

The Business Case for Greater Use of the Energy Efficiency Resource

Indiana Utilities Commission
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The Regulatory Assistance Project

50 State Street, Suite 3
Montpelier, Vermont USA 05602
Tel: 802.223.8199
Fax: 802.223.8172

177 Water St.
Gardiner, Maine USA 04345
Tel: 207.582.1135
Fax: 207.582.1176

Website:
<http://www.raponline.org>



The Regulatory Assistance Project

RAP is a non-profit organization, formed in 1992, that provides workshops and education assistance to state government officials on electric utility regulation. RAP is funded by the Energy Foundation and the US DOE.

RAP Mission: *RAP is committed to fostering regulatory policies for the electric industry that encourage economic efficiency, protect environmental quality, assure system reliability, and allocate system benefits fairly to all customers.*



Who We Are

- **Cheryl Harrington** is an attorney and cofounder of RAP. She was Commissioner of the Maine Public Utility Commission 1982-1991, Vice Chair of NARUC's Energy Conservation Committee. She has taught utility resource planning in just about every state except Nebraska.
- **Jim Lazar** is a regulatory economist based in Olympia, Washington consulting in electric and natural gas utility ratemaking and resource planning since 1982. His clients have included municipal and cooperative electric utilities, natural gas utilities, regulatory commissions, state consumer advocates, and public interest organizations in the United States, Canada, Ireland, New Zealand, and Australia.



The Business Case

- Energy Efficiency is a Energy Resource not a Social Program.
- Strategic Deployment of Energy Efficiency will reduce the current and future costs of Electricity and Natural Gas in Indiana.
- Efficiency can be the power-grid's most fine-tuned power plant.

Energy Efficiency is Not a Social Program – It is a Resource

- Generation Benefits:
 - Both capacity and energy savings
 - Lowers fuel supply and fuel costs
 - Benefits in real-time and through deferred investment
 - Reduces required reserves
- Transmission and distribution benefits:
 - Deferral of new investment
 - Line loss reductions
 - Improved reliability
- Many states are investing in efficiency, *but* miss out on full potential of ***Fully*** Integrated Resource Planning

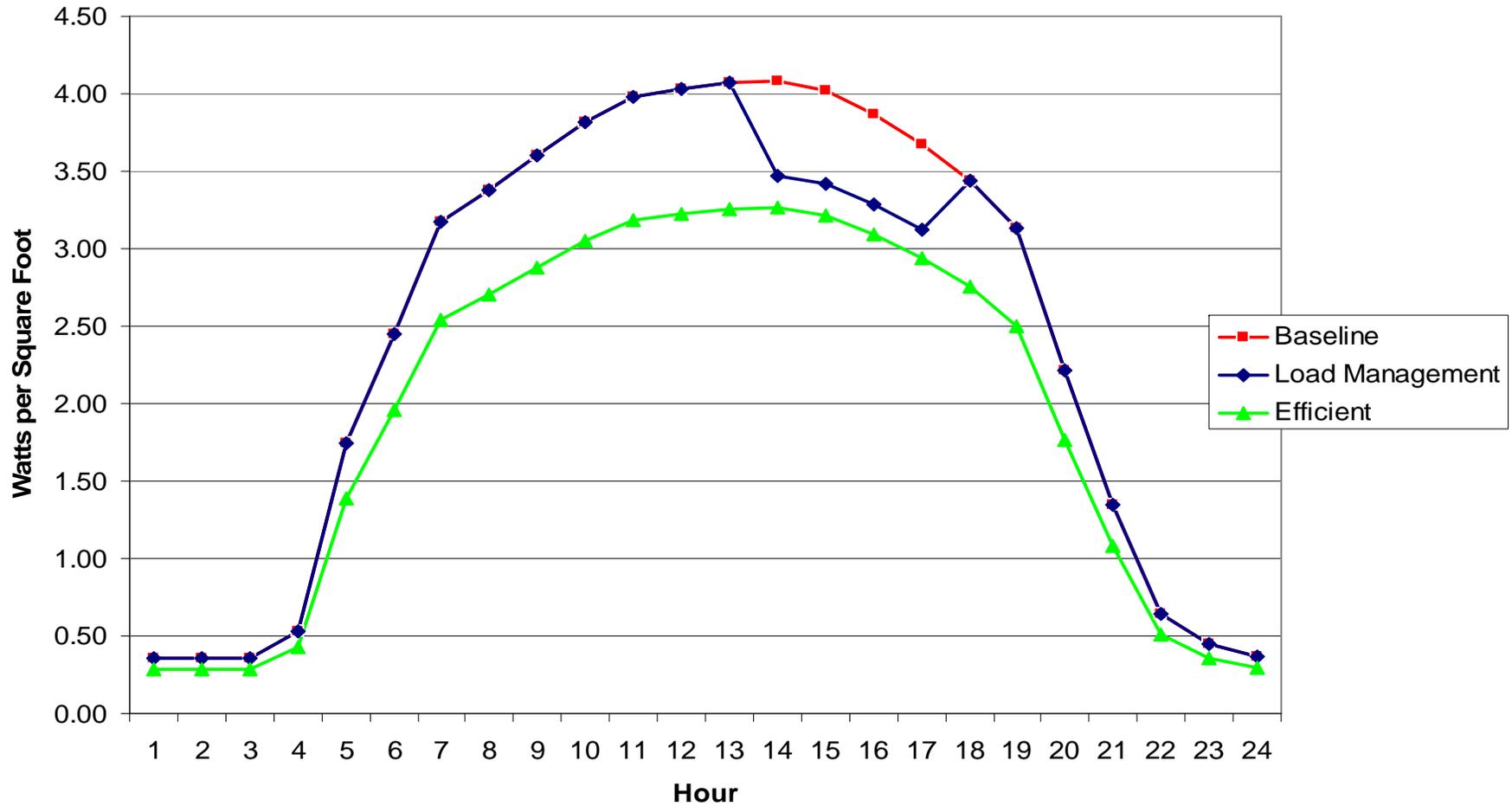


Why Energy Efficiency

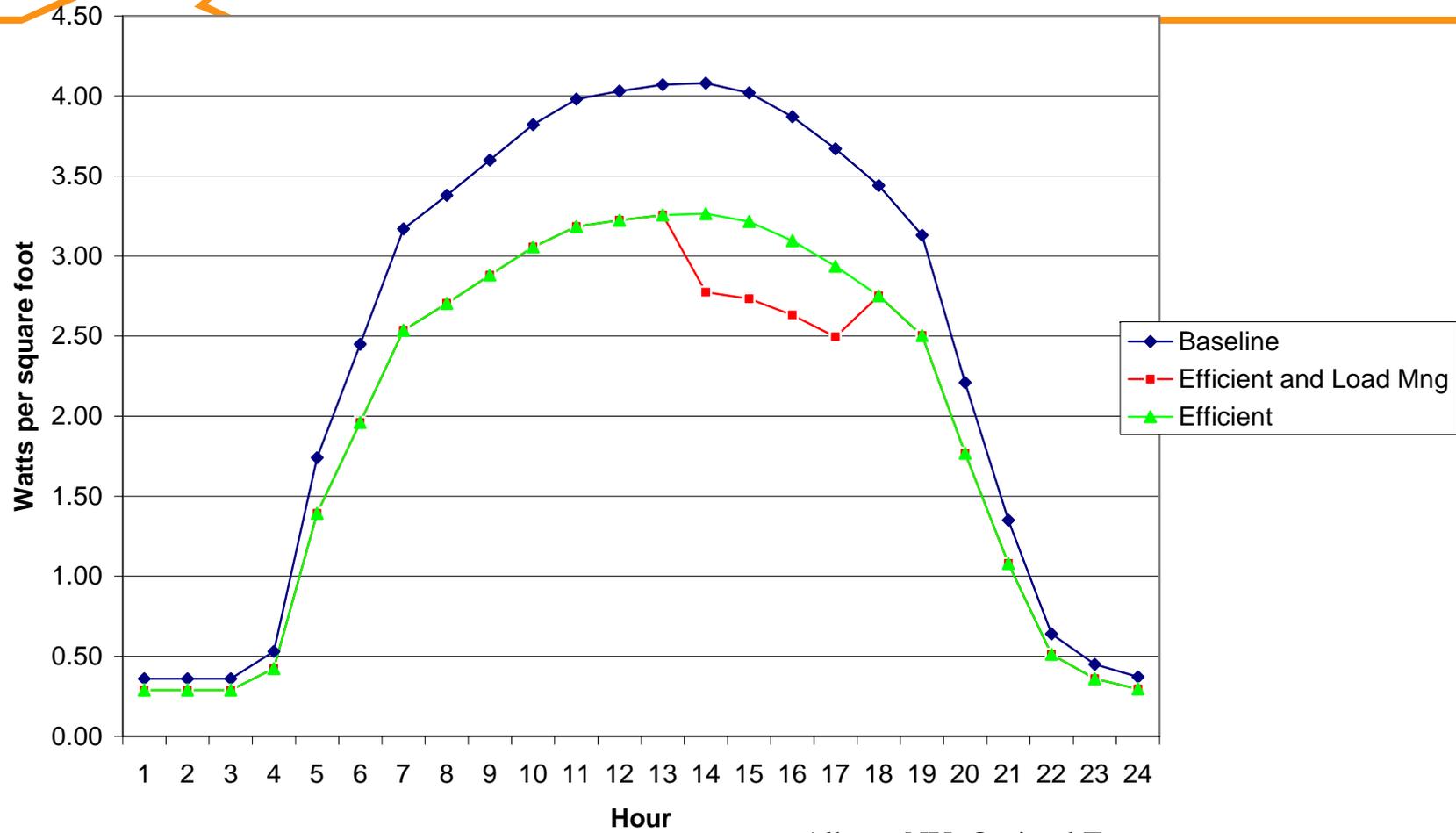
- Cost-effective (cheap) compared with other resources.
- An abundant resource native to Indiana.
- Is highly precise in meeting system needs.
- Inherent barriers exist for electric and gas consumers to do efficiency on their own
- It creates jobs and save money.



Combined Commercial Cooling and Lighting Loadshape Baseline, Load Management (STDR), and Energy Efficiency



Combined Commercial Cooling and Lighting Loadshape with Efficiency and Load Management (Four-Hour Curtailment by 15%)



Albany NY, Optimal Energy



What Costs are Displaced?

- Peak energy at 12 cents a kWh
- Off peak energy at 5 cents a kWh
- New capacity (peak or maybe even baseload) at 7 cents kWh
- Probably some transmission at 2 cents kWh
- Maybe a distribution upgrade at 1 cent kWh
- Somewhere between 8-22 cents kWh



Cost of Energy Efficiency

- Mature energy efficiency programs are being delivered at a cost to consumers of 3 cents per kWh
- Supply sources (don't forget transmission, distribution & lines losses) cost more
- Risk of increased future costs for environmental compliance from fossil fuel supply has to be counted in as well.



Energy Efficiency is the *Most* Adaptable Resource

- Can be targeted and shaped to particular system need.
- Works through all economic cycles.
- Works in an energy deficit or surplus.
- Makes your customers happy.



Delivering Energy Efficiency through Utility Rates

- Consumers pay because there are system benefits to all from energy efficiency
- Utilities or other administrator delivers
- Network of contractors to the program
- Supply chain of services and products (trade allies)
- Leadership reinforces success
- Regulators oversee progress and direction



Energy Efficiency Program Spending and Savings

- For highest spending states:
 - Spending ranges are 3% of utility revenues (CA higher)
 - Savings are approaching 1% of sales and 1% of peak
 - MN, WI, IA, CA, MA, VT, OR, NY, NJ are all good states to take a look at for programs, policies and results.



Integration of EE into Resource Planning and Investment

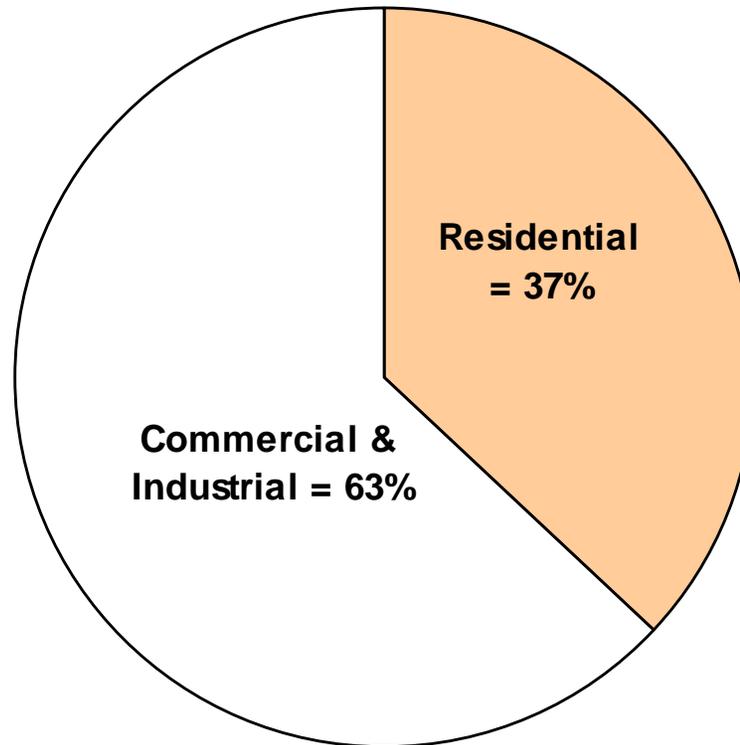
- Using the energy efficiency resources planners to ask the right questions:
 - How much energy efficiency (reduced load growth) would alleviate the need for this new transmission line?
 - How much energy efficiency would it take to moderate load growth while allowing my state's economy to grow and have all the electricity and gas it needs at affordable prices?

What are the Major “Reservoirs” of Achievable EE Potential in 2013?

#1: By Sector

Residential Savings = 12,745 GWH

C&I Savings = 21,630 GWH

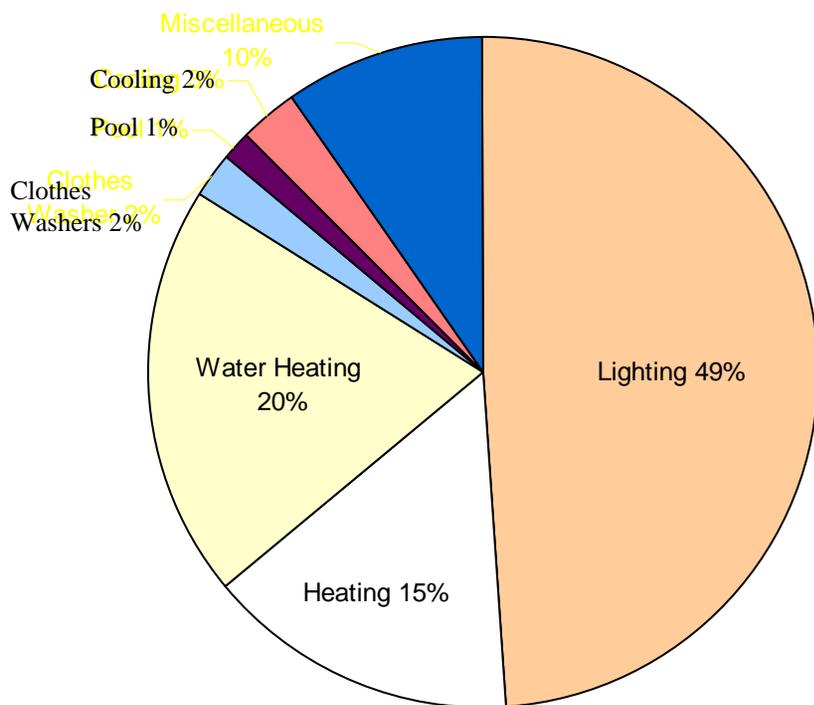


NEEP assessment of
New England, 2004

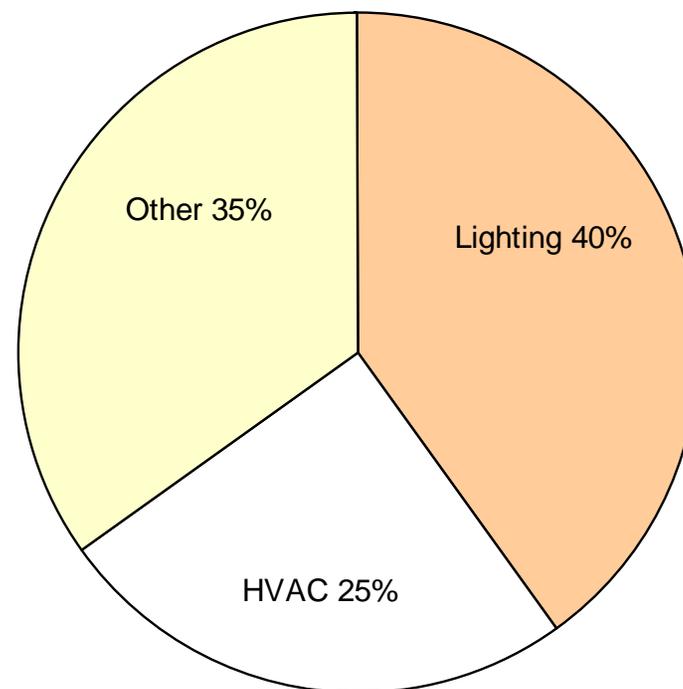
What are the Major “Reservoirs” of Achievable EE Potential in 2013?

#2: By End Use

Residential Savings



C&I Savings



NEEP assessment of New England, 2004



IUB – 2004 DSM Results - IOUs

- Cumulative effects of 14 years of DSM
- 1,400 GWh – about 3.5% of MWh sold
- 970 peak MW – about 12% of peak MW
- 6,000,000 MCF – about 2.5% of total “throughput” or 4% of retail sales
- B/C ratios about 2.0 and NEW net benefits about \$100 million per year, 1999-2004



Minnesota Legislative Audit Report

Based on the benefit-cost information reported by Minnesota's investor-owned utilities, the Conservation Improvement Program (CIP) has been cost effective. In 2003, CIP's societal benefits were two or three times greater than its societal costs. While we did find problems with the accuracy of these estimates, the problems do not undermine the overall conclusion that CIP has been cost effective. In fact, the utility estimates tended to understate the cost effectiveness of the program, especially for natural gas projects.

<http://www.auditor.leg.state.mn.us/ped/2005/pe0504.htm>



Minnesota Legislative Audit (2)

CIP does not appear to be becoming less effective over time. The cost effectiveness of CIP has remained relatively constant over the last several years. In addition, utilities that have tried to estimate the potential for cost-effective conservation in Minnesota have found that the state should not run out of conservation opportunities in the near future.

Chapter Two Cost Effectiveness

<http://www.auditor.leg.state.mn.us/ped/2005/pe0504.htm>



Barriers to Customer Implementation of Energy Efficiency

- Information and Knowledge
 - Customers, stores, contractors, suppliers, etc.
- Time to make different decisions
- Upfront cash
- Long run cash, Financing
- Split Responsibility (the renter's dilemma)

Connection to Codes and Standards

- If standard practice for energy consumption is more efficient, consumer funded energy efficiency programs can focus on more valuable objectives.
 - This is the way building energy codes and appliance and equipment efficiency standards work with consumer funded energy efficiency programs





Resources

- Energy Efficiency Tool Box
 - www.raonline.org/Pubs/General/EfficiencyPolicyToolkit106.pdf
- www.Neep.org
- www.aceee.org
- www.mwnaturalgas.org



Thanks for your attention

- rapmaine@aol.com
- www.raponline.org
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