

Funding Energy Efficiency in Regulated & Restructured Markets

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Rate Designs & Efficiency

Recovering Sales due to Energy
Efficiency in a timely manner,
Recovering Program Costs without
Reducing Utilities Financial Margins

Program Cost Recovery

- Recovery of the direct costs associated with program administration including evaluation, implementation and incentives to program participants.
- Failure to recover these costs produces a direct dollar-for-dollar reduction in utility earnings, and discourages further investment.
- The Commission has an obligation to ensure the costs passed along to ratepayers are just and reasonable and are prudently incurred.

Lost Margin Recovery

The objective of an energy efficiency program is to cost effectively reduce consumption of electricity or natural gas. However, reducing consumption also reduces utility revenues and, under traditional rate designs that recover fixed costs through volumetric charges, lower revenues often lead to under-recovery of a utility's fixed costs. This can lead to lower net operating margins and profits and what is termed the "Lost Margin" effect.

What is the role of the Commission with regard to lost revenue?

- Should the Commission provide compensation for lost margins in the form of performance incentives?
- Should the Commission change the basic relationship between sales and profits by decoupling revenues from sales?
- Should the Commission implement an Alternative Rate Structure which will allocate all current fixed costs to a per customer charge that does not vary with consumption?

Decoupling Mechanism

Section 97 (4) of PA 295, states: *“Not later than 1 year after the effective date of this act, the commission shall submit a report on the potential rate impacts on all classes of customers if the electric providers whose rates are regulated by the commission decouple rates. The report shall be submitted to the standing committees of the senate and house of representatives with primary responsibility for energy and environmental issues. The commission’s report shall review whether **decoupling** would be cost effective and would reduce the overall consumption of fossil fuels in this state.”*

MIPSC Staff Decoupling Recommendations

On April 27, 2009, Staff recommended to the Commission an Energy Optimization (EO) Program Lost Revenue Tracker: An EO Lost Revenue tracker directly addresses the primary disincentive for a utility to promote energy efficiency measures by its retail customers. The mechanism does not rely on a comparison of actual sales levels to rate case projections; rather it relies on a computation of lost sales that directly resulted from energy efficiency programming efforts.

Energy Efficiency Resource Standards

- An Energy Efficiency Resource Standard (EERS) is a simple, market-based mechanism to encourage more efficient generation, transmission, and use of electricity and natural gas.
- An EERS consists of electric and/or gas energy savings targets for utilities.
- EERS-like laws are now in operation in several states and countries.
- EERS targets generally start at modest levels (e.g., savings of 0.25% of sales annually) and ramp-up over several years.
- states with substantial current programs can ramp-up much more quickly.

PA 295:

Subpart B. Energy Optimization

Sec. 71. (1) A provider shall file a proposed energy optimization plan with the commission within the following time period:

(a) For a provider whose rates are regulated by the commission, 90 days after the commission enters a temporary order under section 171.

(b) For a cooperative electric utility that has elected to become member-regulated under the electric cooperative member regulation act, 2008 PA 167, MCL 460.31 to 460.39, or a municipally-owned electric utility, 120 days after the commission enters a temporary order under section 171.

(2) The overall goal of an energy optimization plan shall be to reduce the future costs of provider service to customers. In particular, an EO plan shall be designed to delay the need for constructing new electric generating facilities and thereby protect consumers from incurring the costs of such construction. The proposed energy optimization plan shall be subject to approval in the same manner as an electric provider's renewable energy plan under subpart A. A provider may combine its energy optimization plan with its renewable energy plan.

(3) An energy optimization plan shall do all of the following:

- (a) Propose a set of energy optimization programs that include offerings for each customer class, including low income residential. The commission shall allow providers flexibility to tailor the relative amount of effort devoted to each customer class based on the specific characteristics of their service territory.
- (b) Specify necessary funding levels.
- (c) Describe how energy optimization program costs will be recovered as provided in section 89(2).

- (d) Ensure, to the extent feasible, that charges collected from a particular customer rate class are spent on energy optimization programs for that rate class.
- (e) Demonstrate that the proposed energy optimization programs and funding are sufficient to ensure the achievement of applicable energy optimization standards.
- (f) Specify whether the number of megawatt hours of electricity or decatherms or MCFs of natural gas used in the calculation of incremental energy savings under section 77 will be weather-normalized or based on the average number of megawatt hours of electricity or decatherms or MCFs of natural gas sold by the provider annually during the previous 3 years to retail customers in this state. Once the plan is approved by the commission, this option shall not be changed.

(g) Demonstrate that the provider's energy optimization programs, excluding program offerings to low income residential customers, will collectively be cost-effective.

(h) Provide for the practical and effective administration of the proposed energy optimization programs. The commission shall allow providers flexibility in designing their energy optimization programs and administrative approach. A provider's energy optimization programs or any part thereof, may be administered, at the provider's option, by the provider, alone or jointly with other providers, by a state agency, or by an appropriate experienced nonprofit organization selected after a competitive bid process.

(i) Include a process for obtaining an independent expert evaluation of the actual energy optimization programs to verify the incremental energy savings from each energy optimization program for purposes of section 77. All such evaluations shall be subject to public review and commission oversight.



(4) Subject to subsection (5), an energy optimization plan may do 1 or more of the following:

(a) Utilize educational programs designed to alter consumer behavior or any other measures that can reasonably be used to meet the goals set forth in subsection (2).

(b) Propose to the commission measures that are designed to meet the goals set forth in subsection (1) and that provide additional customer benefits.

(5) Expenditures under subsection (4) shall not exceed 3% of the costs of implementing the energy optimization plan.

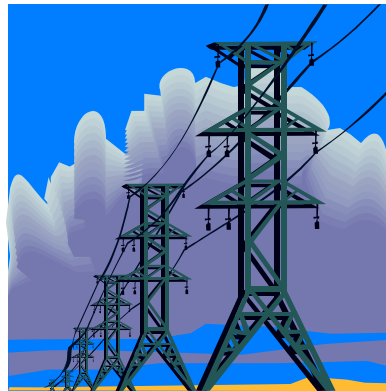
Commission Review of Utility Plans:

- Sec. 73. (1) A provider's energy optimization plan shall be filed, reviewed, and approved or rejected by the commission and enforced subject to the same procedures that apply to a renewable energy plan.

(2) The commission shall not approve a proposed energy optimization plan unless the commission determines that the EO plan meets the utility system resource cost test and **is reasonable and prudent**. In determining whether the EO plan is reasonable and prudent, the commission shall review each element and consider whether it would reduce the future cost of service for the provider's customers. In addition, the commission shall consider at least all of the following:

- (a) The specific **changes in customers' consumption patterns** that the proposed EO plan is attempting to influence.
- (b) The cost and benefit analysis and other justification for specific programs and measures included in a proposed EO plan.
- (c) Whether the proposed EO plan is consistent with any long-range resource plan filed by the provider with the commission.
- (d) Whether the proposed EO plan will result in any unreasonable prejudice or disadvantage to any class of customers.
- (e) The extent to which the EO plan provides programs that are available, affordable, and useful to all customers.

Efficiency Utilities, Capacity Credit, and other Mechanisms



Efficient Utilities:

- Today Efficient Utility's accent is on efficiency and the economic advantages to be had from making improvements.
- In early days of energy efficiency, emphasis was placed on conservation and was much more limited.
- Should the utility be able to earn the same amount for saving a watt as they would for generating a watt?

Utility EO Programs

- Over the next 3 years, \$407 million in ratepayer funding will be available to fund energy optimization programs in Michigan, plus all Michigan utilities have agreed to coordinate EO Programs with *Michigan Saves* financing.
- It's estimated that for every \$1 spent on energy optimization programming, customers will realize \$3 in avoided energy costs.
- Participating customers save even more.
- Over the next 3 years, energy optimization savings will amount to \$1.2 billion.
- Approximately \$71 million is set aside for low income residential programs, in addition to MPSC LIEE Fund.

Utility EO Programs

- Though there are 63 different plans, they are all very similar in the kinds of incentives offered to customers.
 - 10 U.P. municipals jointly designed a common program.
 - 30 municipals adopted a common template for the design of their EO programs.
 - 11 utilities have elected the state-selected administrator to run their program.
 - All electric cooperatives except Bayfield jointly designed a common EO program.

Utility EO Programs

- Residential EO programs are generally offering incentives (rebates or buy-downs) for:
 - Efficient Lighting (CFLs and Energy Star fixtures)
 - Energy Star Appliances
 - HVAC and water heater upgrades
 - Home energy audits & weatherization (comprehensive: insulation, CFLs, thermostats, windows, duct sealing, appliances, etc.)
 - Multi-family building upgrades
 - Appliance recycling (e.g. refrigerators)
 - New construction (Energy Star Homes)
- Will also include educational & some pilot programs

Utility EO Programs

- Commercial and industrial EO programs include:
 - Prescriptive programs
 - Rebates for common upgrades to lighting, controls, HVAC, chillers, water heating, motors, freezers, ovens, food-prep equipment, clothes washers, ice machines, pipe wrap, etc.
 - Custom programs
 - \$/kWh saved or \$/MCF saved for energy saving improvements to manufacturing processes or facilities not covered under prescriptive programs.
 - Detroit Edison & MichCon and Consumers are both offering \$0.08/kWh and \$4/MCF (subject to terms).

Utility EO Programs

- Commercial & Industrial EO programs may also include:
 - RFP programs
 - A limited-time program to targeted customers solicited by the utility for larger, bundled projects that may include both prescriptive and custom measures.
 - New Construction
 - Incentives to go above and beyond code compliance
 - Pilot programs
- EO programs do not include: fuel switching, on-site generation, peak shifting, or non-capital expenditures.

Utility Provider Programs

Consumers Energy

- **Goals**
- Electric savings goals begin in 2009 at 0.30% of sales and ramp up to 1.0% of sales in 2012. Continue at 1.0% until 2015 when requirements are reviewed.
- Gas savings goals begin in 2009 at 0.10% of sales and ramp up to 0.75% of sales in 2012. Continue at 0.75% until 2014 when requirements are reviewed.
- Plan provides 1,611,818 MWh, 286MW, and 8,870,955 Mcf of savings over the 6 year timeframe.
- \$508 million investment proposed
 - \$12.8 million on low income over 6 year period
- UCT total = 3.5

- **Program Summary**
- Design and implement residential programs to all customer classes including low income.
 - Efficient products (lighting, appliances, HVAC,WH)
 - Comprehensive homes (low income weatherization, multifamily direct install, existing home retrofit, new construction)
 - Appliance recycling
 - Energy education for 4th through 6th grades
 - Residential pilots
- 4 business programs offered.
 - Comprehensive business solutions
 - Custom business solutions
 - Small business direct install
 - Business pilots

DTE and MichCon

- **Goals**
- Detroit Edison targets start at 146 GWh and reach 334 GWh by 2011.
- Detroit Edison will spend \$13.6 million in the first 3 years on low income.
- Detroit Edison will spend \$94 million on residential and C&I customers in the first 3 years.
- MichCon has a budget of \$55.8 million for all customer classes including low income.

- **Program Summary**
- Design and implement residential programs to all customer classes including low income
 - Energy Star (CFL, appliances, recycling)
 - Weatherization (LI)
 - Multifamily
 - New construction
 - Furnace, A/C upgrades
 - Neighborhood redevelopment (LI)
 - Collaboration with community based organizations (LI)
- Business programs offered
 - Prescriptive
 - Custom
 - New construction
 - RFP
- Pilot and education
 - 3% Pilot spend
- 5% Education spend

Cost to Customers:

		Consumers Energy	DTE
Residential		0.00143	0.001283
C&I Secondary			
	Small	0.96	0.3
	Medium	5.38	1.75
	Large	32.27	7.61
C&I Primary			
	Small	2.99	35
	Large	422.23	350.12

Investor-owned Retail Rate-Regulated Utilities

- All have elected to sign at least a two (2) year contract with the State Selected Administrator, when this individual/organization is chosen.
- Those companies with Self-Directed customers have subtracted those revenues from their EO targets. Self-Directed customers will send low-income program surcharges directly to the state administrator.
 - Electric and Gas spending limit calculations are based on Section 89 of PA 285 of 2008):
 - 2009 0.75% of total retail sales for 2007
 - 2010 1.0% of total retail sales for 2008
 - 2011 1.5% of total retail sales for 2009
 - 2012 and each year after: 2% total sales revenue of preceding 2 years

Retail Rate-Regulated Rural Electric Cooperatives

- With the exception of Bayfield Electric Cooperative, all Co-ops have engaged a third party for design and development of a shared Energy Optimization program.
- Total program revenue calculations will be based on Section 89 of 2008 PA 295 the above schedule and the surcharge will be collected from customers based on a volumetric surcharge (residential) or per meter (primary and secondary customers).
- Bayfield will contribute revenue to a State Selected Administrator in order to fulfill its energy optimization obligations.

Municipalities, Alternative Energy Suppliers, and Member-Regulated Electric Cooperatives

- **Municipal Utilities**

Municipalities have based their Energy Optimization programs on industry “best practices” taking into consideration Utility System Resource Cost Test (UCT) and Cost of Conserved Energy (CCE).

- **Alternative Energy Suppliers (AES)**

AES are not required to have Energy Optimization Plans under U-15800

- **Member-Regulated Electric Cooperatives**

At this time, no cooperatives have elected to become member regulated under 2008 PA 167 MCL 460.31 et seq.

Section 75 of PA 295: Incentive Mechanism

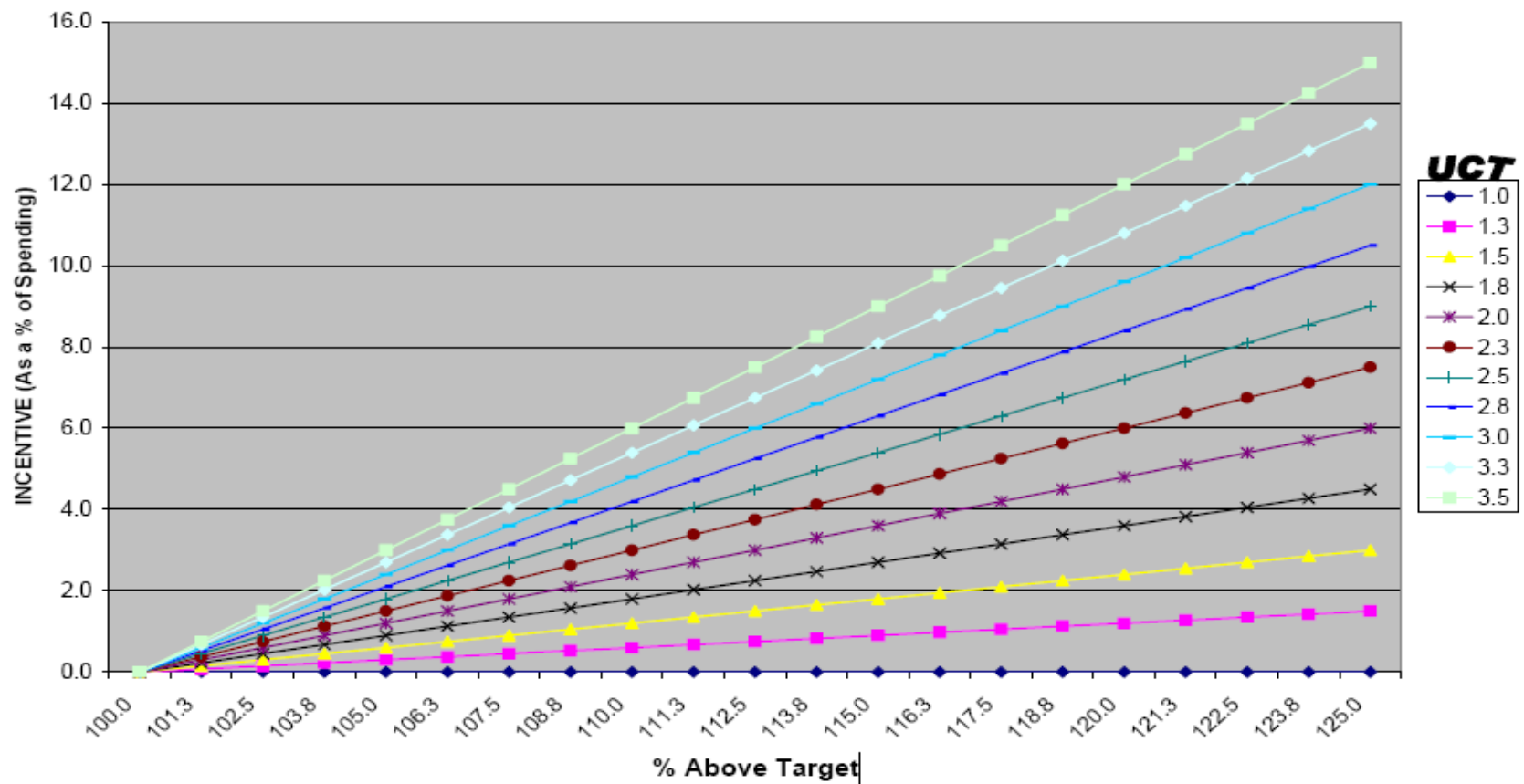
- **Sec. 75.** An energy optimization plan of a provider whose rates are regulated by the commission may authorize a commensurate financial incentive for the provider for exceeding the energy optimization performance standard.

Payment of any financial incentive authorized in the EO plan is subject to the approval of the commission. The total amount of a financial incentive shall not exceed the lesser of the following amounts:

- (a) 25% of the net cost reductions experienced by the provider's customers as a result of implementation of the energy optimization plan.
- (b) 15% percent of the provider's actual energy efficiency program expenditures for the year.

Performance Incentive Mechanism

Energy Optimization Program
Staff Recommended Incentive Mechanism



Schools Renewable Energy Program

- In April 2009, the Michigan Public Service Commission awarded Michigan Energy Efficiency grants totaling \$5,500,000 from the Low-Income and Energy Efficiency Fund to three organizations:
 - Elkton-Pigeon-Bay Port Laker Schools
 - Great Lakes Energy Service
 - Recycle Ann Arbor (d.b.a. Energy Works Michigan)

***Program summaries & contacts on next slide
- Through these grants, funding opportunities are available to schools statewide for the installation and operation of small scale, on-site renewable energy systems and energy efficiency upgrades.

Renewable Schools (cont.)

- **Elkton-Pigeon-Bay Port Laker Schools (\$1,000,000)** – create renewable energy programs at up to 15 Michigan career-technical schools. Installation and instruction for wind, solar, biofuels, biomass, weatherization, green building, and more. These schools then become renewable energy demonstration sites with resident experts to further educate the local communities.
- **Great Lakes Energy Services (\$1,000,000)** – conduct energy audits, install renewable energy and energy efficiency technologies, and provide associated learning tools; increase consumer awareness and education concerning energy and money savings associated with renewable systems.
 - www.greatlakesenergyservice.org
- **Recycle Ann Arbor (d.b.a. Energy Works Michigan, \$3,500,000)** – renewable energy and energy efficiency upgrades to schools throughout the state through a renewable energy program, an energy efficiency program, and a post-secondary curriculum program.
 - www.energyworksmichigan.org

Renewables for Local Governments

- In April 2009, the MPSC issued RFP for up to \$8,500,000 for projects that will facilitate successful installation and operation of small scale, on-site renewable energy systems and energy efficiency upgrades at multiple Michigan local government facilities.
- Proposals currently being reviewed. Order awarding grants anticipated in August or September 2009.

Michigan Saves

- *Michigan Saves* System a statewide innovative, energy efficiency and renewable energy financing system which requires no money down and monthly payments on utility bills for all utility customers (commercial, industrial and residential).
 - Market-based... no theoretical limit to total investment
 - Off balance sheet financing
 - Obligation to pay only as long as customer is saving
 - Vendors must warranty equipment for duration of payback period
- \$8.1 million grant to Public Sector Consultants (Lansing)
 - \$6 million to serve as a guarantee fund for the financing

Energy Markets & Utility Trends for Efficiency and Demand Response

- Natural gas prices have accelerated rapidly in recent years.
- Coal creates concern regarding greenhouse gas emissions. Many proposed plants have been cancelled. Potential future carbon reduction measures increases risk.
- Nuclear has many regulatory and technical issues.
- Wind and other renewables are not as competitive with other sources of generation. Variability of generation requires firming of resources.

Citations:

- <http://www.legislature.mi.gov/documents/2007-2008/publicact/pdf/2008-PA-0295.pdf>
- Aligning Utility Incentives with Investment in Energy Efficiency, A Resource of the National Action Plan for Energy Efficiency, Nov. 2007
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- www.michigansaves.org