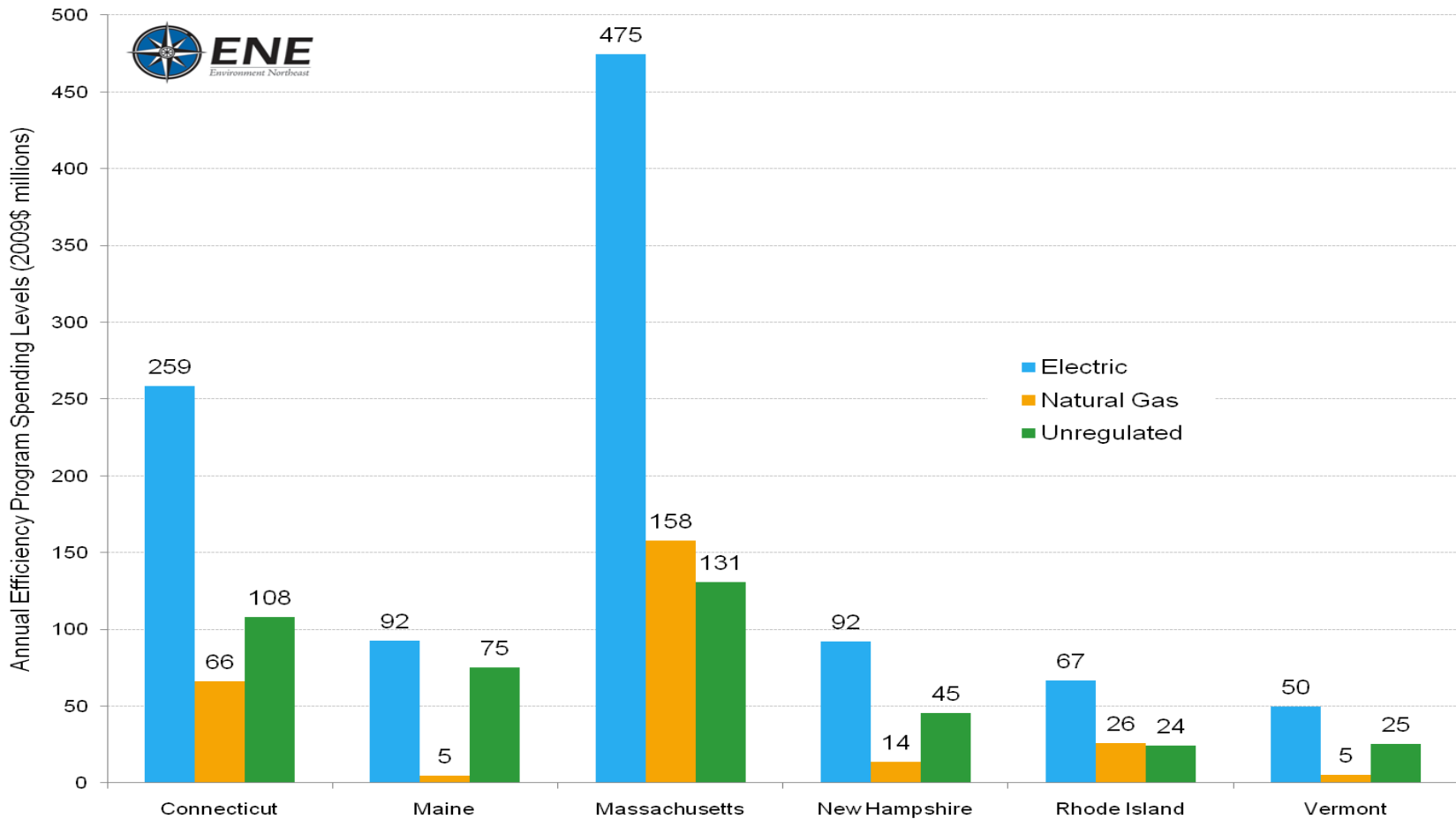
Methodology

- Energy cost and consumption model
 - EE spending levels near all cost-effective
 - Published forecasts of energy consumption and prices
 - Conservative estimates of future EE costs
 - Developed baseline and EE scenario projections
- Macroeconomic impacts modeled with REMI
 - REMI baseline forecast
 - Costs/savings from above used as input for EE scenario
 - EE jobs composition specified in model

REMI Model

- Utilized Regional Economic Models Inc (REMI), a multi-state *Policy Insight* forecasting tool
- This is the same system that was used to evaluate the economic impacts from the Regional Greenhouse Gas Initiative (RGGI)
- REMI allows the analyst to enter state-specific *annual* changes and then generate an economic forecast
- The model used forecasts for 70 different industries through the year 2038

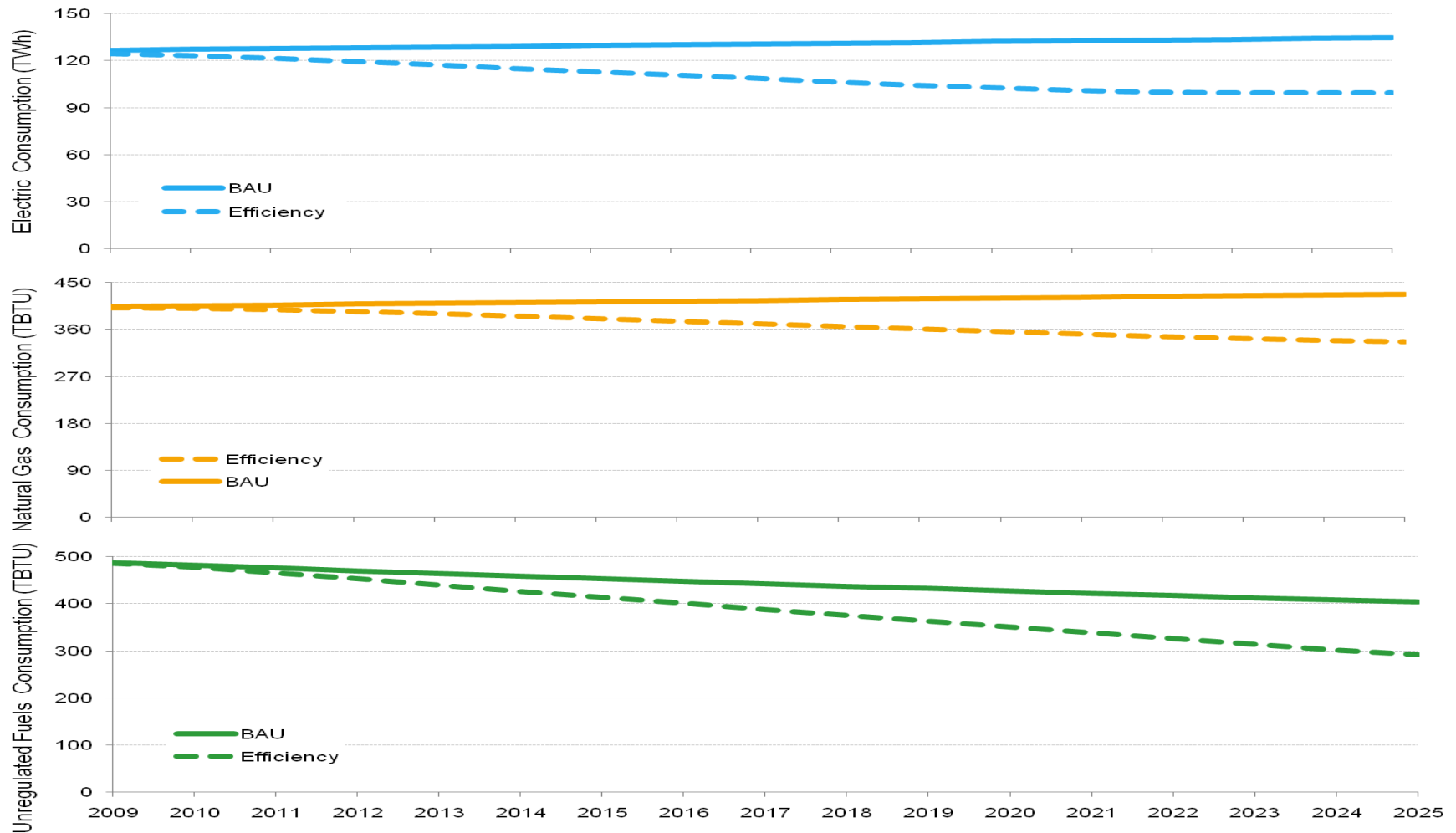
Efficiency Spending Levels



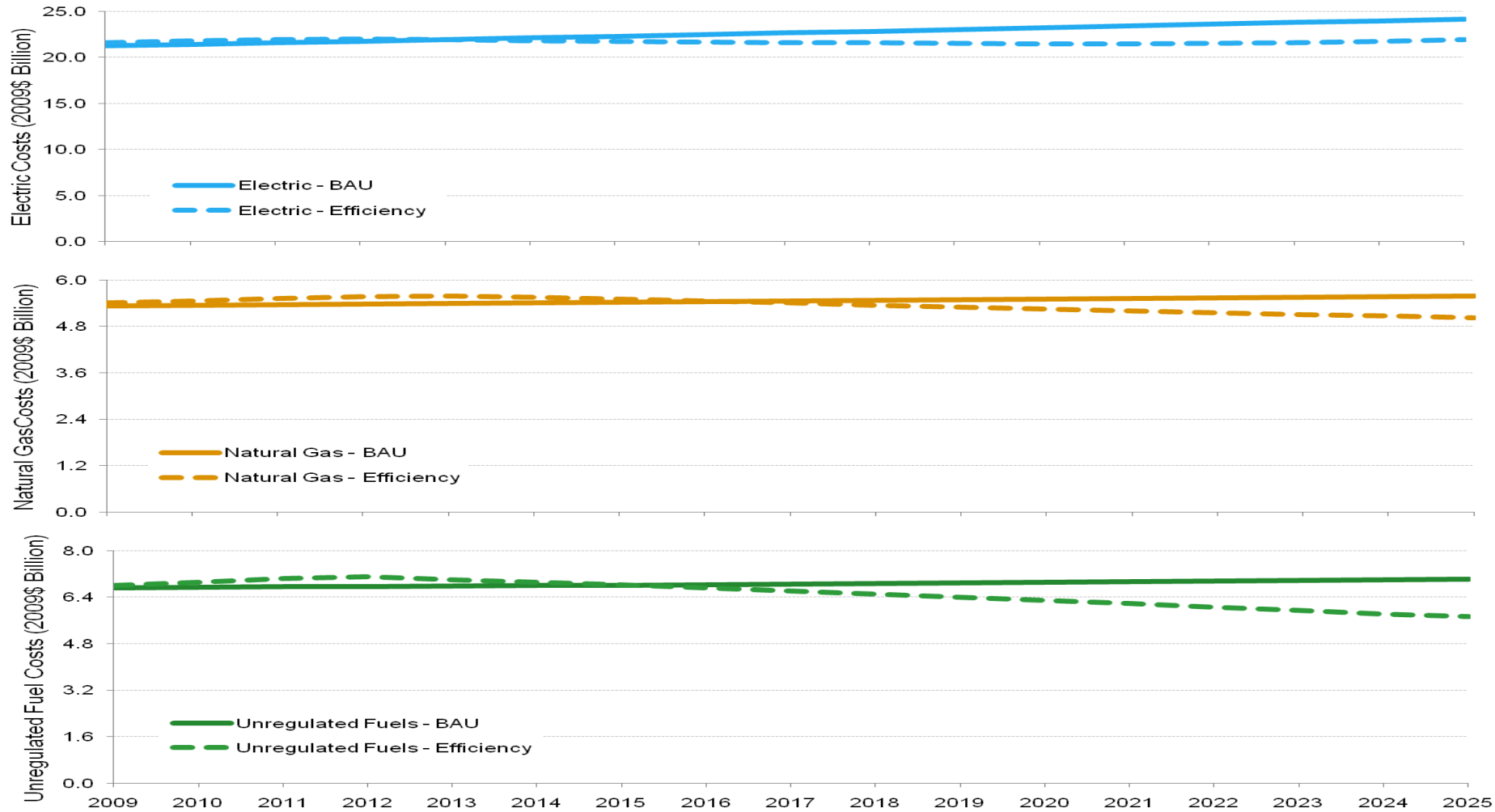
EE Modeled Characteristics

Electricity	Residential	C&I	Units
First-Year Program Costs per Annual Savings- Energy	425	375	\$/MWh
Lifetime Program Cost per KWh	0.035	0.027	\$/KWh
First-Year Program Costs - Capacity	3300	2500	\$/KW
Average Participant Copay	12%	32%	%
Average Measure Life	12	14	Years
Natural Gas and Non-Regulated Fuels			
First-Year Program Costs per Annual Savings	80	30	\$/MMBTU
Lifetime Program Cost per MMBTU - Energy	4.00	2.00	\$/MMBTU
Average Participant Copay	20%	45%	%
Average Measure Life	20	15	Years

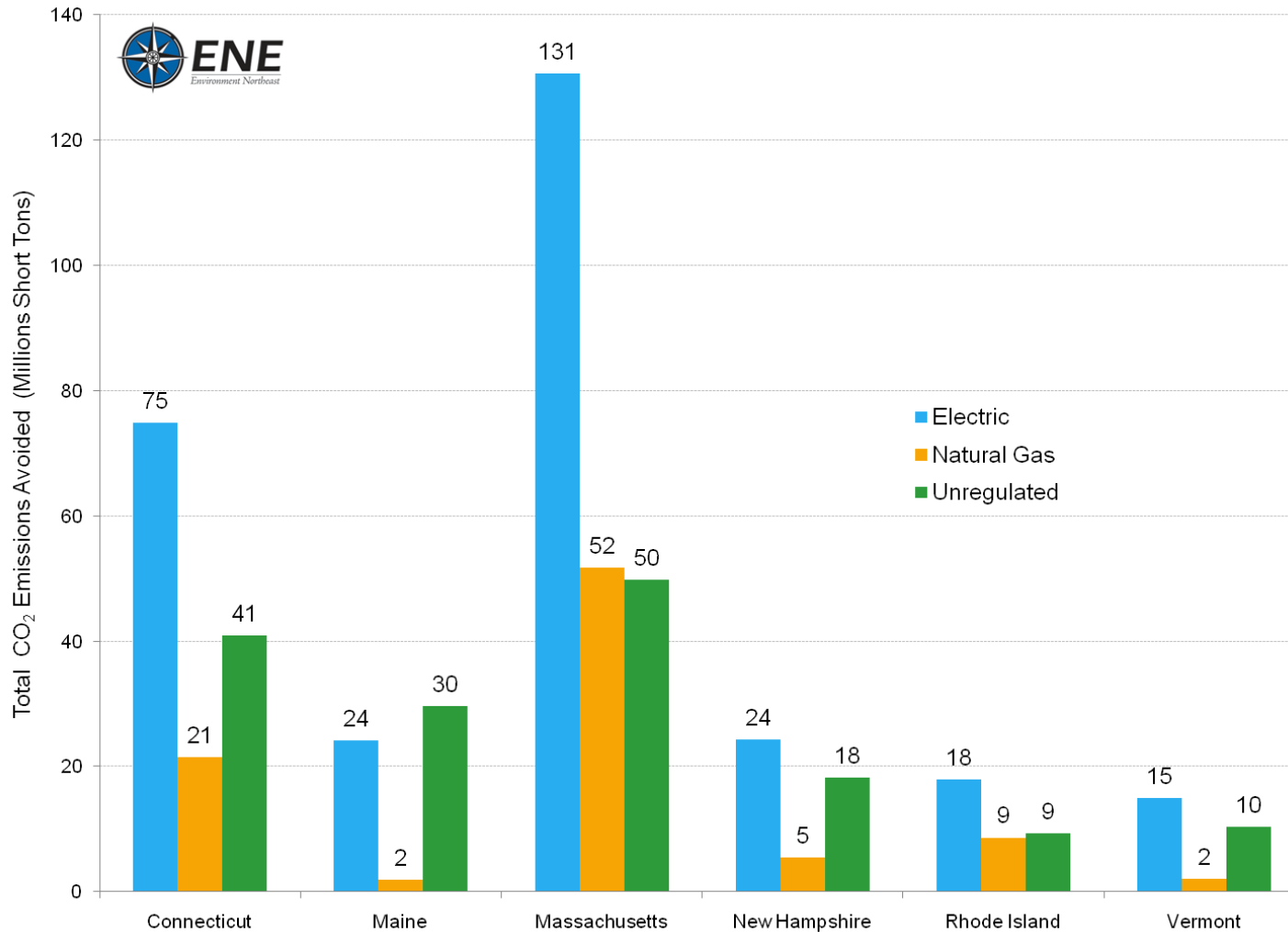
Results - Energy Savings



Results - Energy Cost Savings



Results - Emissions Reductions



New England Total Economic Impacts

	Electric	Natural Gas	Unregulated Fuels
Total Efficiency Program Costs (\$Billions)	16.8	4.1	6.3
Increase in GSP (\$Billions)	99.4	30.6	53.1
Maximum annual GSP Increase (\$Billions)	5.6	1.8	2.9
Percent of GSP Increase Resulting from Efficiency Spending	12%	11%	9%
Percent of GSP Increase Resulting from Energy Savings	88%	89%	91%
Dollars of GSP Increase per \$1 of Program Spending	5.9	7.4	8.5
Increase in Employment (Job Years)	767,011	207,924	417,061
Maximum annual Employment Increase (Jobs)	43,193	12,907	24,036
Percent of Employment Increase from Efficiency Spending	16%	15%	12%
Percent of Employment Increase from Energy Savings	84%	85%	88%
Job-Years per \$Million of Program Spending	46	50	66

Connecticut Results Summary

	Electric	Natural Gas	Unregulated Fuels
Energy Savings	(GWh)	(TBTU)	(TBTU)
Maximum annual savings	8,600	22	29
Maximum savings vs. Business as Usual	25%	20%	28%
Lifetime savings (15 years of programs)	125,900	272	368
Equivalent GHG Emissions Avoided	(Millions short tons)	(Millions short tons)	(Millions short tons)
Maximum annual avoided emissions	4.3	1.3	2.3
Maximum annual avoided emissions vs. 2005 total Connecticut Emissions	9.7%	2.9%	5.2%
Lifetime avoided emissions (15 years of programs)	72	21	41

Connecticut Economic Impacts

	Electric	Natural Gas	Unregulated Fuels
Total Efficiency Program Costs (\$Billions)	4.4	.93	1.6
Increase in GSP (\$Billions)	25	6.6	12
Maximum annual GSP Increase (\$Billions)	1.37	0.41	0.65
Percent of GSP Increase Resulting from Efficiency Spending	11%	10%	8%
Percent of GSP Increase Resulting from Energy Savings	89%	90%	92%
Dollars of GSP Increase per \$1 of Program Spending	5.7	7.0	7.1
Increase in Employment (Job Years)	183,000	42,000	78,000
Maximum annual Employment Increase (Jobs)	9,700	2,700	4,600
Percent of Employment Increase from Efficiency Spending	15%	14%	11%
Percent of Employment Increase from Energy Savings	85%	86%	89%
Job-Years per \$Million of Program Spending	41	45	48

Conclusions

- Experience shows that mandates and incentives are needed to overcome barriers to investing in efficiency
- This study shows that the economic benefits of EE investments are much greater than typically calculated
- Results should encourage states to maintain or expand programs to capture all cost-effective efficiency for all fuels