



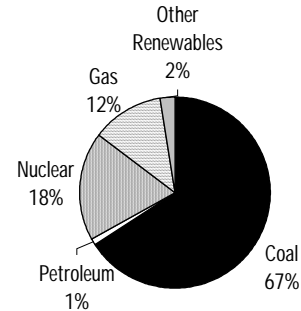
Renewing Michigan

A National Renewable Energy Standard Will Benefit Michigan's Economy

America's energy choices affect our national security, our economy, our family budgets, and our environment. UCS examined a national policy to increase the United States' use of renewable energy to 20% of electricity supplies by 2020, called a renewable portfolio standard (RPS). This fact sheet shows that under a national RPS of 20%, Michigan has the potential to meet a significant portion of its electricity needs with renewable energy while generating substantial economic and environmental benefits for the state. See our briefing *Renewing Where We Live* for more information on the benefits of a renewable energy standard for the Midwest.

Current Electricity Mix. Michigan is heavily reliant on coal, nuclear power, and natural gas to generate its electricity. All of the coal and nuclear fuel is imported into the state, exporting dollars and jobs in the process. Renewable energy sources such as bioenergy, landfill gas, and wind power currently provide only a small amount of the state's electricity. In 2000, Michigan used about the same amount of electricity that was generated in the state.

Michigan's Electricity Mix, 2000



Michigan's Renewable Energy Potential

Resource	Generation (billion kWh)	% of 2000 Electricity Sales
Wind	73.6	71%
Bioenergy	17.6	17%
Landfill Gas	1.0	1%
Total	92.2	89%

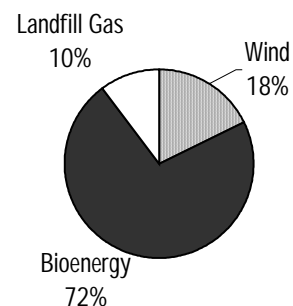
Renewable Energy Potential. Michigan has the technical potential to generate at least 89% of its current electricity needs from renewable energy. The resources with the greatest potential in Michigan are wind and bioenergy. Emerging renewable technologies such as solar photovoltaics also have the potential to play a smaller but important part in the state's electricity supply. Not all of Michigan's renewable potential will be developed due to economic, physical, and other limitations.

Renewable Energy Development. The UCS analysis found that under the 20% national standard, Michigan would produce the equivalent of 6% of its electricity use from renewable energy (not including hydro) in 2010 and 12% in 2020. Michigan meets over half the national target in 2010 and 2020 with its own renewable energy. Michigan could minimize the cost of the standard by meeting the rest of the target through renewable energy credit trading. The vast majority of the development would come from Michigan's plentiful and cost-effective bioenergy sources.

Economic Development. Renewable energy development would bring significant economic benefits to Michigan. Between 2002 and 2020, a 20% national standard would produce

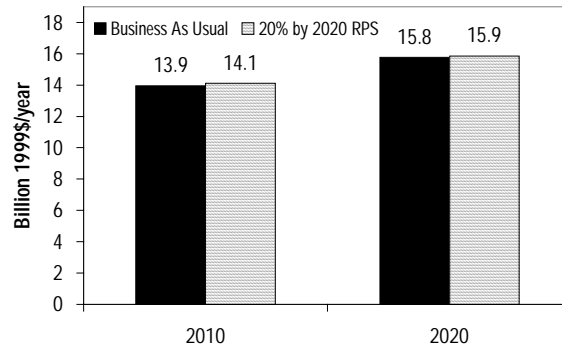
- \$750 million in new capital investment in Michigan
- \$37 million in new property tax revenues for local communities
- \$10 million in lease payments to farmers, ranchers, and rural landowners from wind power¹

Renewable Energy Mix in Michigan under 20% RPS



Consumer Costs and Benefits. A national standard of 20% would be affordable to Michigan consumers. Total annual consumer energy bills (not including transportation) would be 1% higher than under business as usual in 2010 and 0.5% higher in 2020. The present value of total consumer costs would be just 0.4% higher between 2002 and 2020. Lower natural gas prices caused by increased competition from renewable energy offset almost all of the slightly higher costs of generating renewable electricity in the state.

Total Consumer Energy Bills, Michigan^a



^aExcludes transportation

Environmental Benefits. The increased use of renewable energy in Michigan would help reduce air pollution in the state and surrounding region. Power plant emissions of carbon dioxide, which is fueling global warming, would be 16% lower in the Midwest by 2020 than without the renewable energy standard. Other pollutants that harm human health would also be reduced by a national standard of 20% by 2020.

Additional Renewable Energy and Energy Efficiency Policies Increase Benefits

UCS examined the impact of increasing energy efficiency along with a renewable energy standard. The Renewable Energy and Energy Efficiency Act of 2001 (S. 1333) combines a 20% RPS, net metering, and a public benefits fund. Combining these policies turns consumer costs into consumer savings, greatly increases economic development and environmental benefits, significantly reduces natural gas prices, and provides additional diversity benefits compared to the 20% standard alone. Increasing both energy efficiency and renewable energy is the best option for Michigan.

A 10% Renewable Energy Standard Would Have Fewer Benefits

UCS also looked at what would happen under a renewable energy standard of 10% by 2020, similar to a provision in the Senate’s Energy Policy Act of 2002 (S. 1766), introduced by Senators Daschle (D-SD) and Bingaman (D-NM). Under a 10% standard, Michigan would achieve savings on consumer energy bills, but would also achieve less diversity, capital investment, and fewer environmental benefits than under a 20% standard. The added diversity, economic development, and environmental benefits make the 20% renewable energy standard the preferred option for Michigan.

Impact of National RPS Proposals in Michigan

In 2020:	20% RPS	Combined Policies of S. 1333 ^a	10% RPS
Cumulative New Capital Investment	\$0.8 billion ^b	\$4.8 billion ^c	\$0.3 billion
Cumulative Consumer Energy Bill Savings ^d	-\$0.7 billion	\$2.9 billion	\$0.8 billion
Changes in Annual Consumer Energy Bills ^d	\$0.1 billion 0.5%	-\$1.4 billion -9%	-\$0.4 billion -2%
Changes in Annual CO ₂ Emissions from regional power plants	-16%	-25%	-5%

Notes

- a. Includes 20% RPS, 2 c/kWh public benefits fund charge, and net metering.
- b. All dollars presented in 1999\$.
- c. Includes investments in energy efficiency.
- d. Excludes transportation.

The Union of Concerned Scientists is a nonprofit partnership of scientists and citizens combining rigorous scientific analysis, innovative policy development, and effective citizen advocacy to achieve practical environmental solutions. For more information, visit our web site at www.ucsusa.org/energy.

¹ Results presented are in 1999\$. Cumulative results are in net present value using a 5% real discount rate.