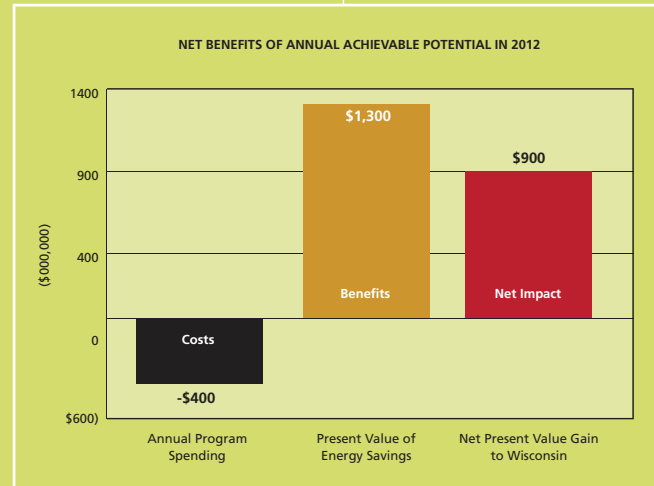


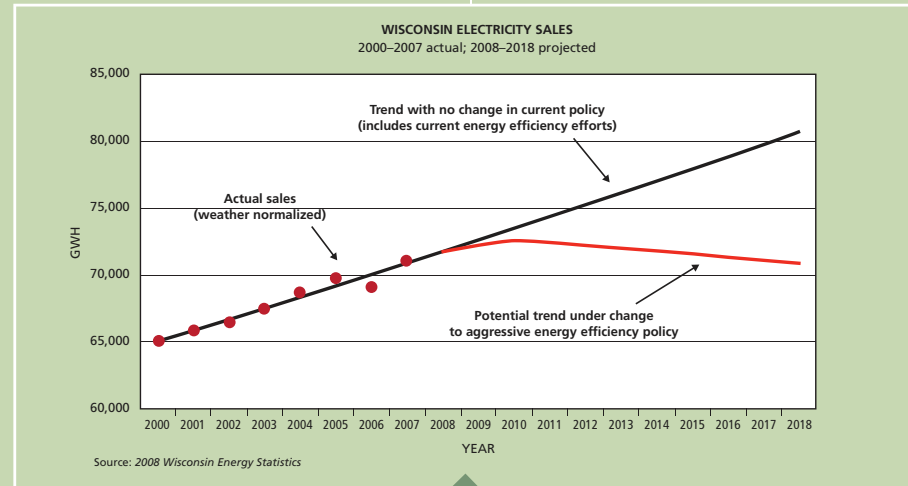
AN INNOVATIVE APPROACH TO ASSESSING ENERGY EFFICIENCY POTENTIAL IN WISCONSIN



Energy Center of Wisconsin conducted this study with assistance from ACEEE, GDS Associates, and L&S Technical Associates



What will it take to reverse the load growth trajectory?



RESULTS

Projected annual energy savings by 2012:

- 1.6 percent of total electricity sales
- 1.6 percent of electricity peak demand
- 1.0 percent of total natural gas sales

New behavior-based program strategies and advanced utility rate designs could produce additional savings

By achieving these savings, each year Wisconsin will:

- Generate \$900 million in net lifecycle energy cost savings
- Reduce greenhouse gas emissions by 1.3 million tons
- Support 7,000 to 9,000 jobs (net)

INNOVATIVE SCOPE

Webster's definition of potential:
"existing in possibility, not in actuality."

QUESTION

What level of savings could be achieved if we **change** policies relating to energy efficiency (rather than what we would expect to occur under continuation of current policies).

RESEARCH TASK

Determine a reasonable **upper bound** of achievable energy savings.

APPROACH

Monetized value of avoided CO₂ emissions (\$0.02 5/kWh; \$0.176/therm)

Used a Delphi process to poll the experts on what could be achieved "under the **most aggressive possible** program approaches and funding"

Used scenario analysis to test the outer bound

- Monetized avoided emissions **other than carbon** (\$0.02/kWh; \$0.25/therm)
- Reduced cost-effectiveness threshold to 0.75 to adjust for distributional effects
- Lowered real discount rate to 2% consistent with environmental economic principles

INNOVATIVE METHODS

Linear model for increased transparency

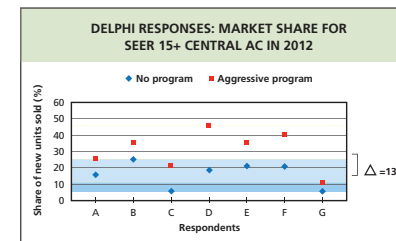
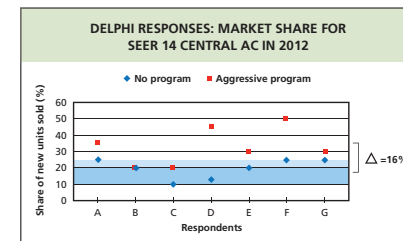
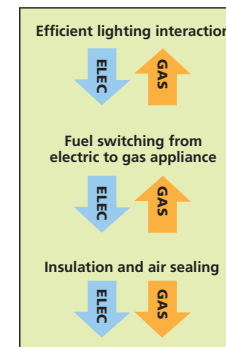
- Measures were not artificially bundled into programs
- Easy to modify individual parameters and re-run

Increased attention to modeling interactive effects

- Fuel switching
- Measures that save electricity and gas
- End use interactions (primarily lighting, cooling and heating)

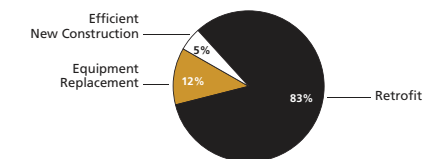
Delphi process to gather input from experts

- 33 energy efficiency experts
- 80 efficiency measures addressed



INNOVATIVE PROGRAMS

UNTAPPED ENERGY EFFICIENCY OPPORTUNITIES BY SOURCE



OLD PROGRAM MODELS

one house, one audit

rebates for consumers

influence decisions at the time of purchase

NEW PROGRAM MODELS

many neighboring houses; many audits; many retrofits

retailer rewards based on net increases over prior year sales

behavior-based strategies that influence choices affecting energy consumption