

Why Energy Efficiency and Renewable Energy

During the last half of the 20th Century, Michigan developed a voracious appetite for energy. By the year 2000, Michigan had the eighth highest total energy costs among all states. Part of this high energy use was attributable to desirable factors (*i.e.*, Michigan has been a major industrial state), but part was also due to energy waste. As examples, Michigan has had one of the weakest residential building energy codes in the nation; and, has lagged far behind the leading states in the level of utility energy efficiency programs for customers. As a result, the homes and businesses in Michigan consume far more energy than is necessary.

Compounding the problem with this high energy use is the fact that nearly all of the energy fuels used in Michigan must be imported from outside the state. Indeed, Michigan imports 100% of the coal; 96% of the oil and petroleum products; and three-fourths of the natural gas that we consume.

Michigan's economy was able to tolerate this high energy burden during the 20th century, for two primary reasons: energy prices were relatively low; and our own economic exports (particularly automobiles) provided sufficient economic inflow to sustain the economy. But since 2000, a number of factors have converged to turn Michigan's huge energy consumption into an economic crisis.

In particular – due in large part to soaring world demand for oil, coal, and natural gas –energy prices have increased dramatically. Michigan's costs for imported energy have roughly doubled since 1999, from about \$12 billion per year to roughly \$24 billion last year. That \$12 billion increase in dollar drain is essentially equivalent to the lost payroll from the closing of 120 major manufacturing plants. That is a huge blow to the state economy. When that tidal wave of cash outflow is combined with a severe decline in the sales of our principle economic product (*i.e.*, automobiles), the net effect on the state economy is the devastation we see around us today.

In the face of these enormous challenges, the Governor's statewide energy efficiency and distributed generation push is designed to specifically address both aspects of this economic crisis (*i.e.*, the energy dollar drain and the collapse of our primary industry). With energy efficiency and distributed generation, we can help Michigan residents save money on their utility bills, and create jobs for Michigan workers.

First, the major move the Governor has initiated toward energy efficiency and 'home-grown' renewable energy is exactly the strategy needed to help reduce the dollar outflow from the state for imported fuels. Less imported energy burned means less energy dollars leaving the state. Keeping more of those dollars in the state directly benefits the state economy.

Second, the Governor has attempted to use energy efficiency and renewable energy policy as a means of developing a clean energy industry in Michigan. The U.S., and the world at large, are moving toward a clean energy future. If Michigan can establish itself as an industry leader in the manufacture of these products, that will have a tremendous long-term payoff for the state economy.

Moreover, the delivery of energy efficiency programs itself has similar employment benefits for the state. Every bit of energy efficiency savings must be "mined" from local homes and businesses in Michigan, using local labor and suppliers. Quite simply, the goal is to employ Michigan "energy efficiency miners" rather than Wyoming coal miners.

Finally, the Governor's policy is very timely and forward-looking in terms of seeking to minimize future economic shocks to the state. In particular, energy industry experts agree that there will inevitably be significant costs attached to the emissions of CO₂ from the burning of fossil fuels. The Governor's policies

to increase the use of energy efficiency will directly help reduce the “carbon costs” that Michigan homes and businesses will face in the future.

In summary, for a variety of reasons, the Governor’s policy goals to substantially increase energy efficiency and renewable energy in Michigan are exactly what is needed to protect the economic interests of the state. The two key complementary objectives are to reduce the energy dollar drain and to build up a new clean energy industry – in other words, help people save money on their utility bills while creating jobs – through the following programs and initiatives:

Utility Energy Optimization Programs

In order for us to be successful in our energy efficiency goals, we must partner with our utilities. Public Act 295 of 2008 required all electric and natural gas utilities in Michigan to reduce electricity usage by 1 percent of demand by 2015 by establishing energy optimization programs designed to save ratepayers money by reducing the future costs of providing electric and natural gas to customers. These utility energy optimization programs vary from utility to utility, and include an emphasis on the use of Energy Star-qualified appliances, compact fluorescent light bulbs, and rebates for installing new, high efficient heating and cooling equipment. Consumers Energy customers can visit <http://www.consumersenergy.com/eeprograms> or call 1-800-477-5050. Detroit Edison customers can visit <http://www.dteenergy.com/residentialCustomers/saveEnergy/> or call 1-800-477-4747.

Regulatory decoupling

While these energy optimization requirements are a step in the right direction, implementing mandates without breaking the traditional method of utility rate structure is unlikely to be effective over the long-term. Instead, by adopting decoupling, we will be able to work with utilities to promote energy efficiency by giving financial incentives that encourage both utilities and consumers to reduce energy use. In a November 2, 2009 order for Consumers Energy, and a January 11, 2010 order for Detroit Edison, the Michigan Public Service Commission authorized these utilities to develop pilot symmetrical decoupling mechanisms in order to improve the ability of energy efficiency and distributed generation to operate within the utility environment.

Building Codes

One of the best ways to maximize energy efficiency in new buildings is to establish energy codes that reflect national standards or better. Michigan is on the road to improving its existing residential and commercial energy codes to mirror national standard energy codes. An ad hoc committee of building related stakeholders has been reviewing proposed changes to the residential and commercial energy codes. It is expected that they will make their final recommendations in February 2010; that the residential energy code will be equivalent to the 2009 International Energy Code Council (IECC) standard; and that the commercial energy code will be equivalent to the 2007 American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standard. (Adopting these national code standards is a requirement for states receiving American Recovery and Reinvestment Act funding through the State Energy Program.) As a result of these upgrades, Michigan should expect increased energy efficiency gains from newly constructed buildings.

Appliance Rebate Program

The goal of Michigan’s Appliance Rebate Program (which kicks off February 10) is to complement existing utility energy optimization programs by providing rebates for energy-efficient appliances not covered by

utility programs. Another goal is to reach rural areas not served by utility natural gas programs, and to push the marketplace by providing rebates for appliances that exceed the ENERGY STAR standards. Rebates will be available for the following appliances:

- Clothes Washers: Tier 3 - \$50
- Refrigerators: ENERGY STAR - \$50
- Refrigerators: Tier 3 - \$100
- Dishwashers: ENERGY STAR - \$25
- Dishwashers: Tier 2 - \$50
- Propane Furnaces - \$300
- Propane Water Heaters -\$100
- Oil Furnaces - \$300
- Solar Water Heaters – 20%, max \$1200

The Bureau of Energy Systems (BES) within DELEG will administer the program for the State of Michigan. Please visit <http://www.michigan.gov/energyoffice> or call (517) 241-6228 for more information.

Weatherization Assistance Program and LI-HEAP – Focusing on Low Income Populations

Michigan’s Weatherization Assistance Program (WAP) is a federally funded, low-income residential energy conservation program. The program provides free home energy conservation services to low-income Michigan homeowners and renters. These services reduce energy use and lower utility bills, thus creating more self-sufficient households.

Services include:

- Wall Insulation
- Attic Insulation and Ventilation
- Foundation Insulation
- Air Leakage Reduction
- Smoke Detectors
- Dryer Venting

A trained inspector will assess eligible dwellings for energy conservation needs. A typical inspection will include Blower Door testing for air leakage, Combustion Appliance testing for safety and efficiency, and a Health and Safety inspection. A computerized audit is the basis for determining which measures are most cost effective for each individual dwelling.

Eligibility is based on household income being at or below 200% of the federal poverty guidelines. Recipients of the Family Independence Program (FIP) administered by the Department of Human Services (DHS) or those who receive Supplemental Security Income (SSI) automatically qualify for this no-cost program.

Community Action Agencies/non-profit organizations provide weatherization services statewide. Eligibility is based on Federal poverty guidelines. For more information about the Weatherization Program contact your local Weatherization Operator. Refer to the [State Map of Weatherization Operators](#).

Financing Programs

Michigan Saves

Michigan Saves is an innovative program to help all types of Michigan energy consumers—businesses, institutions, and residents—afford energy efficiency and renewable energy upgrades. *Michigan Saves* will finance the installation of energy measures with no upfront cost to utility customers. Recently, the following progress has been made in implementing *Michigan Saves*:

- Members Credit Union approved an agreement with *Michigan Saves* to offer loans for an on-bill program for residential customers of Cherryland Electric Cooperative. The official pilot launch will occur in the next few weeks. To find out more, visit our website at www.michigansaves.org/cherrylandpilot.
- Consumers Energy filed a tariff with the Michigan Public Service Commission for a Michigan Saves pilot. The pilot would be an on-bill program for municipalities that want to upgrade their street lights with LED technology. This pilot is for municipalities with metered service that own their street lights.
- Michigan Saves coordinated with DELEG, the cities of Detroit and Grand Rapids, the Southeast Michigan Regional Energy Office, and other partners to submit a proposal to the DOE for a \$70 million grant to conduct energy efficiency retrofits in commercial corridors in Detroit and 39 neighborhoods in Grand Rapids, southeast Michigan, and other communities around the state over a three-year period beginning in mid 2010.
- Michigan Saves met with a large group of credit unions to discuss the details of a standardized loan product that could be offered by multiple credit unions as part of Michigan Saves financing structure; we've also had numerous meetings with banks, community development financial institutions, and other organizations to identify opportunities to leverage the initial \$6.5 million Michigan Saves trust fund

PACE

A Property Assessed Clean Energy (PACE) bond is a bond where the proceeds are loaned to commercial and residential property owners to finance energy retrofits (efficiency measures and small renewable energy systems) and who then repay their loans over 20 years via an annual assessment on their property tax bill. On December 2, 2009, Representative Rebekah Warren has introduced HB 5640, legislation to authorize local units of government to adopt PACE programs to promote the use of renewable energy systems and energy efficiency improvements by Michigan property owners. Representative Warren, who chairs the House Great Lakes & Environment Committee, plans to hold a hearing on her legislation on February 4, 2010.

Energy Efficiency and Renewable Energy in Schools

On April 22, 2009, the Michigan Public Service Commission awarded renewable energy and energy efficiency grants to Elkton- Pigeon-Bay Port Laker Schools, Great Lakes Energy Service, and Recycle Ann Arbor (doing business as Energy Works of Michigan). Energy Works of Michigan will use its \$3.5 million grant to administer the Michigan Renewable Schools Program, a 2-year project bringing energy efficiency and renewable energy improvements and education to multiple public and private K-12 schools throughout Michigan. The program is designed to demonstrate energy technologies, raise public awareness, and educate

the next generation so that they can fully contribute to meeting and exceeding the 2030 and 2050 carbon reduction targets.

Those interested in applying for consulting services, technical analyses, energy audits, or renewable energy installations through Energy Works can visit: www.energyworksmichigan.org.

State Energy Program

Michigan's State Energy Program is focused on saving taxpayers money by increasing energy efficiency in state buildings. Under the SEP-ARRA state formula allocation, Michigan has allocated \$57 million to be used to reduce energy consumption in state-owned government buildings and facilities, and to continue Governor Granholm's mission of saving taxpayer dollars through improved energy efficiency. This primary focus of the SEP builds on the Governor's previous actions to save taxpayer dollars with her issuance of Executive Directive No. 2005-4, which established an energy savings target of 10% reduction in energy use by the end of 2008 and 20% reduction in grid-based energy purchases by the end of 2015 for all state buildings; Executive Directive 2007-06, which required the DMB to develop a plan to further reduce energy use by departments and agencies within the executive branch by at least 10%; and Executive Directive No. 2007-22, which maintained the energy use reduction goal, the grid-based energy purchases reduction goal, and energy efficient product procurement provisions described above. Thanks to these previous initiatives, energy use by state agencies has already been reduced by 23% compared to 2002, exceeding the original 20% by 2015 goal.

Michigan's Renewable Energy Opportunity

No state has been hit harder by the worldwide recession and the historic restructuring of the auto industry than Michigan. As a result, we are focused like a laser on diversifying our economy into new sectors like clean energy, and we are working hard to develop the entire value of chain of clean energy industries by partnering with the private sector on both the supply and demand side of the clean energy industry.

On the supply side, Michigan is home to a host of great manufacturing companies, auto suppliers and others, who could easily diversify into supplying the wind manufacturing industry – companies that produce gearboxes, ball bearings, brake pads, and know how to automate manufacturing production processes. To help our suppliers along, the State has partnered with the incredibly talented team at Next Energy in Detroit, an amazing resource for companies looking to diversify. Next Energy works directly with all the major wind turbine manufacturers in the world, gets to know their procurement staffs, and sets up matchmaking meetings with Michigan suppliers who would be a great fit for their needs. Next Energy has identified over 1000 Michigan companies that could supply the wind industry. In the past couple of years, these matchmakings have resulted in over \$675 million of business to Michigan manufacturers.

In the small wind sector, we are already the proud home of two major small turbine manufacturers, Mariah Power's Windspire and Cascade Engineering's Swift turbine. Mariah Power's decision to invest in Michigan is a great example of the benefits of locating in a manufacturing state like Michigan. Mariah had a direct competition between sourcing their parts from China, or sourcing them from Michigan, and Michigan won. Our expertise and innovation, down to the line workers they are using who worked in auto plants their whole careers, made it cheaper for them to produce parts in Michigan than in China, and they produced them better. Overall, we have a robust and growing wind supply chain of over 70 companies in Michigan already, doing hundreds of millions of dollars in business annually, and we have hundreds more companies that are hungry to get into this growing sector, and have the expertise to do it.

On the demand side, we have a renewable portfolio standard of 10% by 2015, and we are expecting over 2300 new megawatts of wind to be sited in Michigan over the next few years.

Michigan is very well positioned to prosper from this growth given our manufacturing expertise, our growing in-state demand, and our easy access to Great Lakes shipping and other transportation routes to supply the Midwest and Eastern States.

To complement our RPS, we are working hard to increase distributed generation (DG) in Michigan. DG is electricity generation from many small energy sources located at the point of use, such as solar rooftops or small-scale wind, instead of from large, centralized facilities, such as coal, nuclear and gas-powered plants. DG is typically owned and operated by electricity customers themselves to reduce energy costs, boost on-site power reliability, and improve power quality. With distributed generation, we can help Michigan ratepayers save money on their utility bills, and create jobs for Michigan workers.

The Michigan Public Service Commission's Electric Interconnection and Net Metering Standards became effective on May 27, 2009. The new rules revise the MPSC's interconnection rules and implement the net metering provision in Public Act 295. As Michigan continues to make changes to improve the state's net metering program, participation has more than doubled each year since the program started in 2005. As of June 2009, 137 customers were participating in the program.

The new rules significantly streamline the interconnection process and improve net metering for residential customer projects. In fact, Michigan's new program is such an improvement that in the national *Freeing the Grid* scorecard, our state's net metering "grade" improved from the "F" received in both 2007 and 2008 to a "B" in 2009.

Detroit Edison's "SolarCurrents" program, available to Detroit Edison net metering customers, provides a further incentive for DG, and is similar to a small feed-in-tariff. The program is limited to 5 MW capacity, solar PV only, and at least half of the program is reserved for residential customers. Customers receive a contract term of 20 years, an up-front payment of \$2.40 per watt (estimated 25% of total system cost, including modest ROI), plus annual payments of 11¢/kWh for renewable energy credits (RECs) (estimated ~25% of total system cost). As of mid-December, 121 applications had been received, including 91 residential applications. Assuming a 2 kW residential solar PV system average size, the program has space for over 1,200 residential systems. Those interested should visit www.dteenergy.com/solar.

In Consumers Energy's similar "Experimental Advanced Renewable Tariff for Solar PV," participating customers are not part of the net metering program. The program is limited to a total of 2 MW (2,000 kW), with 500 kW reserved for residential customers. Prices paid range from \$0.65/kWh to \$0.375/kWh. The contract term is up to 12 years. Those interested should visit <http://www.consumersenergy.com/welcome.htm?/products/index.asp?ASID=827>.

While these small voluntary FIT-like programs are a step in the right direction, Governor Granholm is interested in exploring the adoption of a statewide Feed-in-Tariff (FIT) for Michigan. A FIT is policy that sets a fixed guaranteed price at which power producers can sell renewable power into the grid. With a statewide feed-in-tariff, Michigan could become one of the first states in the nation to empower utility customers to become energy entrepreneurs – making money by installing solar panels or wind systems on their homes and selling renewable energy back to the power company at a fair, pre-set price. Every rooftop of every home, school, and business could house small, energy-generating systems that would produce clean energy, make money for Michigan residents, and create jobs for Michigan workers.