July 18, 2006

The Honorable Jennifer Granholm
Governor of Michigan

Peter J. Lark
Chairman, Public Service Commission

Dear Governor Granholm and Chairman Lark:

We commend you for calling for a 21st Century Energy Plan, and want to say how pleased we are that a renewable portfolio standard will be part of that plan. We are especially gratified and heartened that the Executive Directive emphasized planning for "reliable, safe, clean, and affordable supply of energy for Michigan's future." This letter provides our suggestions for how to meet this goal.

Michigan needs to take control of its energy future. Instead of spending nearly $20 billion a year importing dirty, expensive non-renewable energy, we can act now to create a smarter energy future for Michigan by investing in homegrown energy efficiency and renewable energy sources such as wind power. Energy efficiency and the development of Michigan's renewable energy resources will keep money in Michigan's economy, create thousands of jobs, directly and positively impact electricity and natural gas prices, clean our air and water, reduce global warming pollution, and give us a reliable, renewable source of energy. This should be the core strategy for Michigan's long-term electricity needs.

Michigan cannot afford to expend limited resources building new coal-fired (or nuclear) power plants, rather than recognizing our vast potential for tapping the cleanest, most reliable, and safest resources – energy efficiency and renewable energy. Building new coal plants in particular is a 19th Century solution to our electricity needs, not a plan for the 21st Century.

Therefore, to make a truly visionary, effective energy plan appropriate for the 21st Century, we ask that it include the following crucial elements:

1. A strong Renewable Portfolio Standard that captures all future growth in electric generation capacity. The standard should set a minimum binding target of 20% clean, renewable energy by 2020, including wind, solar, clean biomass and landfill gas. This will require binding targets leading up to 2020 and the targeted use of tax incentives, removal of barriers to renewable energy development, and a set of standard offer contracts for electricity produced from renewable sources.

2. An immediate restarting of Michigan utility energy efficiency programs, with a secure funding mechanism (such as a system benefits fund) and specific targeted reductions to assure that energy efficiency will be fully integrated as a utility system resource. Since efficiency programs can save electricity at half the cost of building, fueling and operating a new power plant, energy efficiency should be Michigan's top priority electric resource.

3. A strategic incorporation of other important energy efficiency policies, including appliance efficiency standards legislation; updating building codes; and implementing the Economic Development & Growth through Energy Efficiency (EDGE2) recommendations. The plan should prioritize better alignment of energy market signals with public goals that include energy efficiency and healthier air; for instance, Michigan should explore ways to decouple utility company profits from energy sales revenue.

4. Consideration of new baseload coal or nuclear facilities only as a last resort option after maximizing energy efficiency and renewable energy generation. Michigan should not allow any new coal or nuclear facility to be built unless all the costs – including societal cost of global warming and public health and the probable cost of additional pollution control requirements – are fully considered when utility investment decisions are made. Moreover, new baseload generation should not unduly burden customers or taxpayers.

5. An overhaul of the model for projected demand and economic impact used in the Capacity Needs Forum (CNF) report. The 21st Century energy plan originally relied on the assumption of 2% annual electricity demand used in the CNF report. This assumption, which is at the heart of the conclusion that Michigan requires new coal plants, must be revised from the ground up, given the new demand projections of approximately 1% growth per year. Moreover, the CNF focused only on price per kilowatt-hour and ignored the environmental, health and larger economic effects of various means of producing power. It ignored the many surveys indicating strong public support for renewable energy (even at higher prices) and it ignored the improved reliability and safety that results from reducing energy usage and relying on smaller, distributed power sources. Therefore, the model overemphasized coal and underemphasized energy efficiency and renewable energy, and cannot form a basis for a 21st Century energy plan.

Michigan's energy future is at a crossroads. We can continue to follow our current energy path where ever-increasing demand leads to ever-increasing reliance on fossil fuels and nuclear power with mounting economic, environmental and health consequences. This leads to a future in which Michigan's homes and businesses spend more than is needed on energy, Michigan's energy dollars continue to pour into other states and countries to pay for our imported energy fuels, and tremendous economic growth opportunities related to clean energy remain untapped. Or, Michigan can move toward a new, smarter energy future. This future conserves energy, uses it efficiently and relies on indigenous resources, thus investing in our state's economy, saving money, protecting the Great Lakes and our air quality, and decreasing demand for more energy. We hope and expect that the 21st Century Energy Plan will include our suggestions, which have strong public support, and move Michigan in the right direction.

Michigan cannot afford to wait any longer to begin serious work on a smarter, cleaner, and lower-cost energy future.

Sincerely,

Mike Shriberg, Ph.D.
Director, **Environment Michigan**

David Pettit
Consumer Advocate, **PIRGIM (Public Interest Research Group in Michigan)**

Martin Kushler, Ph.D.
Director, Utilities Program, **American Council for an Energy-Efficient Economy**

Patty Gillis
Coordinator, **MI Interfaith Climate and Energy Campaign/Voices for Earth Justice**

Ken Dahlberg
Michigan Land Trustees

David Gard
Energy Program Director, **Michigan Environmental Council**

Aileen Gow
Executive Director, **Urban Options, Inc.**

Tom Bissonnette MS, RN
Executive Director, **Michigan Nurses Association**

Rev. Charles M. Morris
Director, **Michigan Interfaith Power & Light**

Charles Griffith
Auto Project Director, **Ecology Center**

Anne Woiwode
Director, Michigan **Sierra Club**

Jennifer Alvarado
Executive Director, **Great Lakes Renewable Energy Association**

David Holtz
Director, **Clean Water Action, Michigan**

Zoe Lipman
Program Manager, **National Wildlife Federation, Great Lakes Office**

CLARK HILL
PLC
ATTORNEYS AT LAW

255 S. Old Woodward Avenue
Third Floor
Birmingham, Michigan 48009-6179
Tel. (248) 642-9692 ▮ Fax (248) 642-2174
www.clarkhill.com

Robert A. W. Strong
Phone: (248) 988-5861
E-Mail: rstrong@clarkhill.com

July 19, 2006

Via Email Transmission: rgozar@michigan.gov

Rob Ozar
Regulated Energy
Michigan Public Service Commission
P.O. Box 30221
Lansing, MI 48909

Re: ***Energy Efficiency Initiative Strawman***

Dear Mr. Ozar:

On behalf of the Association of Businesses Advocating Tariff Equity (ABATE) I would like to comment on certain aspects of the Energy Efficiency Initiative Strawman which generally asks whether the state should embark upon a mandatory energy efficiency program funded by utility customers. ABATE members conduct their own internal energy efficiency programs through new production methods, the use of high efficiency electric motors, better insulation and heating and cooling equipment, etc. It would be economically inefficient for the state to impose added costs on this sector of the consuming public and would only make matters worse in terms of a high cost of energy paid by the industrial manufacturing segment. Michigan's rates for all electric service and for some gas service include subsidies which distort the price paid for energy. The Commission and its Staff should first and foremost focus on the elimination of these subsidies before embarking on expensive state supported energy efficiency programs.

One of the questions raised in the proposal is whether large energy customers should have an opportunity to opt out of the statewide energy efficiency program. The simple answer is "yes", because energy is a commodity for these customers and they have ample incentive to reduce the cost of energy by becoming more energy efficient. By and large, these customers do not benefit from energy efficiency programs, other than the ones that they conduct internally, so they should not have the added burden of paying for programs which primarily benefit other customer classes.

Other utility commissions have exempted commercial and industrial customers from participating in energy efficiency programs. For example, the Indiana Utility Regulatory Commission approved programs for PSI Energy, Inc. that did not include customers with

demands of more than 500 kW. *The Petition of PSI Energy, Inc. For Approval Of Modifications To PSI's Current Demand-side Management Programs And The Addition Of New Demand-side Management Programs*, Cause No. 42612, dated May 25, 2007. In this regard, the Indiana Commission stated as follows:

> "PSI and PSI-IG contended that these larger customers prefer to do DSM on their own using the deregulated energy efficiency market. PSI-IG, representing the larg e customers, also argued that to begin to charge such customers for DSM now would unfairly advantage customers who have not undertaken energy efficiency improvements, at the expense of those customers that have. We note that there is a deregulated energy efficiency market that targets these larger customers. We also note that utility funded DSM programs for such large customers could be expensive, and would require customized or self directed programs. We encourage the parties to pursue this issue further, but we agree with PSI-IG and PSI that for now, PSI's programs should be limited to C&I customers of 500 kW and below."

Id., p. 20.

Moreover, as energy becomes generally more expensive, there is ample evidence that all customer segments are reacting to market forces by conserving energy. The AGA has noted that the per household use of natural gas has been declining for in excess of 15 years and that the trend accelerated over the last couple of years. On the electric side, energy efficiency standards have been raised for appliances. As an example, air conditioning equipment built after January, 2006 must have an SEER of at least 13. All of this makes one wonder whether a state mandated energy efficiency program is warranted.

Another issue raised was whether the costs of any program should be allocated by rate class or by a uniform per-unit charge on all customers. Energy efficiency is primarily demand related and the cost of any program, if warranted, should be allocated to each class based upon the benefits to the class and not on a uniform per-unit basis. The cost of the energy efficiency program is really a tax in that it is a mandatory charge to support what is perceived as a social good. If applied at all, the tax should be allocated on the basis of the anticipated benefits for each class of customers.

Another important question is whether there should be "revenue decoupling trackers for utilities" to supposedly make utilities more indifferent to the implementation of energy efficiency programs. Trackers literally kill any incentive for a utility to become more efficient. Trackers may be good for commodities like coal, oil and natural gas, where cost is largely outside of the utility's ability to control. Trackers should not be used for other expenses such as pension expense, which is under the control of the utility. For example, pension expense has been under review in the private sector for a number of years and companies such as IBM are freezing their defined benefit plans and, instead, placing more funding responsibility on employees. If a pension tracker is in place, then the utility has absolutely no incentive to try to control pension expense by amending or freezing pension plans. ABATE members are very aware of the global

economy and the need to become more efficient in order to compete for business and retain jobs in Michigan. Trackers are not available in the competitive world in which they operate and they should not be implemented for utilities. Regulation is supposed to be a substitute for competition and competition clearly would not sustain trackers.

If a tracker is implemented, then the business risk of the utility will be greatly reduced. Consequently, in any review of the implementation of trackers, there must be a review of how the rate of return should be adjusted downward. A case can be made that if there is a total decoupling, then the utility has only a slight business risk, which would warrant a rate of return which is slightly in excess of the rate for long term Treasury bonds. Consequently, there must be attention paid to this aspect of ratemaking in any discussion of decoupling.

In closing, I suggest that the group carefully consider whether an energy efficiency program mandated by the state is currently needed or whether current market forces will provide enough incentive for customers to become more energy efficient. If efficiency education is needed, it is not needed for the industrial class, which has every incentive to try to reduce its manufacturing costs. Consequently, this class should definitely have the opportunity to opt-out of any state mandated program and avoid the burdensome and unnecessary costs associated with a program that will not benefit them. In sum, they cannot afford any unnecessary cost increases in energy when costs in this area seem to be dramatically rising.

Please feel free to contact me or let me know if there is a particular meeting I should attend to further elaborate on ABATE's view.

Very truly yours,

CLARK HILL PLC

Robert A.W. Strong

Digitally signed by Robert A.W. Strong
DN: CN = Robert A.W. Strong, C = US, O = Clark Hill
Date: 2006.07.19 15:40:58 -04'00'

Robert A.W. Strong

cc: Pat Poli- ***pmpoli@michigan.gov***
/ag

5295811v.1 07411/058110

Consumers Energy

Count on Us

21st Century Energy Plan
Energy Efficiency and Load Management
Straw Model Principles

July 20, 2006

Context

These straw model principles should not be considered in isolation. They need to be part of a comprehensive package that addresses not only energy efficiency and load management but also renewable energy and the construction of additional generation capacity.

Energy Efficiency (EE) Programs

Energy Efficiency Program Principles

- **Management and administrative efficiency as well as trade ally participation can best be gained through statewide programs.**
- **Programs will be selected and administered by a non-profit corporation that will be governed by a quasi-independent board.**
- **Funding will be derived from a system benefits surcharge that is volumetrically based and is set to generate funding equivalent to no more than 1% of annual electric utility revenues.**
- **All customers of all LSEs, including co-ops and municipals, will pay this surcharge. However, large industrial customers will be allowed to opt out of this surcharge if they invest an equivalent amount of money in their own customized energy efficiency measures.**

Energy Efficiency Program Principles (Cont'd)

- **Programs will be selected based upon a thorough review of what has been working well with proven results in other states.**
- **Programs will be created for all customer classes, and funding will be distributed proportional to the surcharges collected from each class.**
- **The portfolio of programs implemented must deliver energy efficiency at an "all in" cost per conserved kWh that is lower than available supply options.**
- **The inherent disincentive for utilities to promote such programs will be removed. Utilities will be sheltered from prudency risk for implementing energy efficiency programs.**

Energy Efficiency Program Principles (Cont'd)

- **Utilities will not be required to make any additional energy efficiency investments when seeking to build new generation or transmission capacity.**
- **Legislation will be passed that codifies all the key elements of this model.**
- **A similar model should be created for natural gas efficiency programs.**

Demand and Price Response Programs

Demand and Price Response Program Principles

- **Capital-intensive programs and technologies will be developed, administered, and controlled by each utility.**
- **Programs and technologies related to operating equipment or electric supply, such as AC load control, will be managed by the utility.**
- **Costs for demand response programs will be capitalized and become part of the rate base upon which utilities shall earn their authorized rate of return.**
- **Any proposed demand response program will first be piloted with a statistically representative sample of customers to test its effectiveness and program characteristics.**
- **Pricing mechanisms will be established through an MPSC-approved process.**

21st Century Energy Plan

Energy Efficiency

Program & Administration

Detroit Edison Strawman

21st Century – Energy Efficiency Strawman

Overview

- Energy Efficiency, including Demand Response, Load Management, and Price Options are part and parcel to the passage of comprehensive Michigan Energy Plan Legislation.
- A true statewide Energy Efficiency Plan requires participation by all Michigan electrical distribution company's to provide standardized programs and funding for all consumers.
- Appliance efficiency standards for appliances sold in Michigan is needed to avoid having manufacturers use Michigan as a dumping ground for low efficiency products. Similar bills exist in several states including Maine which recently passed LD2041 for this explicit reason.
- Programs established for Michigan need to recognize the costs & time requirements of customer education as part of the comprehensive plan.
- Efficiency Program design should provide enough flexibility to allow LDC's to implement programs within their service territory that fulfill the needs of their customers and have a high take rate probability.
- Program funding via a non-bypassable surcharge for all customers, who take electric service in the State of Michigan and have a annual maximum demand less than xx kW (demand value to be determined).
- LDC branding rights should be retained within respective service territories.
- Promotes load management and rate development that includes price signaling as detailed in the Demand Response Strawman.
- Rate decoupling remains an open issue requiring additional study.

21st Century – Energy Efficiency Strawman

Non-bypassable Customer Charge

- Program funded by non-bypassable surcharge for all customers with annual maximum demand < xx kW taking electric distribution service in Michigan.
  - Customers above xx kW typically have instituted energy management measures
  - Surcharge applicable to all electric distribution company's (IOU's, Municipalities, Co-ops)
  - Maximum demand value yet to be determined

- Appropriate funding level (mills/kWh) needs to be determined, but overall rate impact and cross class subsidy should be taken into consideration.

- Surcharge collected by LDC's
  - funds the LDC program
  - ensures collection from all customers

21st Century – Energy Efficiency Strawman

Sustainable Programs with True Cost Benefit

- To avoid increased administrative costs, programs should provide benefits that are self evident.
- Cost-effectiveness of program offerings should be measured versus incremental new capacity and energy.
- Both Programs (i.e. Home Energy Audits) and Measures (i.e. replacement windows, increased insulation) should be evaluated independently for cost-effectiveness.
- Education and information cannot pass cost/benefit test independently and therefore should be reviewed holistically with associated measures.
- Cost/benefit tests should be appropriate to the life of the measures and should be based on a longer-term technique such as life-cycle costs versus simple payback.
- Program measurement, when practical, should rely on stipulated savings, or have demonstrated clear benefits in programs offered in other states (i.e. do not require costly/time consuming evaluation of cost/benefit).

21st Century – Energy Efficiency Strawman

Providers manage own Service Territory Program

- Each LDC should be held responsible for program development/implementation/management of programs offered within their service territory.
- Provider has the option to manage the program in-house or sub-contract.
- LDC is best equipped to handle the needs of their customers and protect provider/customer relationship.
  - Communication through monthly bills
  - Well equipped to send price signals (TOU, Interruptible rate offerings)
  - Understand customer usage patterns
  - Can leverage existing and future technologies within the specific LDC (AMR, Smart Metering)
  - Program/customer education
- Remain open to third party fulfillment of program measures
- LDC's should participate in pilot program development and assist customers in their energy efficiency decision making
- LDC's should develop Pricing Options to promote and incentivize customer behavior aligned with the Energy Efficiency Program Goals.

21st Century – Energy Efficiency Strawman

Program Administration

OPTION I

- Model after Wisconsin program with each LDC responsible for their service territory program development and implementation.
- Legislate that a third party, non-profit organization be established as the overall administer of a state wide Energy Efficiency Program.
  - Develops administrative rules
  - Identifies and evaluates programs/measures for state use
  - Evaluates reports of states LDC's
  - Provides annual report of activities
- Managed by a board represented by IOU'S, Municipalities & Co-ops, MPSC, and advocacy groups. Parties who might profit from program are excluded from board representation.
- Legislation permitting third party must contain sunset provision.

OR

OPTION II

- MPSC provides program oversight including monitoring compliance and affect of statewide program.
- MPSC already has an established relationship with all parties and understands the needs of the state and desires of the legislature.
- Capable of providing consistent oversight.
- Minimizes program administrative cost.
- Provides continuity between all 21st Century Initiatives.

21st Century – Energy Efficiency Strawman

Legislative components

- Program funding via a non-bypassable surcharge of xx mills/kwh.
- Mandatory participation for all LDC's with funding from all customers under xx kW annual maximum demand taking electric service in the state (maximum demand value to be determined).
- Program oversight assigned to either an independent third party administrator managed by a board of directors representative of the participating parties or the MPSC.
- Promotes load management and rate development that includes price signaling.
- Recognizes the inherent costs and benefits of energy education and the difficulty to quantify.
- Provision for cost recovery of customer education and pilot program development, implementation and evaluation included in non-bypassable surcharge.
- Part of a comprehensive 21st Century energy bill including Capacity Need, Renewable Energy Sources, Energy Efficiency, Demand Response and Load Management.
- Assign LDC's the responsibility to:
  - Promote rate options focused on energy efficiency
  - Leverage innovations in technology including metering and price signaling equipment
  - Develop and implement load management programs

21st Century Energy Plan

Demand Response

Detroit Edison Strawman

21st Century – Demand Response Strawman

Overview

- Demand Response and Load Management support the overall Energy Efficiency Program and are part and parcel to the passage of comprehensive Michigan Energy Plan Legislation.
  - Demand Response: The customer voluntarily responds to a load reduction signal from the LDC.
  - Load Management: A rate option selected by a customer offering a financial incentive in exchange for load reduction (normally via interruption) at the request/control of the LDC.
- The current Michigan situation suggests that a Demand Response program include a long and short term strategy.
  - Short Term – the immediate concern for Michigan is meeting the summer peak demand created by extreme high temperatures. Although power purchases from outside the state often mitigate this problem, Michigan resources alone are relied on during periods of regional high demand periods. Load Management Program development can provide system managers the tools required to avoid brownout/blackout problems already seen in other states.
  - Long Term – Rate options including Time-of-Use and Real Time Pricing may have the capability to shift demand and energy use to off peak periods and work hand-in-hand with long term energy efficiency measures to reduce the state's energy consumption. Pilot programs need to be developed to measure consumer response and actual savings to programs that offer pricing signals and incorporate Smart Metering and/or other means of communicating price and peak demand periods to end users.
- Care must be taken during pilot program and technology evaluation so that the costs of future offerings provide a true cost benefit to the states consumers over and above the benefit of having adequate and reliable Michigan energy.

21st Century – Demand Response Strawman

Overview - continued

- A permanent and comprehensive load management program is needed for the State of Michigan that recognizes the need to focus load management on customer classes contributing to the states peak demand periods. This places the immediate focus on the 30-40 annual hours of extreme need for load reduction.
- LDC's should develop load management programs with recognition that no single program fits the needs or capabilities of all LDC's.
- New load management development and demand response pilot programs should be funded with a non-bypassable surcharge.

21st Century – Demand Response Strawman

Demand Response Costs

- Each demand response program requires careful measurement of the true benefit versus the costs. The cost effectiveness of program offerings should be measured versus incremental new capacity and energy.

- Education will likely be the key success driver to both Demand Response and Energy Efficiency programs. Development of effective customer education programs will be necessary before informed decisions can be made by customers. The high cost of customer education must be recognized and addressed as part of the comprehensive energy plan.

21st Century – Demand Response Strawman

Existing Programs at Detroit Edison & Effect

- Residential Time of Use – This on/ off peak rate offering has been available for several years. The rate is currently being promoted by Detroit Edison with approximately 8,000 active customers.
- Commercial Time of Use – Accepted by very few customers. May be an hours of operation issue or there is a cost to participate for businesses to shift load which may be cost prohibitive.
- Interruptible Air Conditioning – exceptionally successful program offering customers a cost per kWh savings in exchange for the ability to interrupt during peak demand periods. Program experienced a high annual growth rate when promoted by heating and cooling contractors. Program is a cycling program which permits the air conditioning unit to continue to cool the residence with only a 2-3° increase in temperature. Provides system integrity advantage and has achieved a high customer satisfaction rating.
- Commercial Interruptible Supply Rate – Customers receive, whenever possible, an advanced notice of possible interruption along with an estimated duration of the interruption. Customers who do not interrupt within one hour are charged for the cost of replacement energy plus an additional charge for failing to comply. In return, the customer pays a reduced energy and demand charge.
- Industrial Interruptible Supply Rate – Customers receive both real time pricing, and whenever possible, an advanced notice of possible interruption. In return customers pay a reduced rate from that of non-interruptible service.

21st Century – Demand Response Strawman

Possible Pilots

The following represent possible pilot projects that may facilitate load management, load shifting and/or energy savings.

- Peak Period Pricing Program – Similar to Time-of-use rates but includes four daily price periods: Off peak, On-peak plus morning and evening shoulder peak hours
- Summer/Winter rate – aligns pricing with peak demand and energy periods
- Real time pricing – Informs customer of current kWh price via electronic signaling allowing customer to make informed energy use decisions based upon price.
- Interruptible programs for appliances other than CAC – Investigate the expansion of interruptible programs to appliances contributing to peak demand periods. Although most appliances other than air conditioning are unlikely to produce significant load reduction, appliances that may be considered are: dehumidifiers, ceiling fans, and pool filters.
- Commercial lighting program or education to convert lighting to higher efficiency equipment
- Higher efficiency appliance replacement program – Appliance replacement programs for refrigeration and water heating have proven successful in other states.
- Commercial off peak air conditioning technology – Programs exist in western states that use off-peak energy to create ice storage systems used in place of high demand air conditioners for peak period cooling.
- Commercial refrigeration efficiency programs – Grocery and 24 hour multi purpose stores, such as Meijer, use open display cases for frozen meats, dairy products, etc., that are inefficient energy devices. Investigate energy efficient alternatives including enclosed displays.

21st Century – Demand Response Strawman

Smart Metering & Technology Utilization

Leverage new technologies where applicable and when technology provides a true cost benefit.

SMART METERING

- Definition – Smart Metering refers to the installation of electric meters capable of accepting a variety of intelligent internal software microchips allowing the meter to collect and communicate a multitude of electronic data to and from the with the host Local Distribution Company utilizing two way communication.
  - For LDC's, without fully implemented AMR, requires installation of communication technology with the meter (cellular, broadband, etc.)
  - Although this is the technology of the future and should be thoroughly researched, the current cost and lack of LDC infrastructure may make smart metering alternatives cost prohibitive in the short term.

TECHNOLOGY UTILIZATION

- Efficient Load Management and Demand Response programs will require the use of new and developing technologies to create cost efficiencies as well and energy efficiencies.
  - Load management interruption switches and signaling capabilities currently exist within Detroit Edison but may not exist at all LDC's. However, interruptible thermostats and radio control devices currently exist within the industry.
  - Communication with LDC equipment and end use customers is required for sending price signals and collecting customer usage data. The utilization of shared phone line, cellular telemetry, BPL, internet sites, email, and customer site price signaling devices needs to be studied as part of the pilot program initiative.
  - The Demand Response workgroup should work in concert with the Alternative Technology group to identify and test technologies that will lower cost and promote load management and demand response programs.

INTER

OFFICE

MEMO

Energy Office **Department of Labor & Economic Growth**
P.O. Box 30221, Lansing, MI 48909 **Telephone: 517/241-6280 Fax: 517/241-6229**

To: Rob Ozar, Pat Poli
From: John Sarver
Subject: Energy Efficiency Proposal
Date: July 20, 2006

Energy efficiency is the most flexible and cost effective resource available to us to meet future electric needs. Energy efficiency reduces customer energy costs, reduces air pollution, reduces the energy dollar drain out of our state, increases the diversity of our energy resources, and reduces the risks associated with the impact of future climate change and environmental public policies on fossil fuel costs.

The 21st Century Energy Plan should therefore include an energy efficiency program proposal that includes the following elements:

- Program services for all customer classes
- Program services that include consumer education, training and technical assistance, and financial incentives
- Program services that are targeted at the most cost effective measures
- Administration by an independent, non-profit organization
- Funding through a non-bypassable charge on utility bills

Program Services

All customer classes should pay for energy efficiency program services because they all receive significant environmental, economic development, resource diversity, and risk minimization benefits from these programs. Since not all customers are tuned into societal benefits that they receive, it is also advisable to make program services available to all customers so that they can receive direct economic benefits from reduced energy costs.

Program services should include consumer education, training and technical assistance, and financial incentives. These services complement each other and as a package provide maximum benefits. Consumer education, training, and technical assistance are relatively inexpensive and make it possible for consumers to capture many low-cost, cost-effective energy savings. Many of these energy savings are from smarter ways to operate and maintain buildings and equipment. Turning down temperatures in unoccupied spaces, shutting off unneeded equipment, scheduling equipment to reduce peak electric use, keeping filters clean, etc. – all these and more can be

achieved by consumer education, training, and technical assistance.

Not everyone will read brochures and manuals, attend workshops, or request an energy audit. Financial incentives are needed to motivate many consumers and to provide a more attractive energy efficiency investment. Rebates for energy efficiency measures have proven to be very effective because they are relatively easy to administer and provide certainty to the consumer that financial assistance will be received if certain eligibility requirements are met.

Education services and financial incentives do complement each other to maximize energy savings. Consumer education, training, and technical assistance can capture low-cost, cost-effective energy savings, but these education services can also help consumers make wise energy efficiency investment decisions so that benefits from incentive dollars are maximized.

Program services should be targeted at the most cost effective measures. There are many widely applicable, cost-effective measures available to every customer class. An analysis should be done to identify these measures. Many energy efficiency measures will be shown to be very cost effective, e.g. commercial building lighting measures, industrial motor and pump measures, compact fluorescent bulbs in homes and commercial buildings. The analysis should compare the costs of energy efficiency programs to the costs of traditional generation resources, but the environmental and economic benefits of energy efficiency should be considered in the analysis.

While some program services need to be available to all customer classes, cost effectiveness should dictate how many different program services are offered. At a minimum, consumer education or training or technical assistance and one or more financial incentive programs should be available to each customer class, i.e. residential, commercial, and industrial.

Program evaluation is critical to determining what is working and what is cost effective. While experiences from other states can give us a solid foundation to begin providing program services, program evaluation studies will make it possible to fine tune programs and maximize energy savings.

Administration

Administration by an independent, third-party organization or organizations has a number of advantages:

- Programs can be uniform statewide making it easier to communicate program information and making it easier for consumers to understand program information.
- Eligibility criteria can be uniform statewide avoiding criticisms of unfair treatment.
- Economies of scale can be achieved by the statewide organization(s).
- Statewide energy efficiency organization(s) would be focused on a core mission of delivering energy efficiency programs. Businesses focused on “energy sales” would not be asked to reduce “energy sales” by having to promote energy efficiency to customers.
- Municipal utilities could voluntarily buy into a statewide program and make energy efficiency programs available to their customers. This should be administratively easier and less expensive than stand-alone programs.

While it is recommended that most programs be administered by a statewide energy efficiency organization, there may be some exceptions. There may be some programs, e.g. load management programs, where utilities are the best choice for program administration because of their expertise and the type of program.

It is recommended that the MPSC select through a competitive process one or more non-profit organizations to administer energy efficiency programs statewide. Non-profit is recommended for cost reasons. It is recommended that the solicitation break up the program administration into the residential, commercial, and industrial sectors. The solicitation would identify the specific program services that will be delivered and proposed budgets for each sector.

Applicants would be able to bid on one or more of the sectors. This approach would provide flexibility to the MPSC. There may be a non-profit organization that can do administration for all program sectors and this approach would still make that possible. If there are different organizations best suited to serve different customer classes, that can be the result of this more flexible approach.

The energy efficiency organization(s) would be given statewide responsibilities to directly implement programs, contract with other non-profit and private organizations to deliver program services, or implement a combination of the two approaches. The MPSC would select different organizations to conduct program evaluation and financial management functions. The financial manager would review and process payment requests from the energy efficiency organization(s) and authorize payment from an energy efficiency charge bank account. MPSC staff would be responsible for conducting annual program and financial audits of the energy efficiency organization(s), the program evaluator, and the financial manager. MPSC would have the option of renewing or not renewing the organization mandates.

Funding

A non-bypassable charge on all utility bills should be used to fund the Michigan energy efficiency programs. A 1.0 mills/kWh charge would provide approximately $100 million per year for energy efficiency programs. Dr. Martin Kushler, American Council for an Energy Efficient Economy, has recommended this level based on an extensive analysis of utility energy efficiency programs across the country. The recommended level is based on 20 states with restructuring related funding for energy efficiency programs. The 1.0 mills/kWh is the median for the 20 states.

Energy Office Programs

The Energy Office provides a variety of education, training, and technical assistance programs to promote energy efficiency and renewable energy resources. Because of limited funding, Energy Office financial incentives have been short-term and targeted, e.g. a 2005 rebate program for solar hot water systems. The Energy Office has a great deal of flexibility related to the types of programs we offer. Many Energy Office programs, e.g. alternative fuels for vehicles and renewable energy resources, would not be included in a utility customer, energy efficiency

program. Many of our other programs can be used to complement, support, and promote a utility customer, energy efficiency program. For example, a new Green Lodging Michigan program which will certify "green" hotels and motels can be used to promote new training and technical assistance services and financial incentives. Once utility customer, energy efficiency programs are developed, the Energy Office can adjust our programs to avoid any duplication of effort.

Thank you for this opportunity to provide input to the 21st Century Energy Plan.

Ferris State University
Energy Efficiency Center

Ferris State University proposes the creation of an Energy Efficiency Center which would involve Ferris student and faculty in offering a number of Energy Efficiency Services for residential as well as commercial facilities. Ferris would start with energy efficiency improvement assessments of residential dwellings as well as commercial buildings. Ferris has shown through initial calculations that efficiency improvements of at least 14% are pretty easy for most to obtain. (see data in appendix "A") The assessments above could also be used for validation purposes of tax abated improvements or new products coming out. Although Ferris would search for grant monies to develop the Center, assessments could become a revenue generation tool to help with on going support and growth of the Energy Center. If these assessments and state tax rebates that should be put in place for property owner implementation existed, the Center could then be used for validation studies to determine the amount of energy savings that are created through various programs. To improve and maintain efficiencies in energy usage education, testing and validation of new products would also come into play. We must educate both the residential and commercial public in uses of power and how implementation of power saving devices can save them energy costs over a period of time. The educational need that can be filled by the Energy Efficiency Center and Ferris State University involves; educating the public, businesses & industries, new workforce training and degree programs to assisting in solving future workforce and energy needs.

The Center can also assist in equipping the new energy workforce with the knowledge needed for efficiency assessment, design, implementation and equipment validation. There will be workforce needs in assessors, installers, technicians, system designers, inspectors, and energy saving devices manufacturing. This does not include business personnel for retail or additional educators in the field of energy. In the area of equipment efficiency validation the Energy Efficiency Center in the future can do applied research to validate claims from new manufacturing firms created to supply the new

technology to the public and businesses. The Center will also develop into a repository of information to share energy information.

If funding becomes available, Ferris State University and the College of Technology will implement a four-fold plan as the basis of establishing an ongoing "Energy Center" on the Campus of Ferris State University in Big Rapids, Michigan. The four-fold plan includes; (1) the hiring of an outside consultant to research the feasibility of developing an "Energy Center" that encompasses energy generation, energy management, energy distribution and energy efficiency, (2) obtaining a lease on a temporary facility and hiring a professional Architect/Engineering firm to develop construction drawings for a permanent facility to be built at a later date, (3) obtaining a key person to lead the development of the Energy Center and provide funds for part-time support within the University, and (4) developing a student-faculty Co-op internship program to be run in the summer of 2007 as a trial to establish working relationships with outside entities. (5) Establish an advisory board made up of possible members from the Utilities Industry, those involved in new energy technology, an academic partner (community college), public energy consumer, industrial energy consumer, architectural firm involved in LEED buildings, and a regulatory official. Each of the Center build elements is described in detail below.

The Energy Center is at this time a concept of "how can we be better at the generation of energy, distribution of energy, management of energy and the use (efficiency) of energy". To take this concept from the idea stage to full implementation will take a long-range plan. To be successful at this endeavor the best approach would include the input from a professional 3rd party consultant as to what elements of energy (generation, distribution, management & efficiency) should be included and analyzed in the short and long range plans of Ferris State University's College of Technology. Thus, hiring an outside consultant to facilitate a feasibility study would be the first step. This obviously would include the input from those within the College of Technology. See Ferris State University white paper attachment "B".

The next step to success would be obtaining a temporary facility to conduct all elements of the Energy Center. This actual facility is at this time unknown; however, there are several potential facilities within the general Big Rapids area. In addition, this step would include the hiring of a professional Architectural/Engineering firm to provide consultation on the temporary facility and provide design/consulting services for a long range permanent facility to house the Energy Center. These actions would need to be in parallel with the feasibility study such that University resources are maximized.

The next step would involve the search and hiring of a key person to lead/manage the growth and operation of the Energy Center. This person would take charge to implement all phases of the Energy Center and provide coordination to the existing departments within the College of Technology. This person would also be responsible for interaction with outside partners of the Energy Center. It is assumed the Energy Center will establish partners in the pursuit of leading technology, knowledge and leadership to grow the Energy Center nationwide.

The last part of the successful plan is to engage the University with outside elements (private business, public organizations local governments, etc) to create Co-op internships with Ferris Technology students and faculty within the various concepts of the Energy Center. These internships would be during the summer of 2007 and would be facilitated by existing faculty within the College of Technology. By engaging the students and faculty with outside opportunities of “Energy Studies”, the Energy Center would start the creation of a data base to establish real world simulations of energy generation, distribution, management and efficiency. With these kinds of studies and data energy programs can be studied to determine their value and support refunding or discontinuation.

The final thoughts would be the costs involved with the above four-fold plan. Although it is difficult to obtain true costs, the following would represent estimated costs for the four-fold plan.

- Retaining an outside consultant and the creation of a feasibility study would be $100,000 (this includes some overload pay to faculty for their time commitment and input into this effort)
- Obtaining a temporary facility and hiring an outside Architect/Engineering firm would be $500,000 (this also includes supplies, equipment, furniture and misc. items for the temporary facility)
- Hiring a new leader for the Energy Center and providing support for this person would be $250,000 (this would include paying part-time support people and/or faculty for help during the initial period of deployment)
- Creating a Co-op internship program and providing the faculty support for this program would be $150,000 (this includes pay for a limited number of intern students and support faculty)
- As well as costs to start the Center, the state should consider tax incentives for firms and the public. Tax incentives would be for facilities assessment and implementation of energy efficiency technologies, and once installed the validated of energy improvements.

Appendix "A" Back up Calculations on Energy Savings:

21st Century Energy Plan
Ferris State University
Efficiency Comparison
By Assistant Professor Douglas Zentz
June 21, 2006

Introduction

As a means of providing Michigan with additional electrical power for the future and provide the utilities furnishing electrical power a more stable future of providing power, the following document serves to illustrate the potential Michigan has to offer if existing buildings were more energy efficient. Michigan is currently one of the worst states in the country as our commercial building codes refer to 1999 energy efficiency guidelines. Furthermore, many of these efficiency guidelines are not met due to ignorance and Michigan has a large base of older buildings in use. Additionally, overall building efficiency is not a driving factor for most building owners as the typical lifecycle payback is 5 to 10 years to renovate an existing building.

Analysis

The basis for this study was to compare three (3) typical building types and extrapolate potential savings in the form of (1) reduced electrical demand in kW, (2) reduced annual kWh consumption, and (3) reduced annual CO_2 production at the electrical power plant (fossil fuels are assumed to be used). The three building types are:

- Commercial Office Space (a 40,000 ft^2 two story building was analyzed)

- Strip Shopping Center (a 100,000 ft^2 single story facility was analyzed)
- Medical Doctor's Office Building (a 45,000 ft^2 single story was analyzed)

In each situation the buildings were analyzed using the Trane System Analyzer program and each building was created with typical energy used figures from the construction industry (lighting levels in watts/ft^2, plug load in watts/ft^2 and HVAC system efficiency in EER). These figures were first taken as what a typical facility would be from Michigan's current energy guidelines and then each building was analyzed with the latest energy guidelines (2004 version) from ASHRAE & AIA. The latest guideline is ASHRAE Standard 90.1-2004 and this standard is used by the Federal Government DOE program and the United States Green Building Council as the minimum requirements for creating a baseline building (which means these figures are the worst case efficiencies you can use). Michigan is currently two (2) generations behind this standard.

The primary factors which were analyzed included the potential savings due to energy efficient overhead/general lighting systems and updated HVAC systems within each building.

To illustrate the potential Michigan could enjoy, the chart below recaps the general data from all three building analyses.

Building Type	Demand Reduction	Consumption Savings (annually)	Greenhouse Gas Reduction (annually)
	kW/1000 ft^2	kWh/ft^2	Tons of CO_2/1000 ft^2
Commercial Office Bldg	1.25	2	2
Strip Shopping	1.75	5	5
Medical Doctor's Office	1.5	3.5	3

The above numbers are conservative and the actual savings could be much larger as Michigan has a large base of older buildings with integral lighting and HVAC systems which are very energy inefficient. However, if we assume that the above is real potential and incentives (rebates, tax credit, etc) were available for building owners; the following could represent real potential for the State of Michigan.

With the involvement of 4,000,000 ft^2 of commercial office space, 2,000,000 ft^2 of strip shopping and 1,000,000 ft^2 of medical space, the total savings to Michigan would be the following.

- 10,000 kW reduction in electrical demand
- 21,500,000 kWh reduction in electrical consumption (annually)
- 21,000 tons of CO_2 gas emission reduction (annually)

NOTE: the savings could be applied to other building types

Summary

Obviously the above potential is purely that, just potential, at this time. However, the magnitude of potential savings warrants strong attention because the areas within Michigan that have the most potential are the same areas which will need the most assistance in the future to ward off new power generation. In addition to the savings of electrical demand and electrical consumption, the following potential brings real benefits to Michigan.

- Creation of new jobs as new construction projects would be generated (most of these would never happen)
- Expansion of existing suppliers of energy efficient products
- Potential addition of new business to Michigan to satisfy the newly created needs

- Higher awareness to the general public of Michigan's need to be GREEN as building owners would use this to promote their business

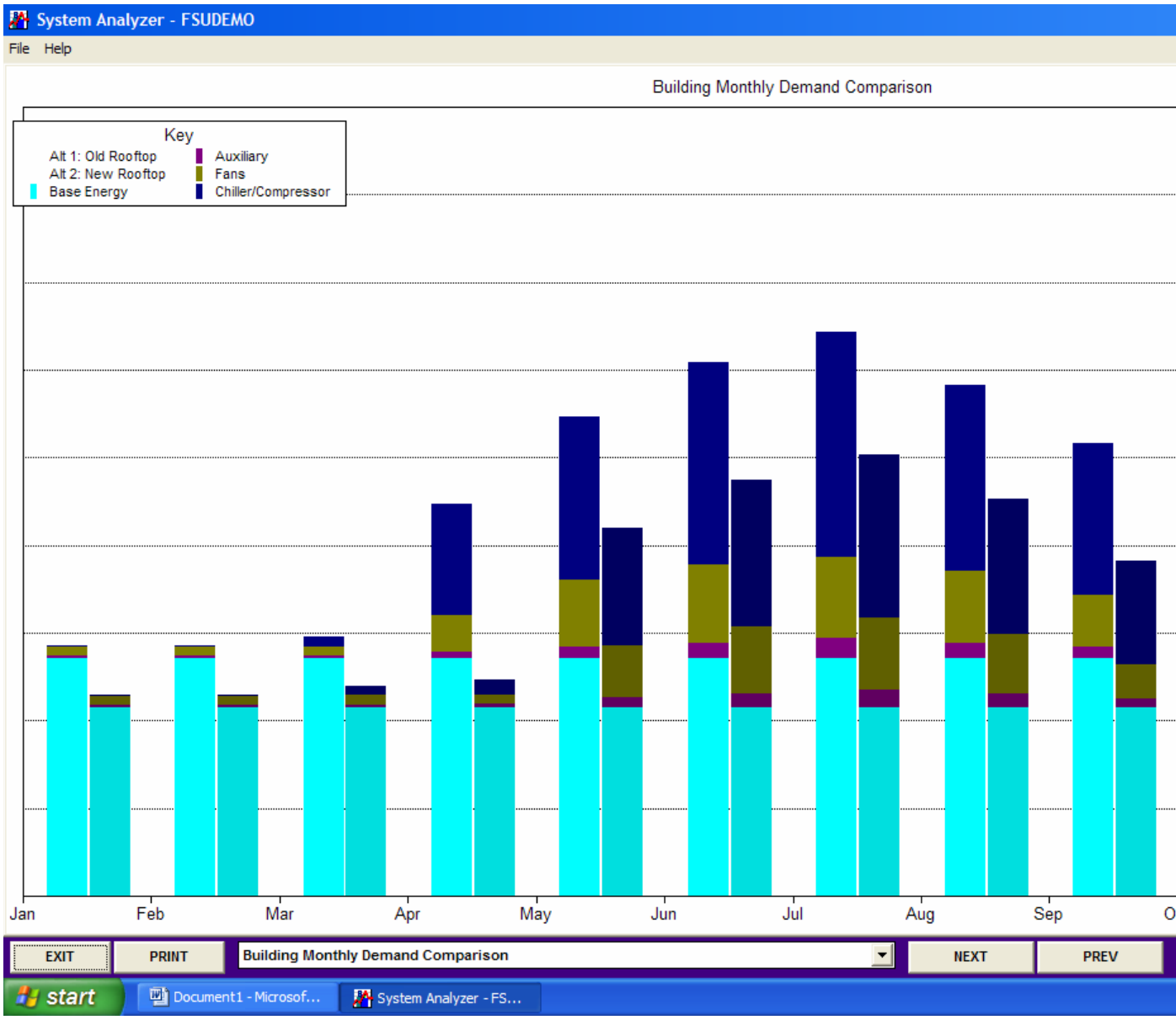
However, in order to facilitate the above, Michigan should promote the following:

1. Real financial incentives to building owners to offset the capital investments needed to complete the renovations.
2. Added incentives if buildings are renovated to Energy Star or LEED certification levels.
3. A validation process should be an integral element of this program. Within this process a 3rd party entity should conduct audits to validate the potential savings and document this data for the state authorities (see note below).
4. Funds should be available for building owners to conduct energy efficiency studies as to justify project creation. This could be part of the incentive program to reimburse building owners if valid projects are created.

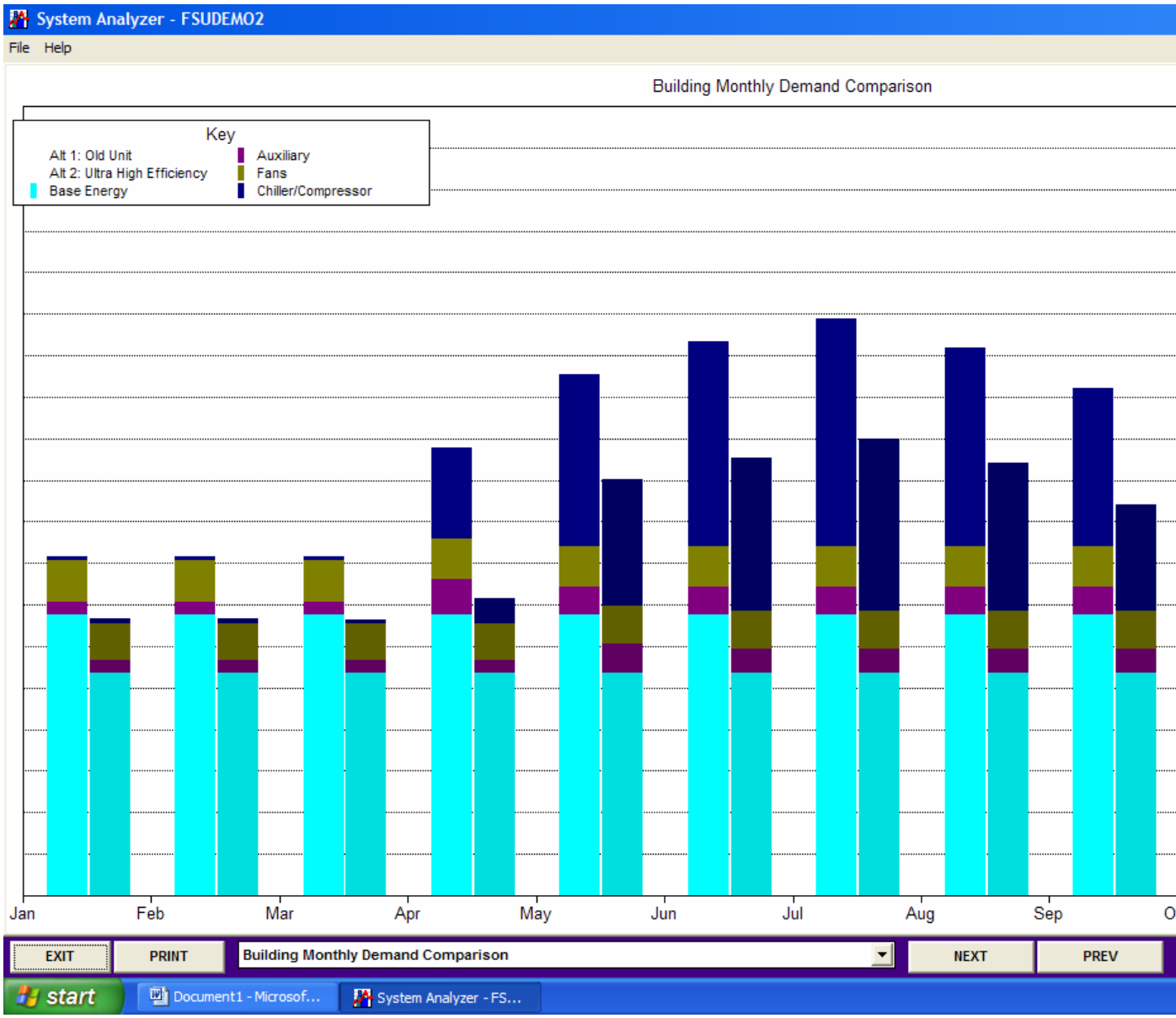
NOTES

- See the charts within the other documents for illustrations of monthly energy savings
- The analyses conducted did not include optional savings due to added energy management savings systems, devices or strategies (VFD drives, ECM motors, DDC control systems, etc)
- Ferris State University has experience in building energy audits (part of the HVAC curriculum) and Ferris could play a key role in the validation process with the use of student Co-op programs and other resources.

Commercial Office Building Comparison: 40,000 sq.ft.

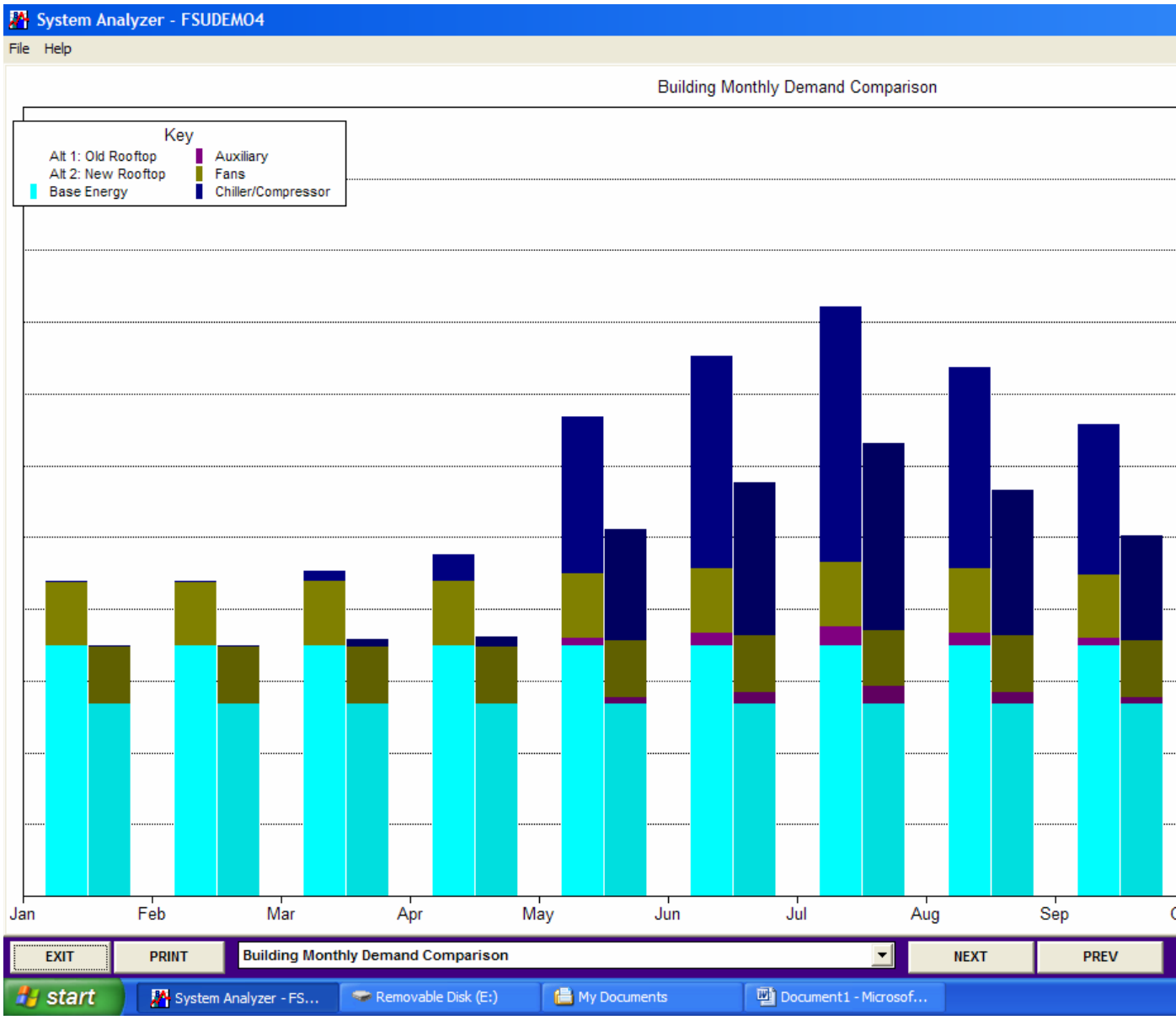


Rooftop VAV Comparison



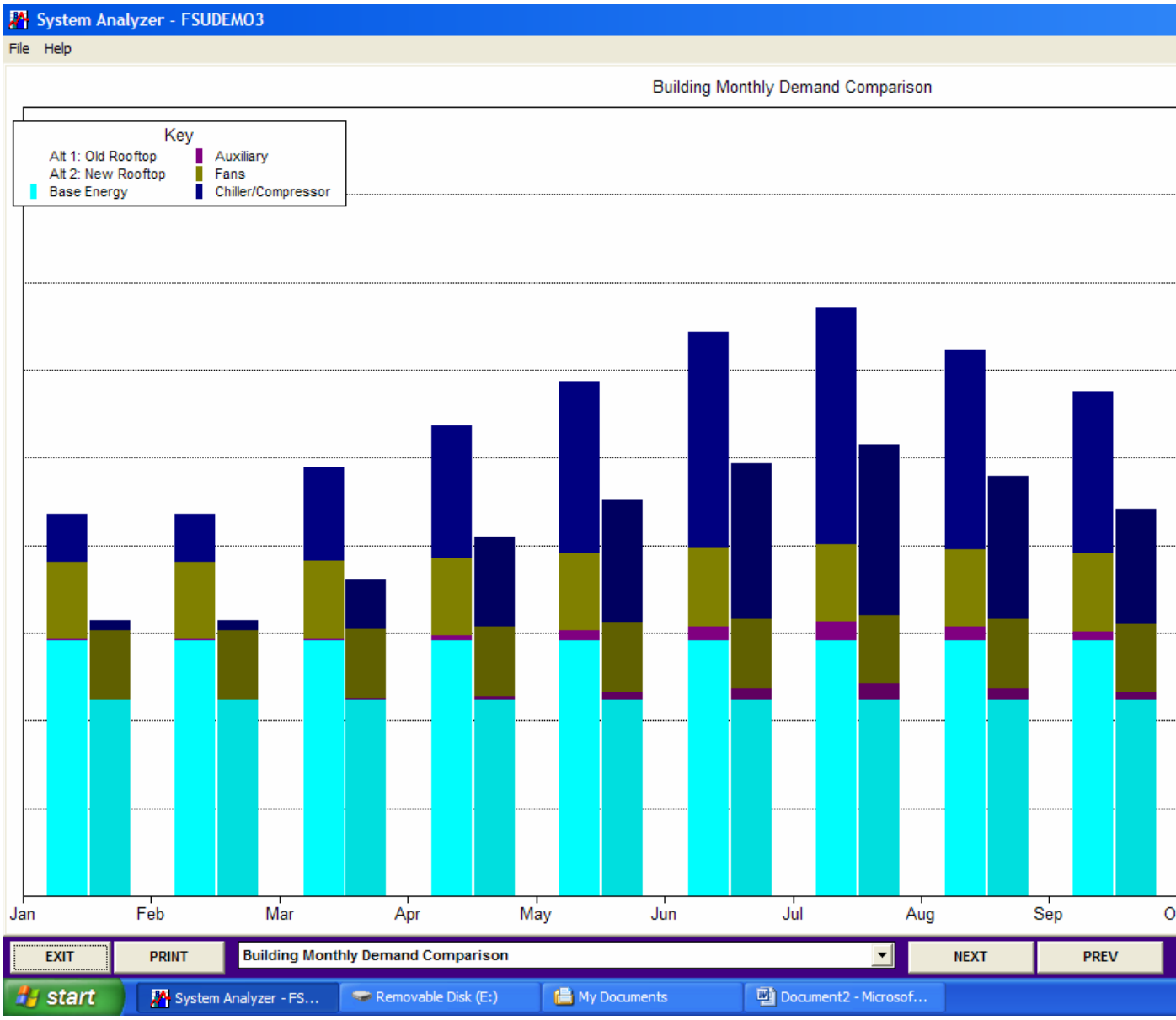
Water Source Heat Pump Comparison

Strip Mall Comparison: 100,000 sq.ft.



Strip Shopping Rooftop HVAC

Medical Office Building Comparison



Medical Doctor's Office Building

Appendix "B"

Ferris State University Executive Summary on Energy Efficiency Center:

Distinguishing Ferris State within the Context of the Energy Challenge

National and state initiatives are targeting aggressive strategies for energy efficiency, generation, and capacity building. Long term funding commitments are being confirmed by Federal[i] and state governments[ii, iii] as well as private industry. Reducing consumption through education and implementation of technologies are vital to economic recovery and stability. Energy savings combined with alternative energy development will not only reduce dependence on traditional sources but also create new industries and employment.

Last April, Gov. Granholm emphasized the importance of energy to the State's economy by issuing a directive to establish a statewide energy plan.[iv,v] The College of Technology has been an active member on the Public Service Commission's committee on Energy Efficiency – one of four committees organized as a result of the directive. Ferris State's contributions on this committee have been significant. Ferris is the primary university representation on these committees dominated by utilities, industries, and special interests.

Critical issues addressed within these initiatives are central to the capabilities and focus of Ferris State. While other universities are primarily addressing the energy through research in key technologies, Ferris is uniquely prepared to address this challenge from a broad and applied perspective. In particular the College can play a major role in fuel efficiency efforts.

The College of Technology proposes Ferris State University establish itself as an essential and recognized asset in facilitating solutions to energy related economic and technical challenges. To achieve this goal the university will accomplish the following objectives:

1. Continue to integrate Ferris as active long term participants on energy policy and planning committees within government and industry.
2. Form a mix industry, state, academic energy initiatives steering committee.
3. Apply for national, state and private funding to enable these objectives.
4. Pursue opportunities for applied research, testing, certification and validation associated with energy technologies. (Inline with current long term plans of the College.)
5. Host an energy forum for academic, government, utility and industry (2007).
6. Develop new curriculum that creates graduates for careers in energy technology fields.
7. Aggressively seek funding to construct and sustain an *Energy Resource Center* for resource distribution, demonstration, training and marketing.

   The Energy Resource Center will provide a distinguishing facility for:
   - Education/demonstration in energy associated technologies for university and K-12 students, residents and industry.
   - Evaluation, design and possibly implementation of weatherization upgrades to old residential and commercial construction.
   - Testing and certification of materials, equipment and techniques associated with energy efficiency.

- LEED (Leadership in Energy and Environmental Design) certification and training.
- Developing partnerships with organizations recognized as leaders in the construction industry by the EPA and Federal Government. (e.g. USGBC (United States Green Building Council), ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers), AIA (American Institute of Architects), etc.)

---

[i] http://www.energy.gov/
Department of Energy

[ii] http://www.eere.energy.gov/states/state_specific_information.cfm/state=MI
Energy Efficiency and Renewable Energy – Michigan

[iii] http://www.freep.com/apps/pbcs.dll/article?AID=/20060213/BUSINESS06/602130379
MICHIGAN'S $2-BILLION INITIATIVE: State aims to become nation's alternative energy hub

[iv] http://www.cis.state.mi.us/mpsc/electric/capacity/energyplan/
Michigan 21st Century Plan – Public Service Commission

[v] http://www.michigan.gov/gov/0,1607,7-168-36898-140415--,00.html
EXECUTIVE DIRECTIVE No. 2006-2 - 21ST CENTURY ENERGY PLAN

RESPONSES TO ENERGY EFFICIENCY 'STRAWMAN' QUESTIONS
[by Martin Kushler, ACEEE]
[July 20, 2006]

1. Should a public benefits fund of $---- million per year should be created for funding a statewide electric energy-efficiency (EE) program?

   Yes, a fund totaling $100 million per year, covering all investor owned electric utilities in the state, should be created to pay for energy efficiency programs for all customer classes. A charge equivalent to 1 mill per kWh on all electricity sales by distribution utilities would provide a fund of that magnitude. A 1 mill per kWh funding level would put Michigan at the median (midpoint) level among the roughly 20 states with public benefits energy efficiency funding.

   [Note: an acceptable alternative to a specific funding level would be a minimum annual energy savings requirement. (e.g., utilities could be required to have energy efficiency program savings each year equivalent to 50% of forecasted growth in electricity use.)]

   Some may try to label such energy efficiency expenditures as a "tax", but that would be false and misleading. This would simply be a re-direction of a small percentage of the billions of dollars that utilities spend every year on supply side resources, into energy efficiency resources (which are cheaper). This would be a very cost-effective resource investment for Michigan, producing two to three dollars in lifetime electric system cost savings for every dollar spent on energy efficiency programs.

2. Should program administration be by (1) utilities; or (2) by a third party?

   Either approach would be acceptable, if appropriate oversight is provided by the MPSC, and there is appropriate opportunity for public input.

3. What state regulatory body should have oversight over the statewide EE program?

   The MPSC is best qualified to provide oversight for utility sector energy efficiency programs.

4. Should funding levels be established by statute or by the regulatory agency?

   Either approach would be acceptable, as long as the job gets done. The MPSC may lack authority to simply mandate specific funding levels, but has many tools available to help influence utilities to achieve appropriate funding levels. The first choice would be for the legislature to pass excellent legislation on this issue. But if that cannot be accomplished, the MPSC must do what it can to achieve energy efficiency programs, because the state cannot afford to continue to neglect this important resource.

5. Should regulated utility participation in the statewide EE program be voluntary or required?

   All regulated utilities should participate in providing energy efficiency programs. If Michigan passes legislation, this should be clearly required. If done through regulatory means, the MPSC should do everything it can to strongly encourage and reinforce full participation.

   Also, funding for energy efficiency programs should be collected from all distribution utility customers, in a manner that does not discriminate between customers obtaining retail supply from the utility or from an independent supplier. (That is the approach taken in virtually every "restructured" state that has utility sector energy efficiency programs.)

6. Should municipal utilities or retail electric cooperatives be required to participate or may they opt into the statewide EE program at their discretion?

   If legislation is passed, municipal utilities and electric cooperative above some minimum size should be required to participate. Customers of muni's and co-ops deserve access to energy efficiency programs to help them reduce their energy costs just as customers of investor owned utilities; and Michigan's economy will benefit from increased efficiency in those service territories as well.

7. Should large energy customers have an opportunity to opt out of the statewide EE program?

   No, Michigan cannot afford to neglect the substantial energy efficiency savings that are available in large customer facilities. Experience in Michigan, and in many other states, has repeatedly demonstrated that these facilities have some of the most cost-effective energy efficiency resource opportunities that utilities can capture.

   However, some states have taken steps to address large customer interests by allowing for "self-directed" energy efficiency by these customers. Briefly stated, customers above a certain size (e.g., 1 MW demand) are assured that they can obtain back every dollar that they pay into the utility energy efficiency fund to pay for energy efficiency improvements in their own facilities. They submit qualifying proposals for energy efficiency projects, and are entitled to receive back to pay for those projects up to every dollar they paid into the fund. In this manner, the important energy efficiency improvements in this sector are still captured, but customers are able to avoid having to "subsidize projects in their competitors' facilities"), because all of their dollars can be applied to efficiency projects in their own facilities. This arrangement seems to work well in the states that have taken this approach.

8. Should fees collected by utilities from customers be approved in a general rate-case proceeding?

   There are a variety of rate mechanisms that can be used to provide cost-recovery for utility-sector energy efficiency programs. There should be appropriate MPSC oversight, but this wouldn't necessarily have to be in a general rate-case.

9. Should the MPSC determine the amount to be recovered by rate class or by a uniform per-unit charge on all customers?

   If this is not established by legislation, then the MPSC would have to make this type of determination. As a general principle, all ratepayer classes should provide funding for energy efficiency resources, just as they provide the funding for all other types of utility resource investments. Also as a general principle, energy efficiency program spending for different rate classes should be roughly proportional to the amount of energy efficiency funding provided by each rate class. Those general principles are exhibited in virtually every state that has utility sector energy efficiency programs. (The most common funding mechanism is a non-bypassable per-unit surcharge on all distribution utility customers. But other mechanisms can work as well.)

10. Should program costs be rolled into utility distribution charges or be separately stated on customer bills?

    Energy efficiency resource costs should be treated like any other utility system cost and rolled into appropriate utility tariffs. There is no defensible reason why energy efficiency charges should be separately listed on the bill when other resource costs are not. (Frankly, separate listing of energy efficiency charges is a tactic sometimes used by opponents of energy efficiency funding to attempt to stir up opposition by singling out those costs.)

11. Should program costs be capitalized by utilities and amortized over a Commission determined period, or should program costs be expensed?

    Either of those approaches could work. Most states expense the energy efficiency program costs in the year they are incurred.

12. Should the state regulatory body conduct or contract for financial and performance audits?

Yes. There should be periodic independent evaluation of the energy efficiency programs by professional energy program evaluators, overseen by the MPSC and/or a collaborative group of stakeholders on behalf of the MPSC.

13. How can cost effective program administration be ensured?

Literally hundreds of evaluations have been conducted over the past two decades and they have overwhelmingly found energy efficiency programs to be cost-effective, including all associated administrative costs. Program evaluation should examine program administration as a part of the overall evaluation of the energy efficiency programs, but there is no reason to assume that program administration will not be cost-effective if well-proven program designs are utilitized.

14. Should the MPSC be required to institute revenue decoupling trackers for utilities to deal with the issue of EE induced revenue losses?

Direct recovery of "lost revenues" due to energy efficiency programs has fallen out of favor for several reasons, including:

- **Vulnerable to 'gaming'**
- **Leads to very contentious reconciliation hearings**
- **Doesn't do anything to address the utility disincentive regarding broader energy efficiency policies (e.g., codes and standards),**
- **Nor does it diminish the general utility interest in pursuing load-building**

For these reasons, it is now almost never used.

The preferred approach for dealing with the issue of lost revenues is to adopt a full revenue decoupling mechanism, such as in place in California, Oregon, and several other jurisdictions.

15. How can a statewide EE program promote Michigan energy-efficiency manufacturers, suppliers, and service providers?

Energy efficiency programs, by their very nature, depend on local labor for program staff, and deliver their services through local contractors, suppliers and retailers. Furthermore, the capital invested in these programs is invested directly into local homes and business facilities. Research has repeatedly demonstrated that energy efficiency programs have much better "economic multipliers" for the local economy than typical utility supply-side investments.

16. Should EE program targets be separate from, and not exchangeable with renewable energy portfolio targets?

There should be separately identifiable energy efficiency and renewable energy targets, because each of those resources is important to encourage in Michigan. However, those two categories could be combined in an overall "clean energy portfolio standard", with certain minimum requirements for both energy efficiency and renewable energy. There are states that have taken that combined approach (e.g., Pennsylvania and Nevada).

Among the two, energy efficiency should be the highest priority resource, because energy efficiency has been well-demonstrated to be the cheapest and most abundantly available resource.

17. Should the MPSC determine to what extent federal LIHEAP appropriations may be applied to the statewide EE program?

Michigan should allocate the maximum allowable amount of LIHEAP funds to energy efficiency/Weatherization, because permanently reducing low-income customer bills makes more sense than simply paying the cost of high utility bills year after year. However, in terms of setting up a state energy plan, I would recommend that low-income programs, including LIHEAP, be categorized, funded, and administered separately from the overall energy efficiency resource programs. Low-income programs are not primarily designed as "resource" programs, but rather, are pursued for a number of other reasons (e.g., human needs, health and safety, reduced bad debt and uncollectible accounts, etc.) Because energy efficiency and weatherization can effectively help reduce low-income customer bills, there should be specific funding for utility low-income energy efficiency/Weatherization services. But I would suggest they be categorized separately from energy efficiency "resource" programs.

ENERGY EFFICIENCY "STRAWMAN" PROPOSAL
[Martin Kushler, Ph.D., ACEEE]
[July 20, 2006]

What Can Energy Efficiency Contribute?

Based on experience in other leading states:

- Utility sector energy efficiency programs could offset at least 50% of the projected electricity load growth in Michigan, at an average levelized cost of 3 cents/kWh …. half the cost of constructing, fueling operating, and delivering electricity from a new power plant.

- Every dollar invested in utility sector energy efficiency programs would save $2 to $3 in long-term utility system costs for Michigan ratepayers. In addition, because they emphasize local labor, contractors, retailers, and suppliers, energy efficiency programs produce substantial local economic benefits (e.g., as opposed to sending more dollars out-of-state to import fuels). Moreover, energy efficiency programs also produce substantial environmental benefits due to reduced combustion of fossil fuels.

- Public opinion polls repeatedly demonstrate that energy efficiency is by far the most popular utility resource option, with over 80% support (vs. a new coal plant at 30%). Energy efficiency offers a utility system resource that the public will enthusiastically support..

- Other energy efficiency policies such as improved building codes and equipment energy efficiency standards would be complimentary to utility-sector energy efficiency programs, and could offset another 10-25% of projected electricity load growth.

Key Background Factors

The Economy

- Michigan spends over $25 billion a year on energy. The 8th highest energy cost burden of any state.

- Michigan **imports**:

    - 100% of the coal and uranium
    - 96% of the oil, and
    - three-fourths of the natural gas we use

The dramatic oil and natural gas price increases of the last two years have turned this energy import dependence into a dollar drain of crisis proportions.

A total of roughly $18 billion per year flows out of the state to pay for energy!
(50% more than just a few years ago)

- huge impact on households
- major damage to our energy-intensive industries
- substantial negative impact on the overall state economy

- Electricity and natural gas costs account for nearly half of our state's total energy cost burden.

- Energy efficiency programs can save electricity at half the cost of new electricity supply, and can save natural gas at one-third the projected long-term wholesale cost of natural gas.

The Environment

- Burning fossil fuels is the largest single source of environmental pollution in the state.

- National data shows electricity generation alone is responsible for 25% of Nitrogen Oxide emissions (major contributor to ozone alerts); 70% of Sulfur Dioxide (cause of acid rain); 25% of Mercury (direct cause of fish consumption warnings on many Michigan lakes); and 35% of Carbon Dioxide (the major contributor to global climate change). Michigan's situation is worse than most because of our heavy use of coal as the primary fuel for electricity generation (over two-thirds of the electricity consumed in Michigan is generated by coal - - the dirtiest of the electric generation fuels).

The Potential

- Michigan has huge potential for energy efficiency gains because Michigan has had almost no energy efficiency programs for a decade. Our building and equipment stock is very inefficient compared to the leading states in this area.

[See also the attached Appendix A, which provides additional background information about the subject of energy efficiency as a utility-system resource.]

Goal

Michigan utilities will aggressively fund and implement energy efficiency programs as a key part of meeting electricity and natural gas resource needs in Michigan. Our state will once again be among the national leaders in utility-sector energy efficiency programs, thereby reducing our total utility system costs; helping to hold down long-term energy rates; improving the Michigan economy by retaining more energy dollars within our state; and reducing environmental emissions.

Benchmarks

We have developed two benchmarks that could be used to gauge success in this effort, one in terms of energy efficiency annual program spending, and one in terms of energy efficiency annual savings.

1. ***Minimum Spending Requirements***

USING NATIONAL DATA ON FUNDING FOR ENERGY EFFICIENCY AND LOW-INCOME PROGRAMS [Based on 20 states with restructuring related funding for energy efficiency and low-income programs.]

Energy Efficiency Funding Levels (funding per kWh sold)

Range: 0.03 to 3.3 mills/kWh [one "mill" = one-tenth of a cent]

Median: 1.0 mills/kWh [the "median" is the mid-point level]

Range: $1.5 million to $228 million/yr.

>>If Michigan funded energy efficiency at the median level: $100 million/yr.

Low Income Programs Funding Levels (funding per kWh sold)

Range: 0.1 to 1.2 mills/kWh

Median: 0.6 mills/kWh

Range: $0.8 million to $100 million

>> If Michigan funded low-income programs[1] at the median level: $60 million/yr.

CURRENT MICHIGAN LI/EE FUND: ~ $45 million/yr.[2]

TOTAL NEEDED FOR MICHIGAN TO BE AT MEDIAN: $160 million/yr.

Appropriate corresponding energy efficiency program funding benchmarks should also be established for natural gas utilities. (We estimate that to be perhaps $60 million/yr.) [Note: as is the practice in states that establish their utility energy efficiency commitment in terms of funding levels, those levels would be translated into energy savings objectives. The goal would always be to achieve actual energy savings, not simply to spend money.]

---

[1] "Low-income programs" include energy bill payment assistance as well as specially targeted low-income weatherization and energy efficiency programs.

[2] The existing LI/EE fund has been primarily (~80%) used for low-income bill payment assistance. Only about 5% of the funds have been used for actual energy efficiency program efforts outside of the low-income sector. Essentially, Michigan has no current utility-sector energy efficiency programs.

2. *Minimum Savings Requirements*

A benchmark could also be established in terms of annual savings. At least five leading states are already saving 0.8% of total electricity consumption per year, and several are considering a 1% annual savings goal. Michigan was once a national leader in implementing utility energy efficiency programs, and there is no reason why we couldn't do so again. Se we recommend a requirement that utilities achieve energy efficiency program savings at least equivalent to 0.8% of total annual consumption per year. [Alternatively, the savings requirement could be expressed as 50% of projected growth in electricity use (MWh) and peak demand (MW).]

Appropriate corresponding energy saving benchmarks should also be established for natural gas utilities. We would suggest that annual savings equivalent to perhaps 0.5% of total annual natural gas consumption would be a reasonable benchmark target.

Policy Mechanisms

Securing Funding for Utility Sector Energy Efficiency

There are basically three different types of policy mechanisms that states have used to achieve significant utility-sector energy efficiency programs. These include:

1. Establish binding **savings targets** for utilities (e.g., an "**energy efficiency portfolio standard**" requiring utilities to achieve energy efficiency savings equivalent to X% per year) This is the newest and fastest-growing policy mechanism, with about a half-dozen states having adopted or are seriously pursuing that approach.
2. Provide funding for energy efficiency through state **system benefit funds.** This is the most common approach, with about a dozen states using a system benefits charge approach (typically a non-bypassable, per-kWh charge at the distribution system level). Common sbc charge amounts are 0.5 to 3.0 mills/kWh.
3. Require funding for energy efficiency through electric and gas **utility rate cases.** There are over a half-dozen states that use this type of approach, where energy efficiency costs are recovered in rates, similar to supply-side resources.

   [Funding approaches and programs can be tailored to meet the unique needs of each state. Some states are using a combination of approaches]

The general consensus is that the first two policy mechanisms above would require legislation in order to be applied in Michigan. There appears to be divided opinion on the amount of authority the MPSC has to use the third mechanism above. Legislation to clarify the authority of the MPSC to require and approve utility energy efficiency programs would certainly be helpful. Absent new legislation, most parties agree that the MPSC would have authority to *approve* energy efficiency resource programs if the utilities proposed them, but would not be able to simply mandate utilities to provide them.

Additional Helpful Policy Actions

In addition to the above basic funding mechanisms, we believe that it will be helpful to have policy/regulatory mechanisms to help encourage utility companies to fund and implement energy efficiency programs. Other states have successfully used such mechanisms, including providing utilities with an opportunity to earn a shareholder incentive for good performance in implementing energy efficiency programs, as well as adopting regulatory procedures to "de-couple" utility profits from the level of energy sales.[3] It would also be helpful for the legislature to encourage the MPSC to consider and implement such mechanisms.

Lastly, it would be helpful for the legislature to investigate ways that they could encourage additional energy efficiency through other policy mechanisms, such as building energy codes and energy efficiency standards for equipment not covered by federal standards. A number of states have passed legislation to make energy efficiency improvements in those areas. While significant utility-sector energy efficiency programs are the cornerstone of virtually every leading state in the energy efficiency area, these other policy mechanisms can be useful complimentary strategies.

[3] Under traditional regulation, a utility's rates are set based on an estimation of costs of providing service over some period (including an allowed rate of return, or "profit"), divided by a forecasted amount of unit sales over that period. If actual sales turn out just as forecasted, the utility will recover all of its fixed costs and earn its allowed rate of return. If actual sales exceed the forecast, the utility will earn extra profit. If actual sales fall below the forecast, the utility will earn less profit, and may potentially fail to recover all of its fixed costs. This basic relationship between sales and profits applies to both gas and electric utilities, and exists whether the utility is a vertically integrated utility or a "distribution only" utility in a restructured state. The public interest issue underlying the concept of utility rate "decoupling" is really fairly simple. Once rates are set, utilities have an inherent incentive to increase sales, and a disincentive to take actions to encourage their customers to adopt energy efficient practices that may result in lower sales, as this will reduce their net revenues, and thus their amount of profit and their ability to recover their fixed costs.

This basic economic disincentive is a serious impediment to getting utilities to fund and implement energy efficiency programs. States that have successfully achieved utility-sector energy efficiency programs have found ways to overcome that disincentive, usually with a combination of explicit requirements (e.g., minimum savings and/or spending levels) together with regulatory mechanisms to remove disincentives and/or provide economic incentives. Michigan will need to adopt similar strategies in order successfully achieve significant utility-sector energy efficiency programs.

APPENDIX A:
BACKGROUND ON ENERGY EFFICIENCY AS A RESOURCE

1. Energy Efficiency Cost-Effectiveness

Utility-sector energy efficiency programs have been extensively evaluated for more than two decades. Literally hundreds of evaluations have been completed, and evaluation results have been fully confirmed in contested-case hearings in many states. Meta-evaluations of results across the nation have generally found that a diverse portfolio of energy efficiency programs serving all sectors can provide energy savings at a levelized cost of 3.0 cents per kWh or less.[4] Some specific examples include an evaluation of five years of the comprehensive energy efficiency programs of the California utilities, which documented spending of $1.4 billion, annual savings of between 1,100 and 1,900 Gwh and 225 to 450 MW each year, at an overall levelized cost of 2.9 cents per kWh[5]; and an assessment by the Northwest Power and Conservation Council for the Pacific Northwest (OR, WA, MT, ID) showing an overall cost of conserved energy of 2.4 cents/kWh.[6] Similar results have been reported in Minnesota, Wisconsin, New York and throughout the New England states.[7]

2. Energy Efficiency as a Resource

Many states now explicitly recognize energy efficiency as a legitimate and important energy "resource", and assure significant funding for utility-sector energy efficiency programs to capture that resource. Some examples include:

- Texas statute requires utilities to meet 10% of projected load growth thru energy efficiency. (This has proven so easy since it was enacted that they are considering increasing the target to 20% or more.)
- California utilities are now funding energy efficiency to meet 50% of forecasted growth. (California utilities will spend $2 billion on energy efficiency programs in next 3 yrs)
- The Pacific NW expects energy efficiency to meet all forecasted needs for new electricity resources through 2012, and half of all new resource needs thru 2025
- Vermont is considering targeting negative load growth as an objective, through aggressive energy efficiency programs.

---

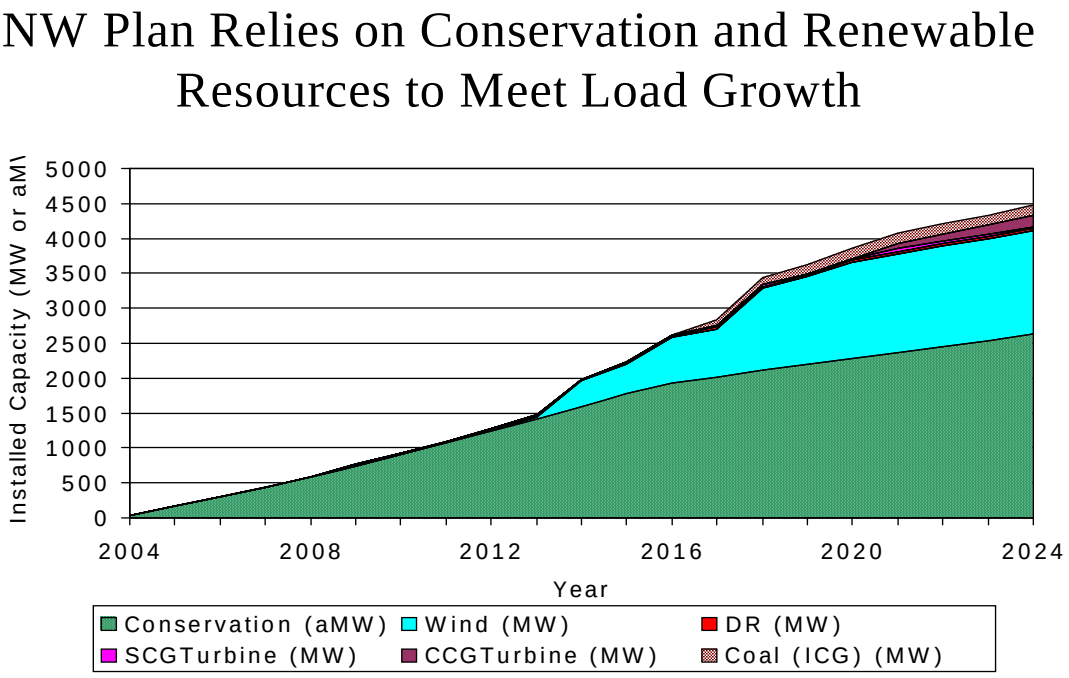
[4] For example, see: *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*, ACEEE, April, 2004. URL: http://aceee.org/pubs/u041.pdf?CFID=391393&CFTOKEN=50680423

[5] See: *Funding and Savings for Energy Efficiency Programs for Program Years 2000 Through 2004*, California Energy Commission, July 2005.

[6] See: *The Fifth Northwest Electric Power and Conservation Plan*, Northwest Power and Conservation Council, Portland, Oregon, May 2005. [http://www.nwcouncil.org/energy/powerplan/plan/]

[7] In fact, the evaluation results in Michigan in the early 1990s were very competitive with the best of those states, with costs of conserved energy well below 3 cents per kWh for both of our major electric utilities.

The example from the Pacific Northwest is of particular interest, because they have the longest-running and best-respected electric resource planning process in the country. Printed below is a graph of their recommended electric resource additions from their most recent electric system plan.[8]



As illustrated in the graph, ALL of their additional resource needs through 2012 will be met through energy efficiency ("conservation") programs. Through 2016 they will be met through energy efficiency programs plus wind. Only after 2016 do they intend to bring in small amounts of new fossil fuel generation resources, and they explicitly cite the value of energy efficiency in reducing system cost risk and in deferring the need to invest in costly new generating plants. Here are some of the key points they make about their planning results:

- Energy efficiency is cheap (avg. 2.4 cents/kWh) & a hedge against market price spikes
- It has value even when market prices are low, because it's still cheaper
- It's not subject to fuel price risk
- It's not subject to carbon control risk
- It's significant enough in size to delay "build decisions" on generation

[8] See: *The Fifth Northwest Electric Power and Conservation Plan*, cited previously.

3. Energy Efficiency Potential in Michigan

A recent meta-evaluation by ACEEE[9] reviewed energy efficiency potential studies that had been conducted in eleven states and regions around the nation since the year 2000. Across all of these studies, the median (mid-point) estimate of achievable potential[10] for energy efficiency program savings was 1.2% of total electric sales per year. Historically, states seldom require utility energy efficiency funding sufficient to capture all achievable potential, but the best states have successfully achieved cost-effective program savings of 0.8% of total sales per year.[11]

It is noteworthy that most of these energy efficiency potential studies were conducted in states that have a long prior history of significant utility-sector energy efficiency programs. Because Michigan has had no such programs in over 10 years, both technical and achievable potential in Michigan should be higher than is reflected in these recent studies. A reasonable estimate of achievable cost-effective energy efficiency potential from aggressive utility-sector energy efficiency programs in Michigan should be in the range of 0.8% to 1.0% of total electric system consumption per year.

4. Best Energy Efficiency Program Opportunities

Energy efficiency programs target a wide variety of building and equipment measures, in all customer sectors. Based on industry experience over the years, some of the best priority target areas for Michigan would be:

<u>Residential</u>

- Lighting (CFL bulbs and fixtures)
- Appliances (i.e., Energy Star equipment)
- HVAC (A/C for electric, furnaces for gas)
- Weatherization (for lower income categories especially)

<u>Commercial</u>

- Lighting (perhaps the single most cost-effective opportunity
- HVAC (A/C for elec., furnaces & boilers for gas)
- Specialty Programs (e.g., cooking equipment, laundry equipment, water & wastewater treatment facilities, etc.)

<u>Industrial</u>

- Custom programs (tailored to specific industry needs)

---

[9] *The Technical, Economic, and Achievable Potential for Energy Efficiency in the United States: A Meta-Analysis of Recent Studies*, Nadel, Shipley & Elliott, ACEEE, 2004.

[10] "Achievable potential" is the amount of cost-effective energy savings that should be possible from aggressive but realistic energy efficiency programs. "Technical potential" is the amount of savings that could be achieved if all possible energy efficiency improvements were actually made, and is always considerably higher than achievable potential.

[11] See: *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*, cited previously.

Because of the complete lack of energy efficiency programs in Michigan over the past 10 years, Michigan's buildings and equipment have a tremendous potential for cost-effective energy efficiency improvement.

5. Need For Regulatory/Policy Reform

For a variety of reasons, utility companies do not like to fund energy efficiency programs.[12] Every one of the states that currently have utility sector energy efficiency programs have some type of legislative and/or regulatory requirement for such programs. In addition, states are increasingly taking steps to modify regulatory approaches to address and remedy the financial disincentive utilities perceive regarding energy efficiency. Actions in this area include "decoupling" profits from sales levels and implementing utility shareholder incentives for good energy efficiency performance. Currently Michigan has no such mechanisms, nor any requirements for utility energy efficiency resource programs.

[12] Most importantly, under traditional regulation, utilities typically profit more from higher unit sales and don't like to take steps to reduce sales. This creates a dynamic that favors higher load growth, increased need for more supply, and higher costs for ratepayers.

Michigan Energy Efficiency Program Strawman Proposal

Submitted by the Michigan Electric Cooperative Association
July 20, 2006

1. An energy efficiency program will encompass measures which result in producing the same or better levels of amenities, including lighting, space conditioning, motor power, and home entertainment and appliances, using less energy;

2. An energy efficiency program for Michigan will include all regulated and non-regulated utilities; such utilities can meet targeted and measurable customer consumption reduction levels through *voluntary* programs;

3. The State of Michigan will evaluate areas of potential energy efficiency savings in the state, rate those areas by kWh savings, calculate potential total energy efficiency savings, and identify areas of most-to-least promising in terms of cost-effectiveness, i.e., what would it cost in terms of public education, promotion and financial incentives to achieve savings;

4. The MPSC and individual utilities will agree on energy efficiency goals and targets that match the unique characteristics of each utility;

5. The utilities will be able to recover costs related to the promotion and implementation of energy efficiency programs through rates and/or fixed charges;

6. The MPSC will allow utilities to decouple rates from fixed charges to minimize the impact of reduced consumption on revenue;

7. Utilities will be able to use third-party providers to manage energy efficiency programs;

8. The MPSC will approve, for utilities on a voluntary basis, a Pay As You Save (PAYS) or similar system that allows customers to buy proven energy efficient products;

9. To give all utilities the opportunity to update, refine and enhance programs, the MPSC will design a simple reporting system that will give the MPSC the data it needs to report annually on the relative effectiveness of all energy efficiency programs offered by Michigan utilities;

10. A statewide energy efficiency program educational and promotional marketing effort, if undertaken in support of statewide energy efficiency goals, will be paid for by an identifiable kWh surcharge on customer bills;

11. An educational and promotional marketing effort, if undertaken, will be limited in scope and length of operation, will be proportional to estimated benefits, and will be reviewed annually, with the MPSC issuing a cost-benefit analysis;

12. Given that electric efficiency is not synonymous with energy efficiency, and that efficient electric products can use less *energy* than similar propane and natural gas products, an energy efficiency program will promote and encourage the use of such products where they are better for the state in terms of energy consumption and environmental impact. This will have the effect of replacing the loss of revenue from declining sales due to increased use of electrically efficient products, while increasing the total *energy* efficiency of the state and decreasing total carbon releases. By reducing the demand on natural gas and propane supplies, such measures will also potentially drive down the cost of natural gas and propane for consumers.

13. Since load shifting programs have the effect of further maximizing the efficiency of generation and help to cut power costs – with the savings then used to fund incentives for consumers to install controllable space conditioning systems – such load management efforts can be considered as energy efficiency programs and will be encouraged.