Charting a New Path for Michigan's Electricity Generation and Use

Michigan's energy future is at a crossroads

One path leads to increased dependency on fossil fuels—threatening our economy and fueling global warming. The other leads to a new, smarter energy future for Michigan. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in Michigan, save families and businesses money, and make America more energy independent. Clean energy is also the most effective solution to the threat of global warming. We can start making progress right away using proven technology, and then draw on American innovation to take us the rest of the way with new technologies.

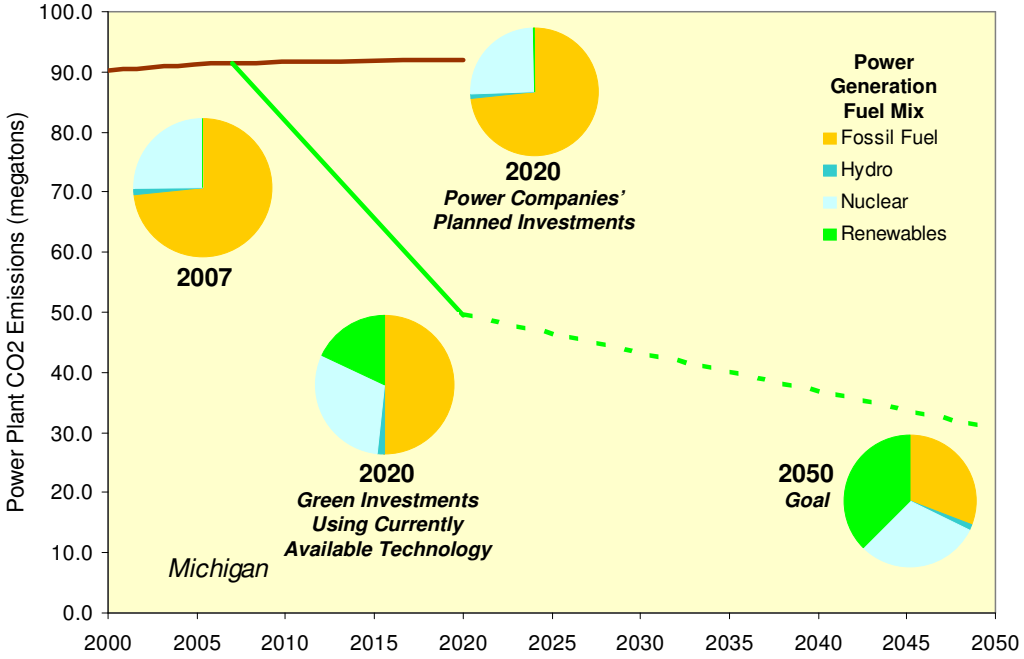
How does Michigan generate electricity today?

In 2007, electric power generated in Michigan primarily came from coal (53.6 percent), oil (4.1 percent), gas (10.1 percent), and nuclear (25.3 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Michigan power companies plan to increase the energy generation from coal by 0.5 percent. Less than 0.1 percent of electricity generated in Michigan is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Michigan has a choice to invest in a cleaner energy future

Michigan can achieve a new energy future by making better investments as utilities replace increasingly aged infrastructure and expand capacity. An important first step is for Michigan to generate at least 20 percent of electricity from renewable sources by 2020, a goal readily achievable with today's technology. Continuing to convert 15 percent of the state's energy portfolio to renewable energy sources each decade could yield an energy profile of at least 65 percent renewables by 2050.

Michigan can also benefit from improved energy efficiency. Technologies are available that could reduce demand nationally by 20 to 30 percent over the next decade. Innovations in energy efficiency should allow us to keep demand constant after 2020, even as the population grows.



About the chart: 2000, 2007 and 2020 Power Companies' Planned Investments from CARMA 1.0 (www.CARMA.org). The 2020 Green Investments projection assumes that, using currently available technology, Michigan makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from fossil fuels so that 20 percent of power generation is from renewable energy sources. The 2050 Goal assumes (1) hydro and nuclear are unchanged, (2) continued efficiency improvements keep total demand flat, and (3) renewable energy replaces at least 65 percent of power generation formerly done through fossil fuel burning. Note that the projection of future CO_2 emissions from fossil fuels assumes no investment in carbon capture and storage.

Making a Difference in Michigan

Mayor Virg Bernero of Lansing has emerged as green leader in the state. Bernero has set goals for Lansing to produce 10 percent of its energy through renewable sources by 2010, 15 percent by 2015, and 20 percent by 2020. The Greater Lansing Go Green! Initiative is working to make city facilities more energy efficient and help local communities, business and schools go green. Lansing's Urban Option non-profit also helps individuals reduce their energy needs by providing information and education, installing and repairing renewable energy systems, and installing energy saving devices in homes. Urban Option has been around for 30 years and reaches about 60,000 people a year.

Large companies throughout the state are aggressively cutting energy consumption. In Detroit, the GM headquarters performed an energy overhaul by installing energy efficient heating and cooling, lighting, and windows. The center now saves about $500,000 a year on energy costs.

Sources:
http://www.urbanoptions.org/about_us.php
http://www.lansingmi.gov/get_city.jsp
http://www.urbanoptions.org/RenewableEnergy/EnergyEfficiencySuccessStories.htm

Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Michigan can reduce its future carbon dioxide (CO_2) emissions from electricity generation by 46 percent compared to the business-as-usual path that utilities are following now.

Given that 39 percent of Michigan's CO_2 emissions come from electricity generation, diversifying and updating our power sources is critical for cutting the state's total global warming pollution.

Increasing Michigan's energy and economic security

Investing in renewable energy sources will reduce Michigan's dependence on fossil fuels and at the same time create new green collar jobs. A new energy future in Michigan could include:

Expanded solar power. Michigan has enough solar resources to produce 4,000 to 4,500 Whr per square meter using photovoltaic systems and 3,000 to 3,500 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Michigan to solar power can provide enough electricity for about 0,900 households each year.

Expanded wind power. Michigan is currently ranked 25th for wind power, with 0,055 MW of existing electricity generation capacity and 60 MW under construction. The American Wind Energy Association ranks Michigan 14th in terms of its future wind potential, with 7,460 MW of potential capacity.

Biomass power. Michigan has 12.2 million dry tons of biomass available each year that could be used to generate about 2,400 MW of electricity.

New jobs. Committing to a 30 percent growth in solar energy use in the United States will bring 613 jobs and $498 million investment to Michigan.

A stronger economy. Michigan could realize as many as 8,549 jobs manufacturing wind turbines and $2.85 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

Consumer savings. Reducing electricity demand in Michigan by 15 percent below what is projected for 2023 could result in 3,888 jobs and a cumulative net savings of $693 billion.

References and Additional Reading:

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Renewable Energy Policy Project, www.repp.org.

For more information, visit www.nwf.org/globalwarming.