



Catalog of State Actions Cross-Cutting Issues (CCI) Technical Working Group

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A catalog of state-level, GHG-reducing actions and policy options prepared by the Center for Climate Strategies (CCS), Michigan Department of Environmental Quality (MDEQ), and others based on actions undertaken or considered by Michigan and other states, including regional, state, local and private actions.

Important Note: The GHG Reduction Policy Options below are numbered solely for convenience in referencing them. Their numbers do NOT reflect a ranking or prioritization of the policy options.

Notation regarding options:

Options marked with an asterisk (*) and/or are presented in green font indicate options that are at least partially “base case” policies, i.e., that are being undertaken or are planned at some level in Michigan.

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
1	Inventories and Forecasting			
1.1.	Establish and fund mandatory GHG emission inventory function at state agency*			Need to assure integration of Options 1, 2 and 3.
1.2.	Establish and maintain GHG emission forecasting function			This is distinct from the regulatory air emissions inventory done by air quality division at MDEQ.
2	GHG Reporting			
2.1.	Establish or adopt a GHG emissions reporting program*			Need to assure integration of Options 1, 2 and 3.
2.2.	Consider utilizing the <u>Service Oriented Architecture (SOA)</u> based technology offered by the Exchange Network for emissions reporting.			Consider the data exchange technologies offered by the Exchange Network (EN) www.exchangenetwork.net for reporting from industry to the state regulatory agencies and includes data "publishing" to allow other "partners" (i.e., states, EPA, industry, universities, etc.) to access each other's data. The EN technology can be used to support the use and exchange of climate data, interconnectivity with other data sets and to provide validation of permit-related trading systems. It offers data standards, XML schema design approaches, security and web protocols on data exchange, and the opportunity to leverage State infrastructure for data reporting and publication.
2.3.	Consider utilizing university students in data collection efforts.			

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3	GHG Registry			Need to assure integration of Options 1, 2 and 3.
3.1.	Participate in the development of a multi-state GHG emissions reduction registry*			Participation by the Department of Environmental Quality on the Steering Committee for the development of <i>The Climate Registry</i> , a multistate program designed to be an essential piece of infrastructure for the development of state and federal climate change programs. Over 39 U.S. and Mexican States and several Canadian provinces have already signed on to join <i>The Climate Registry</i> . For more information about <i>The Climate Registry</i> go to http://www.theclimateregistry.org/
3.2.	Provide assistance in reporting and registering GHG emissions *			May need to establish requirements for 3 rd party validation.
3.3.	Recruit members for Registry statewide			
4	Statewide GHG Reduction Goals and Targets			
4.1.	Establish goals or targets for statewide GHG emission reductions			The IPCC report calls for specific targets and goals i.e. 450 ppm. Will need to reduce 80% by 2050 to achieve.
4.2.	Institute an accountability program to measure and report progress in reducing GHG emissions.			
4.3.	Participate in development of accountability programs in other states, <u>such as may result under the Midwestern Governors GHG Reduction Accord.</u>			

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5	State and Local Government GHG Emissions (Lead-By-Example)			
5.1.	Lead by example by establishing targets for reductions in State GHG emissions			
5.2.	Create a multi-agency body to oversee on-going state climate efforts.			
5.3.	Disaggregate the State's own GHG emissions to the agency level and require annual agency-specific reports on GHG reduction progress.			
5.4.	Institute an accountability program to measure and report progress in reducing GHG emissions.			
5.5.	Climate-neutral bonding			More info needed.
5.6.	Require evaluation of GHG emissions in Environmental Impact Statements and similar environmental studies.			Need to consider environmental justice issues.
5.7.	Review sources of renewable energy			Michigan Renewable Energy Program (MREP) was established under Section 10r(6) of 2000 PA 141. The MREP, is charged with informing customers of the availability and value of using renewable energy generation, the potential for reduced pollution, promoting the use of existing renewable energy sources, and encouraging the development of new renewable energy facilities.

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5.8.	Apply pollution prevention principles to GHG emission reductions			The Michigan Department of Environmental Quality manages a number of pollution prevention and compliance assistance programs to assist companies reduce their environmental impact or exceed their regulatory obligations. For more information go to http://www.michigan.gov/deq/0,1607,7-135-3585---,00.html
5.9.	Promote Carpooling by State Employees			The Michigan Department of Transportation (MDOT) offers commuters a Vanpool Program, which is open to individual members of the public. MDOT also helps employers develop vanpools and ridesharing programs for their employees. MDOT also maintains car pool parking lots for individuals wishing to car pool on their own. For more information on either of these two programs go to http://www.michigan.gov/mdot/
5.10.	Establish energy efficiency requirements for state and local government buildings by utilizing LEED or other similar standards.			
5.11.	Post Secondary (Colleges and Universities)			
5.11.1	Establish energy efficiency requirements for state and local buildings, e.g. LEED or similar standards.			
5.11.2	Lead by example by establishing targets for reductions in post-secondary GHG emissions.			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
5.11.3	Create a multi-departmental body to oversee on-going post-secondary climate efforts.			
5.11.4	Disaggregate GHG emissions to the department level and require annual department-specific reports on GHG reduction progress.			
5.11.5	Institute an accountability program to measure and report progress in reducing GHG emissions.			
5.11.6	Review sources of renewable energy			
5.11.7	Integrate lead by example actions and education and outreach actions.			
6	Comprehensive Local Government Climate Action Plans (Counties, Cities, Etc.)			
6.1.	Encourage and assist in the development of local government planning efforts to reduce greenhouse gas emissions, establish targets, etc.			There are 20 cities in Michigan that have signed on to the US Mayors Climate Protection Agreement.
6.2.	Create incentives to promote regional cooperation among local and municipal governments to reduce GHG emissions.			
6.3.	Create incentives to promote use of LEED type construction standards for local facilities.			
7	Public Education and Outreach—See Appendix A For Details for Each Audience Category			
7.1.	State Government Education and Outreach Actions The State should lead by example (i.e., walk the talk) regarding education and outreach.			

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Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
7.2.	Target Audience: Policymakers (legislators, regulators, executive branch, agencies tribal governments, etc.) Implementation of climate actions hinges on policymakers' approval.			
7.3.	Target Audience: Future Generations Integrate climate change into educational curricula, post-secondary degree programs, and professional licensing.			
7.4.	Target Audience: Community Leaders and Community-Based Organizations (e.g., institutions, municipalities, service clubs, social and affinity groups, NGOs, organizations associated with the Great Lakes, etc.) Recognize leadership; share success stories and role models; expand involvement and participation within civic society.			
7.5.	Target Audience: General Public Increase awareness and engage in climate actions in personal and professional lives. <u>Integrate GHG educational efforts with other environmental sustainability efforts.</u>			
7.6.	Target Audience: Industrial and Economic Sectors Sector-specific climate change education and outreach.			
7.7.	Target Audience: Tribal Governments			
8	<u>Tax and Cap Policies [Integrate options 8, 15 (Credits) and 16 (Market advisory Group) Consider transferring lead to the Energy Supply TWG.]</u>			
8.1.	Institute tax incentives and disincentives to encourage GHG reductions. e.g. carbon tax, rebates, credits, others			Note: Differences exist among members on support for carbon tax
8.2.	Institute state carbon mitigation systems, both market-based cap and trade and a state cap; engage in voluntary state and regional carbon markets such as the Chicago Climate Exchange.			*Michigan will investigate and/or join the Chicago Climate Exchange (CCX). Membership in the Chicago Exchange requires achieving by 2010 a minimum 6% reduction in GHG emissions from 2000 levels. http://www.chicagoclimatex.com/ .

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8.3	Evaluate and revise existing fiscal policy to make more consistent with GHG reductions.			
8.4	Ensure consistency and integration among new and existing policies with any market based or tax system			Strive for alignment with federal programs as they evolve.
9	Seek Funding For Implementation Of Climate Action Panel Recommendations			
9.1.	Seek and stimulate funding and investment in climate solutions.			
9.2.	Position Michigan to successfully compete for federal/ international assistance/ matching funds in adaptation and mitigation of climate change impacts.			
9.3.	Mandate private/public partnerships with state and local governments participating with private businesses to initiate and foster adequate financial alternatives to accomplish adaptation and mitigation of climate change impacts.			

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10	Adaptation And Vulnerability			
10.1	Undertake a preliminary planning effort to assess and address the state's vulnerability to climate change and adaptation opportunities.			Discussion suggests that 2008 be used to identify and scope out the comprehensive adaptation planning effort with more comprehensive assessment in 2009.
10.2	Undertake a preliminary planning effort to assess and address the impact of climate change on the Great Lakes, the state's natural resources and on wildlife; integrate climate adaptation into natural resource management plans			Will need education and outreach to many groups and organizations associated w/ the Great Lakes.
11	Participate in Regional and Multi-state GHG Reduction Efforts			
11.1	Participate in regional GHG reduction policies or markets, such as regional carbon cap and trade system			
11.2	Identify opportunities for the state to join with other state or regional GHG reduction efforts.			MI has signed the Midwest Governors Regional GHG Reduction Accord . Also consider Midwest States Alliance , similar to RGGI in the northeast.
11.3	Implement regional climate reduction initiatives.			Explore opportunities for collaboration w/ Canada.
12	Enhance and Encourage Economic Growth and Job Creation Opportunities Through Climate Change Mitigation			

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Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
12.1	Develop additional policies and programs to attract federal and private investment in appropriate sectors or projects			
12.2	Develop a comprehensive 'green collar' education, job training and retraining programs, aligned with growth sectors and policy direction			
12.3	Participate in regional infrastructure development, investment, human capital, etc development linked to climate mitigation			<u>Four sustainable business forums already exist.</u>
12.4	Create an entity to promote business development opportunities in climate protection.			<p>Executive Directive 2006-06 "Promotion of Green Chemistry" became effective October 17, 2006. This Executive Directive tasks the DEQ with establishing a Green Chemistry Support Roundtable and developing and promoting a Green Chemistry Support Program for sustainable economic development and protection of public health.</p> <p>Michigan's Small Business Pollution Prevention Loan Program provides low interest loans to existing small businesses for qualifying source reduction, reuse, recycling or conservation projects. For more information go to http://www.michigan.gov/deq/0,1607,7-135-3307_3515_4144---,00.html</p>

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13	Encourage the Creation of a Business-Oriented Organization To Share Information and Strategies, Recognize Successes, and Support Aggressive GHG Reduction Goals			
13.1	Promote development of a business-oriented entity to help promote and recognize business efforts to reduce GHG emissions.			
14	Dedicate Greater Public Investment to Climate Data and Analysis			
14.1	Consider formation of a state climate data and analysis center to develop and provide objective, state-specific information regarding climate data.			
14.2	Establish the true costs of climate change to business, government, natural resources and citizens, especially with respect to the costs of action versus inaction in relationship to both mitigation and adaptation.			
15	Facilitate the Development of an Effective Carbon Credit System for Michigan			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
15.1	The state could purchase carbon credits associated with its own activities, function as a purveyor of credits to others, or act as a certification entity of others carbon exchanges.			<p>The Michigan Department of Natural Resources, in conjunction with the Delta Institute has launched a project titled, "Michigan Forest Carbon Offset and Trading Program." This program allows Michigan forest landowners to document their creation of greenhouse gas emission reduction credits and earn revenue from their sale on the Chicago Climate Exchange. CCX has released protocols for sustainable managed forest lands that are being utilized in this ongoing program.</p> <p>The Michigan Department of Agriculture, in conjunction with the Delta Institute and the Michigan Association of Conservation Districts has launched a project titled, "Michigan Conservation and Climate Initiative." This program allows Michigan agricultural landowners to document their creation of greenhouse gas emission reduction credits and earn revenue from their sale on the Chicago Climate Exchange. For more information on the MCCC Program go to http://www.michiganclimate.org/</p>
16	Create a Market Advisory Group			
16.1	Consider establishing a "Market Advisory Group" consisting of experts to provide guidance to the state on the design of market-based compliance programs to manage GHG emissions. Look at the California system as a potential model.			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
17	Enhance and Encourage Community Development Through Climate Change Mitigation; Address Environmental Justice			
17.1	Ensure consistency of climate action plan (CAP) with Governor's environmental justice directive and prioritize and ensure projects within the CAP that bring investment, jobs, job training and infrastructure upgrades to underserved communities			
17.2	Throughout the state's climate plan, prioritize and ensure projects that bring investment, jobs, job training and infrastructure upgrades to underserved communities			
17.3	In addition to existing funding mechanisms, devote a portion of any revenues from carbon regulation to helping low and middle income consumers address rising energy and transportation costs, through mechanisms such as energy efficiency and home and appliance upgrades as well as greater access to efficient public transit.			

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Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
17.4	In addition to addressing through existing funding mechanisms, devote a portion of any revenues from a carbon tax or credit auction to helping vulnerable communities cope with the impacts of climate change, including health impacts (such as heat stress) and quality of life.			

Appendix A. Public Education and Outreach

Third-Level Sub-Options by Audience for Option 7 of Catalog

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
7	Public Education and Outreach			
7.1	State Government Education and Outreach Actions The State should lead by example (i.e., walk the talk) regarding education and outreach.			
	Establish an education and outreach committee to educate audiences regarding climate plan policies and to oversee those relating to education.			
	Include state public education and higher education officials in the committee established above			
	Create and maintain one or more “outreach coordinator” positions specifically tasked with climate outreach and coordination among state agencies and outside entities.			
	Educate state employees across-the-board, and assign “point persons” to do so on an on-going basis.			
	Institute annual Governor’s Awards to recognize climate action of several types/categories.			

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7.2	Target Audience: Policymakers (legislators, regulators, executive branch, agencies) Implementation of climate actions hinges on policymakers' approval.			
	Educate policy makers on CAP policy recommendations, climate change in general, scientific and technological advances, and progress toward state goals through regular briefings in order to promote acceptance and implementation of mitigation and adaptation policies.			
	Provide continuing outreach and assistance to Governor's office, legislature, and implementing agencies on a regular basis.			
7.3	Target Audience: Future Generations Integrate climate change into educational curricula, post-secondary degree programs, and professional licensing.			
	Add climate change to public education performance standards for science and social studies; identify (a) gaps in climate change education, and (b) specific curricula to fill any gaps.			
	Organize groups of educators to identify, assemble, and employ climate change curricula appropriate to age groups			

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	Integrate “best practices” into public school design and construction to educate students (and parents) first-hand in their communities and colleges (i.e., walk the talk).			
	Integrate climate change into core college curricula.			
	Promote research into climate change and solutions at state universities; develop university “Centers of Excellence” on climate issues, new approaches, and technologies.			
	Integrate climate change into existing and/or new educational competition programs.			
	Work with science centers, zoos, and museums to include a climate science focus appropriate to their core mission			
	Introduce core competencies on climate change into professional licensing programs (e.g., energy efficiency in building design and construction, use of recycled materials, etc.)			
7.4	Target Audience: Community Leaders and Community-Based Organizations (e.g., institutions, municipalities, service clubs, social and affinity groups, NGOs, etc.) Recognize leadership; share success stories and role models; expand involvement and participation within civic society.			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
	Educate community planning and zoning officials about climate change, impacts, and opportunities.			
	Identify individual community leaders who are acting effectively on climate change; showcase and share their successes.			
	Identify individual community leaders who are not yet acting on climate change and make a special effort to educate and encourage them to act.			
	Engage associations and attend their periodic meetings to reach out on climate change, impacts, sector-specific mitigation actions, and adaptation opportunities.			
	Identify, assist, and leverage community-based organizations that have expertise or interest in climate-related issues			
	Work with community-based organizations to identify and build upon climate issues related to their core mission			
	Develop and coordinate a network of community-based organizations acting on climate change so they can link up, organize joint events, etc.			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
	Support and facilitate outreach and education within community-based organization regarding climate change issues and actions			
	Develop and provide concrete information on co-benefits to entities to use in boosting their climate efforts			
	Organize and host events that focus on leading by example, sharing "how-to," illuminating financial risks and opportunities, co-benefits, etc.			
	Encourage municipal leaders to join ICLEI's ¹ Cities for Climate Protection program and/or the Mayors Climate Protection Agreement ²			
	Help communities statewide implement local Climate Wise programs.			
7.5	Target Audience: General Public Increase awareness and engage in climate actions in personal and professional lives.			
	Educate broadcasters, reporters, editorial boards, etc. about climate change, the risks it imposes, and solutions.			

¹ ICLEI is the International Council for Local Environmental Initiatives. See www.iclei.org.

² See <http://www.ci.seattle.wa.us/mayor/climate/>.

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	Work with state broadcasters and print media associations to develop and run climate change public service announcements.			
	Conduct public polling to benchmark strength and depth of climate understanding.			
	Keep a high profile on climate change issues and actions through regular public mention by Governor and other public leaders			
	Develop and use a state-based "brand" on climate awareness and action			
	Develop and maintain a state climate change Web site for the public including a clearinghouse of climate change information and resources.			
	Work with existing company outreach efforts to customers to enhance awareness of climate change issues and opportunities			
	Undertake a concerted planning effort to identify and address climate adaptation issues and needs in the state			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
	Work to educate consumers—and home designers, builders, and contractors—to ensure that they are aware of the different choices they have for space heating and cooling (e.g., evaporative vs. refrigerative) and the impacts of those choices.			
	Develop a statewide voluntary program to structure and assist individuals in undertaking actions to reduce GHG emissions.			
7.6	Target Audience: Industrial and Economic Sectors Sector-specific climate change education and outreach.			
	Residential, Commercial, and Industrial			
	Transportation and Land Use			
	Energy Supply and Use			
	Agriculture and Forestry			
	Implement a state program of voluntary business actions to reduce GHGs			

Option No.	GHG Reduction Policy Option	Priority for Consideration	Feasibility Considerations	Notes
	Institute a “business incubator” program to attract and support new business development relating to the new energy economy.			
	Audiences outside the state too			
7.7	Target Audience: Tribal Governments			
