

Great Lakes Bay Regional Energy Efficiency, Conservation and Renewable Energy Strategy



A framework for collaboration to reduce energy use and expand renewable energy efforts in Bay, Saginaw and Midland Counties.

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PLEASE NOTE THAT THIS STRATEGY IS IN DRAFT FORM, WITH SPECIFIC PROGRAMS, TIMEFRAMES, AND PARTNERS STILL BEING DISCUSSED AND REFINED. WE LOOK FORWARD TO COMMUNITY INPUT ON THIS DRAFT STRATEGY, AND THE ACTIVE ENGAGEMENT AND PARTNERSHIP OF THE COMMUNITY GOING FORWARD AS WE IMPLEMENT THE PLAN.

--- Bay, Saginaw, and Midland Counties

INTRODUCTION

BACKGROUND

In early 2010, the State of Michigan Department of Energy, Labor, and Economic Growth, through funding from the Department of Energy (DOE), awarded Michigan communities grants to advance the goals of DOE's Energy Efficiency Conservation Block Grant program (EECBG). Specifically, the State wanted communities to help find ways to reduce the millions of dollars that leave the state annually due to inefficiencies in our building, transportation, and other sectors, which contribute to high utility and maintenance costs and environmental degradation.

Collectively, the Great Lakes Bay communities responded to the opportunity to further develop energy efficiency, conservation, and renewable energy programs that would help the State meet these goals. The communities of Bay, Saginaw and Midland, and their economic development corporations had been working collaboratively for several years to foster and grow the alternative energy sector, particularly the solar photovoltaic, wind industry, and battery industries. Substantial effort and progress has been made in creating a hub of alternative energy manufacturing and deployment in the Great Lakes Bay region. Some key accomplishments include:

- Formation of the Great Lakes Bay Economic Development Partnership and *Solar Advantage* (MIGreatLakesBaySolar.com) which is focused on aggressively pursuing attraction of new and expanded solar manufacturing to the region. To date, there has been over \$3 billion of investment in solar manufacturing facilities by companies such as Dow Chemical, Dow Corning, Hemlock Semiconductor, Evergreen Solar, Suniva, and GlobalWatt
- Recognition and designation of Saginaw Bay and central Lake Huron as a favorable location for offshore wind development by the Michigan Wind Energy Council
- Investment in several on-shore wind projects including initial plans by Next Era Energy for a 66 turbine 100 megawatt commercial wind park in Bay and Tuscola Counties.

- Investment of \$665 million in the construction of Dow Kokam's 800,000 square-foot advanced lithium-polymer battery plant in Midland.
- Preliminary design by Cirque Energy, LLC of a biomass-powered energy facility to provide steam and electricity for Dow Corning Corp.'s Midland manufacturing site. The facility would use specialized gasification technology and emissions controls to provide the lowest possible air emissions and be independently certified by the Forest Stewardship Council or Sustainable Forestry Initiative.

The Great Lakes Bay communities have developed this Regional Energy Efficiency, Conservation, and Renewable Energy Strategy (Strategy) to enable our communities to build upon and expand these existing efforts, and proactively pursue strategies for reducing energy use in our municipal, residential, commercial, and industrial sectors. The Strategy is a key part of the region's planning efforts, and lays the ground work for prioritizing and collaborating on efforts to:

- Conserve and reduce overall energy use in the region
- Improve the energy efficiency of our buildings and transportation infrastructure, and
- Meet a growing share of our energy demand with alternative energy sources, particularly those produced in the region.
- Update our electricity infrastructure network with digital technology for smart grid two way digital communications for transmission and distribution.

PROCESS FOR DEVELOPING THE GREAT LAKES BAY REGIONAL ENERGY STRATEGY

The communities of Bay, Midland, and Saginaw Counties began working on efforts to collaborate in the development of a regional strategy in August 2009. A group of municipal and community stakeholders from the region was invited to a meeting hosted by the Counties and Saginaw Valley State University, and facilitated by Shepherd Advisors consulting. The group discussed opportunities for working together on projects to reduce energy use and promote the development and deployment of renewable energy in the region. As a result of that meeting, several of the communities applied for grant funding from the State of Michigan to develop a regional strategy, as well as identify and implement energy efficiency and renewable energy projects in their own communities.

With awards of grant funding, the communities came back together for a series of meetings to identify specific goals and objectives for energy efficiency and renewable energy, and begin identifying the specific projects or efforts that the communities would collaborate on. In November, 2010, the communities invited a group of stakeholders from throughout the region – representing industry, utility, environmental, waste management, transportation, and community planning sectors – to a meeting to further discuss and refine energy goals and

objectives for the region. This group (list of attendees included in Appendix A) provided thoughtful and substantive input, and helped prioritize key areas for collaboration.

After further refinement by the community Strategy team, the document was made available to the general public, and the communities hosted a meeting on January 12, 2011....*[to be completed after public meeting].*

GREAT LAKES BAY REGIONAL ENERGY GOALS

Through the process described above, the Great Lakes Bay communities have identified regional energy goals and priority areas of collaboration to help achieve those goals. The Great Lakes Bay partners are committed to working together to reduce energy use and accelerate deployment of renewable energy technologies throughout the region. Specific goals include:

- Achieve significant fossil fuel energy reductions in municipal facilities, fleets, operations, and transit offerings through energy efficiency and renewable energy efforts
- Serve as a leader for, and support efforts of residents and businesses in the region to reduce their energy consumption and deploy renewable energy technologies
- Foster a renewable energy market transformation in the region that supports and attracts renewable energy investment and jobs, increases the value of, and desire for renewable energy by our residents and businesses, and increases local access to best in class renewable energy technologies

PRIORITY REGIONAL ENERGY COLLABORATION EFFORTS

In order to achieve the regional energy goals, the Great Lakes Bay communities have identified several priority areas of collaboration. The efforts proposed below include short term and longer-term activities, and will require varying level of resources.

1. ATTRACTING AND RETAINING ALTERNATIVE ENERGY INDUSTRY IN THE GREAT LAKES BAY REGION

The Great Lakes Bay communities have made significant progress over the last 5 years in aggressively attracting alternative energy industry (solar, wind, and advanced battery) to the Region through the Great Lakes Bay Economic Development Partnership. This Strategy builds on those efforts, and outlines key priorities for collaborating on support marketing, incentive programs and policies, and deploying renewable energy technologies to show leadership and help accelerate market penetration. The objective of the collaboration is for the Great Lakes

Bay region to be known globally for its substantial number of renewable energy projects and its significant position in the renewable energy manufacturing market. Priority areas for further collaboration include:

1.1 Work with community action agencies, industry, and redevelopment organizations at a regional level to create one or more “Innovation Centers” or “Renewable Energy Subdivisions” in the Great Lakes Bay region.

Cobblestone Homes and Dow Advanced Materials’ recently built and showcased their Net Zero Energy Home in Bay County. The communities would like to build on this effort, and expand it to encourage additional homes in other parts of the Great Lakes Bay region or promote the creation of a subdivision of similar homes around the current Bay County property which would utilize distributed renewable energy technologies such as small wind, solar PV systems, solar thermal technologies, and geothermal systems. Providing additional examples to community members about the options, aesthetic appeal, and realities of building energy efficient homes will help create market penetration for green building technologies and demonstrate the significant energy and cost savings that can be achieved by homeowners.

The communities, in partnership with regional businesses that provide energy efficiency and renewable energy technology and services, will work together to explore options for obtaining funds to expand this effort, integrate an innovation center or subdivision as part of community action agencies’ weatherization processes, and/or create education and technical training opportunities around the construction of energy efficient homes.

Potential Partners: Economic Development and Planning Departments from Cities and Counties in Midland, Bay, and Saginaw Counties; Saginaw County Community Action Committee; Mid-Michigan Community Action Agency; Cobblestone Homes, Dow Chemical, local building suppliers.

Timeframe: tbd

1.2 Provide continued and expanded support for Bay Future, Midland Tomorrow, and Saginaw Future to continue and expand efforts to attract and retain renewable energy business to the region.

Building on the significant success of these organizations to develop the renewable energy industry in the region, the communities commit to continue support for the economic development agencies to:

- Pursue marketing and attraction efforts of new global renewable energy manufacturers to the Great Lakes Bay Region
- Support state programs and policies that assist existing renewable energy manufacturers in their efforts to expand in Michigan and the Great Lakes Bay Region

- Increase support for small to mid-sized manufacturers in the Great Lakes Bay Region to diversify into the renewable energy manufacturing industry.
- Create expanded opportunities for alternative energy workforce training, such as Delta College's Solar Manufacturing Fast Start and Wind Technology programs, in order to create a highly-qualified, regionally-based talent pool for renewable energy manufacturing and project development.

Potential Partners: Cities and Counties of Saginaw, Bay, and Midland; Saginaw Future Inc.; Midland Tomorrow; Bay Future Inc.; Michigan Works, SVSU and Delta College.

Timeframe:

2. REGIONAL ENERGY STAKEHOLDER ALLIANCE

Working together as a region on energy reduction and renewable energy generation requires communication, coordination, and leadership among the Great Lakes Bay communities. A key area of collaboration includes:

2.1 Establish a regional Energy Stakeholders Alliance/Team that would come together on a regular basis to discuss areas of collaboration, help guide planning and implementation of regional energy projects, and be a recognized source of information and coordination on regional energy issues

In order to maintain momentum in pursuing the goals and efforts included in the Strategy and effectively track progress, a team of regional stakeholders must be charged with continuing to champion regional collaboration on energy conservation and renewable energy. The Regional Energy Team should help identify opportunities and pursue funding for collaborative energy projects, and be a resource for coordinating multi-jurisdictional grant applications.

To be most efficient with resources and time, the Regional Energy Team should be established as a subgroup or part of an existing regional group such as the Great Lakes Bay Alliance. The group should meet at least bi-monthly, and identify a team "lead" each year.

Potential Partners: Saginaw County, Midland County, Bay County, City of Saginaw, Bay City, City of Midland, other cities/townships in the region, Michigan State University Extension, Great Lakes Bay Alliance, community groups/non-profits representing housing, waste, transportation, and environmental interests, industry representing renewable energy manufacturers, utilities, large energy users, or other energy service providers.

Timeframe: Each community will identify 2 -3 municipal, business or community representatives by February 2011. The Energy Team will begin meeting by March, 2011.

3. TRANSPORTATION

The Great Lakes Bay Communities will work together on transportation efforts that reduce fossil fuel-based energy use in the region. The three (3) County Transit Authorities are already working together to address regional transportation issues that reduce costs, expand services and find system efficiencies. These efforts should be built upon to provide strong transportation services to the region that are focused on reducing our use of fossil fuels. Priority areas for collaboration include:

- 3.1 *Explore options for increasing mass transit and cross-community commuter transit services, such as development of a commuter loop between the 3 counties; standardize services and fare structures, and utilizing bus rapid transit (BRT) or light rail.*

Finding opportunities to increase public mass transit options for our communities will help reduce single occupancy vehicle trips and their associated energy use (and greenhouse gas contributions). Many communities throughout Michigan and the nation are working together across municipal boundaries to not only offer expanded transit options, but educate the public about the benefits and ease of mass transit options.

The communities, through the Transit Authorities, will evaluate mass transit options by looking at best practices from other communities, identifying key user needs, considering costs and barriers to implementation, and recommending plans of action for more integrated and expanded transit services to leadership in the three communities.

Potential Partners: Midland, Saginaw, and Bay Transit Authorities, Clean Energy Coalition

Timeframe: discussions on these issues are already underway within and between the Transit Authorities. The groups should come together with initial evaluation and recommendations regarding options by the end of 2011.

- 3.2 *Support implementation of the regional non-motorized transportation/pathways plan that promotes pedestrian and bicycle-friendly transportation alternatives and community development.*

The region has already developed a Tri-County Pathways plan (<http://www.baycounty-mi.gov/Docs/Transportation/Reports/Tri%20City%20Regional%20Path%20Study-Phase%201.pdf>) and all three Counties have non-motorized transportation plans. The communities should support the implementation of measures identified in these plans to create a region that offers substantially improved options for transportation by pedestrians and bicycles. These efforts will reduce transportation energy uses in the region and reduce our contribution to global climate change.

Potential Partners: Bay, Saginaw, and Midland Counties; Michigan Department of Transportation, Bay Region, BACF Riverwalk/Railtrail, Friends of the Pere Marquette, JCF/WIN

Timeframe: ongoing

3.3 *Create a regional Car Sharing/Ride Sharing program to encourage carpooling and reduce the number of single occupancy vehicle trips in the region*

Transit Authorities will evaluate options for creating a regional car/ride sharing program in the region such as “zip car” or other ride sharing networks and Park and Ride space needs along the US-10 and I-75 corridors. Many communities across the state and country are investing the purchase of vehicles for car share programs, or are hosting and sponsoring ride share networks through existing or new social media-type programs. The communities will explore best practices from other regions and make recommendations to leadership within Great Lakes Bay about options for implementing car or ride sharing programs.

Potential Partners: Midland, Saginaw, and Bay Transit Authorities, Clean Energy Coalition; Saginaw Valley State University; Michigan Department of Transportation

Timeframe: Evaluate options and make recommendations to regional leadership by end of 2011. Implementation is dependent on available funding.

3.4 *Develop an alternative energy fuel plan and program for the region’s fleets that will reduce green house gas emissions associated with traditional fossil fuels (e.g., biofuels, electric vehicles, engine conversion).*

There are significant options and occasional grant funding available to help communities reduce fossil fuel use and greenhouse gas emissions by implementing infrastructure for and utilizing alternative fuels or engine technologies. The Great Lakes Bay communities should cooperatively evaluate options and develop a plan for reducing fossil fuel use in its public transit, waste collection, school bus, and/or utility fleets.

Potential Partners: Saginaw, Midland, and Bay Counties (Transit and Waste Authorities, Purchasing, Parks and Recreation), Midland Public Schools, Bay City Public Schools, Saginaw Intermediate School District.

Timeframe: tbd

3.5 *Create plan and invest in infrastructure for significant deployment of electric vehicles throughout the region, including installation of electric vehicle charging stations, and working with auto companies to focus marketing and roll out of electric vehicles in the region.*

Several communities, including Bay City and Bay County have already begun establishing public charging stations to support use of electric vehicles in the region. The Regional Energy Team will explore funding opportunities for purchase and deployment of electric

vehicle charging stations to build on these efforts, and reach out to the auto industry to discuss options for marketing and roll out of electric vehicles in the region.

Potential Partners: Cities, Townships, and Counties in the region (those who are interested in installing charging facilities), the State of Michigan, General Motors, Ford, Consumers Energy, vendors

Timeframe: Work has already begun by Bay City and Bay County. Communities should work with industry and utilities, and pursue funding options in 2011. Installation of 2 – 3 public charging stations completed by 2013 (depending on funding availability).

4. SUPPORT PRIVATE SECTOR EFFORTS TO ACHIEVE ENERGY REDUCTION

In addition to reducing municipal energy use and deploying renewable energy technologies within public facilities and fleets, the Great Lakes Bay Region partners will collaborate to support and private sector efforts to achieve fossil-fuel energy reductions. Key areas of collaboration include:

4.1 Create a funding pool that will leverage existing utility, state, and community group efforts to provide regional businesses complete energy audits at their facilities.

The Counties will work together to seek funding through grants, partnerships with local utilities or other companies, or other funding sources, to create a funding pool that would be available to regional commercial business owners to complete energy audits at their facilities that will help them to identify potential energy and cost savings

Potential Partners: the State of Michigan, U.S. federal agencies (e.g., Department of Energy, Environmental Protection Agency), Consumers Energy, SVSU, banks/credit unions, Michigan Saves

Timeframe: Explore options, begin discussions with potential partners, and seek funding in 2011.

4.2 Promote the development and use of green home building products in the region, through education and creation of residential demonstrations of energy efficient and/or net zero homes.

The field of green home building is rapidly advancing and there are numerous building products and processes that can result in significant energy savings. The Counties should work proactively to support green building practices and help demonstrate the cost effectiveness and aesthetic characteristics of these types of home.

The communities could build on the existing Cobblestone Homes/Dow Advanced Materials net-zero home project in Bay County, and look for opportunities to expand this to entire subdivision or to other homes in the region. The Counties will promote these properties and work with the sponsoring builders and homeowners to help find opportunities for incorporating these homes into outreach and education efforts throughout the communities.

Potential Partners: Cobblestone Homes, Dow Advanced Materials, other green builders in the region, local green building technology vendors, Saginaw, Bay and Midland County Planning/Zoning staff, State of Michigan

Timeframe: tbd

- 4.3 *Host a regional energy summit to help educate residents and businesses about energy efficiency opportunities, including relevant technologies, rebates, service providers, and partners.*

Several other communities in Michigan have organized and hosted community energy summits that bring together residents, businesses, utilities, energy technology vendors, and educators to showcase, teach and connect these resources and advance the community's knowledge of energy efficiency and renewable energy options for their homes and businesses. There are utility rebates, state loan programs, and other funding sources for businesses and homeowners to install energy efficiency and renewable energy technologies, but many people simply do not know what technology options are available or appropriate for their needs. A regional energy summit will help educate the community about these opportunities, accelerate private sector deployment of these technologies, and grow local green/energy-related businesses.

Potential Partners: SVSU, MSU Extension, local energy-related businesses (e.g., energy efficiency contractors, solar, wind, geothermal or other renewable energy technology companies), Bay, Midland, and Saginaw Counties

Timeframe: begin planning in early 2011 and host summit by 3rd Quarter 2011

5. WASTE MANAGEMENT

Given the substantial energy savings opportunities from reducing waste, and the potential for generating energy from waste, the Great Lakes Bay region will work together to reduce waste generation and broadly deploy technologies to convert biomass, landfill gas, and other waste materials into energy across Midland, Saginaw, and Bay Counties. Areas of potential collaboration include:

- 5.1 *Collaborate on waste management plans throughout the Great Lakes Bay region to increase efficiencies, leverage resources, and better capitalize on opportunities for waste energy generation*

Potential Partners: Saginaw County, Bay County, Midland County, local cities and townships, Midland Area Recycling Center, Bangor Township "Green Team"

Timeframe: TBD

- 5.2 *Sponsor and host regional recycling events for targeted materials such as electronics or fluorescent bulbs, and increase regular recycling sites for CFL bulbs throughout the region*

Several of the individual communities with the region offer special types of recycling events and increasingly community businesses are offering expanded opportunities for recycling CFLs. Bay, Midland, and Saginaw Counties (and their respective cities and townships) will work together to offer regional special recycling events for targeted materials such as electronics, construction materials, etc. In addition, the communities will partner to expand CFL recycling by exploring opportunities for joint purchasing of recycling bins/disposal contracts to be offered at each community's recycling center, as well as jointly working with local hardware and other commercial outlets to offer CFL recycling in their stores.

Potential Partners: Saginaw, Bay, and Midland County Waste Management/Recycling teams, local hardware stores that sell CFLs, SVSU, electronics recycling companies, Do-All Inc, community service groups

Timeframe: tbd

- 5.3 *Provide support (technical or financial) to industry to conduct waste audits and expand industrial waste recycling outlets that will reduce waste streams and identify opportunities for using waste feedstocks for energy generation.*

Potential Partners:

Timeframe:

- 5.4 *Work with existing landfill methane recovery projects to explore opportunities for expansion and use of recovered energy by others in the region, and use of tire-derived fuel.*

Potential Partners:

Timeframe:

- 5.5 *Develop a region-wide recycling and green building policy for new construction projects in Bay, Midland, and Saginaw Counties.*

The City of East Lansing recently passed the state's first green building policy for new municipal and private sector construction projects that requires or incents use of LEED or other green building strategies in new construction projects. Offering a regional green building and recycling policy will allow the Great Lakes Bay communities to be leaders in community green infrastructure, and provide consistency for local builders in terms of green building requirements.

Potential Partners: Bay, Saginaw, and Midland Counties, non-profit recycling groups or coalitions such as Midland Area Recycling Center, Michigan Municipal League, local green builders

Timeframe: tbd

STRATEGY SUSTAINABILITY

The goals of this Strategy are to reduce municipal, residential, and private sector energy use, and find greater ways to deploy and utilize renewable energy to supply the region's energy needs. The specific objectives and efforts identified above are ambitious and will require significant cooperation, dedication of staff and community time, and of course fiscal resources. All of these can be limiting to the Region's ability to accomplish its goals, but the Strategy now provides the framework for prioritizing efforts, working collaboratively to pursue funding and share resources, and yield greater opportunities for partnering with the state and federal government.

Based on the timeframes for each effort identified in this strategy, the communities will identify appropriate partners and pursue individual efforts as resources allow. The Regional Energy Team will help set direction, bring together relevant parties, monitor the communities' progress in pursuing these efforts, and assessing energy and cost saving impacts of the efforts identified in this strategy. The Regional Energy Team, with support from Bay, Saginaw, and Midland County and economic development agency staff, will provide bi-annual updates on progress in achieving the Strategy goals to the leadership and public of the 3 Counties.

As progress is made in achieving energy conservation and renewable energy goals, the Great Lakes Bay partners will assess progress and refine the Strategy to meet current goals and community needs.