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**Cross-Cutting Issues Technical Work Group
Summary List of Pending Policy Options**

	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2025 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2025	Total 2007-2025			
CC-1	GHG Inventories, Forecasting, Reporting, and Registry	<i>Not Quantified</i>					Pending
CC-2	Statewide GHG Reduction Goals and Targets	<i>Not Quantified</i>					Pending
CC-3	State and Local Government GHG Emissions (Lead-by-Example)	<i>Not Quantified</i>					Pending
CC-4	Public Education and Outreach	<i>Not Quantified</i>					Pending
CC-5	Tax and Cap Policies	<i>Not Quantified</i>					Transferred to new Cap and Trade TWG
CC-7	Participate in Regional and Multi-State GHG Reduction Efforts	<i>Not Quantified</i>					Pending
CC-8	Encourage the Creation of a Business-Oriented Organization to Share Information and Strategies, Recognize successes, and Support Aggressive GHG Reduction Goals	<i>Not Quantified</i>					Pending
CC-9	Dedicate Greater Public Investment to Climate Data and Analysis	<i>Not Quantified</i>					Pending
CC-10	Facilitate the Development of an Effective Carbon Credit System for MN	<i>Not Quantified</i>					Coordinate w/ Cap and Trade TWG

	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2025	Total 2007-2025	2007-2025 (Million \$)		
CC-11	Create a Market Advisory Group	<i>Not Quantified</i>					Transferred to new Cap and Trade TWG

Note: There is no policy option CC-6, as this catalog option was determined not to be a priority for analysis by the MCCAG.

CC-1. GHG Inventories, Forecasting, Reporting, and Registry

Policy Description

Greenhouse gas (GHG) emissions inventories are essential for understanding the magnitude of all emission sources and sinks (both anthropogenic and natural), for estimating the relative contribution of various types of emission sources and sinks to total emissions, for informing state leaders and the public on statewide trends and in assisting with verifying GHG reductions associated with implementation of action plan initiatives.

GHG forecasts, built on solid inventories, help to predict likely impact scenarios, identify the factors that affect trends over time and highlight opportunities for mitigating emissions or enhancing sinks.

GHG reporting reflects the measurement and reporting of GHG emissions to support tracking and management of emissions. GHG reporting can help sources identify emission reduction opportunities and reduce risks associated with possible future GHG mandates by moving “up the learning curve.” Tracking and reporting of GHG emissions can also help in the construction of periodic state GHG inventories. GHG reporting is a precursor for sources to participate in GHG reduction programs, opportunities for recognition, and a GHG emission reduction registry, as well as to secure “baseline protection” (i.e., credit for early reductions).

A GHG registry enables recording of GHG emissions reductions in a central repository with “transaction ledger” capacity to support tracking, management, and “ownership” of emission reductions; establish baseline protection; enable recognition opportunities; and/or provide a mechanism for regional, multi-state, and cross-border cooperation. Properly designed registry structures also provide a foundation for possible future trading programs.

Policy Design

The ~~CC-TWG recommends that the~~ state should institute formal GHG inventory and forecast and GHG reporting functions within the Minnesota Pollution Control Agency (MPCA), to be assisted by other state agencies as needed.

Goals:

- Develop a periodic, consistent and complete inventory of emission sources and sinks at least once every two years. To the degree that data and methods allow, the inventory should include all natural and man-made emissions generated within the boundaries of the state (e.g., a production-based inventory approach), as well as emissions associated with energy imported and consumed in the state (e.g., a consumption-based inventory approach). The inventory should, through performance metrics and differences in year-to-year emissions, provide a way of documenting and illuminating trends in state GHG emissions.
- Develop a protocol for use in preparing the statewide emission and sink inventory. This should include a consistent protocol for evaluating the state’s progress in meeting the goals of the Next Generation Energy Act of 2007, which should logically form the basis

for inventory reporting of electricity sector emissions under a consumption-based approach.

- Biennially provide a summary of statewide emission and sink trends and progress toward the goals of the 2007 Next Generation Gen-Energy Act to the legislature.
- Develop a periodic, consistent and complete forecast of future ~~greenhouse gas~~GHG emissions in at least 5 and 10 year increments extending at least 20 years into the future. The GHG forecast should be assembled every three years. The GHG forecast should reflect projected growth as well as the implementation of scheduled mitigation projects. In the forecasting of future GHG emissions, the treatment of uncertainties should be transparent, as consistent as possible across sectors and time and, to the extent possible, reflect multiple scenarios. The estimation methods should be consistent with those used to develop the emission inventory and should reflect best practice.
- Develop a standardized protocol for the periodic forecasting of statewide GHG emissions.

Timing: This function should be implemented as soon as possible as allowed by current funding and enhanced over time.

Parties Involved: All GHG emission sources and sinks (both anthropogenic and natural) should be included in the inventory and forecast.

Other: Not applicable.

The ~~CC-TWG recommends that the~~ state should develop GHG reporting opportunities for all sources. Mandatory reporting above should be required for significant sources as determined by the MPCA using common sense regarding de minimis emissions. Elements that the MPCA may wish to consider including are:

- Subject to consistently rigorous quantification, opportunity to voluntarily report GHG emissions should be open to all sources (e.g., combustion, processes, vehicles, etc.) using common sense regarding de minimis emissions. In order to encourage GHG mitigation activities from all quarters, reporting should not be constrained to particular sectors, sources, or approaches.
- GHG reporting requirements should be phased in by sectors as rigorous, standardized quantification protocols, base data, and tools become available, and as responsible parties become clear. Mandatory reporting by significant sources as determined by MPCA should eventually be required but entities should be allowed to report GHG emissions voluntarily before mandatory reporting applies to them. The state, municipalities, and other jurisdictions should be allowed to report emissions associated with their own activities and any programs they may implement.
- The goal should be reporting of “organization-wide emissions within the state” but with greatest possible “granularity” in order to facilitate baseline protection.
- Reporting should occur annually on a calendar-year basis for all six traditional GHGs and, to the extent possible, for black carbon.

- Reporting of direct emissions¹ should be required; reporting of emissions associated with purchased power and heat² should be phased in, and voluntary reporting of other indirect emissions³ should be allowed.
- Every effort should be made to maximize consistency with federal, regional, and other states' GHG reporting programs.
- GHG emissions reports should be verified through self-certification and MPCA spot-checks; to qualify for future registry purposes, reports should undergo third-party verification.
- Mandate reporting of expected increases or decreases of emissions.
- Project-based emissions reporting should be allowed, when properly identified as such and quantified with equally rigorous consistency.
- The reporting program should provide for appropriate public transparency of reported emissions.

The ~~CC TWG notes that the~~ State has joined the effort to develop a national GHG registry through *The Climate Registry*. Being a charter state in this effort should help ensure that Minnesota's needs and priorities are addressed in the course of *The Climate Registry's* development. To the extent that Minnesota's needs may not be fully met by *The Climate Registry*, the State should consider developing supplemental or ancillary registry capacity or opportunity.

Elements to consider include:

- Geographic applicability at least at the statewide level and as broadly (i.e., regionally or nationally) as possible.
- Consider allowing sources to start as far back chronologically as good data exists, as affirmed by an independent third-party verification, and consider allowing registration of project-based reductions that are equally rigorously quantified.
- Incorporating adequate safeguards to ensure that reductions aren't double-counted by multiple registry participants; providing appropriate transparency; and allowing the state to be a valid participant for reductions associated with its programs, direct activities, or efforts.
- Striving for maximum consistency with other state, regional, and/or national efforts; greatest flexibility as GHG mitigation approaches evolve; and providing guidance to assist participants.

Goals: Implementation of a GHG registry for Minnesota sources as soon as possible.

Timing: As soon as possible

Parties Involved: Probably overseen by MPCA; costs shared by participants benefiting from the registry.

¹ Defined as "Scope 1" emissions in the *GHG Protocol*.

² Defined as "Scope 2" emissions in the *GHG Protocol*.

³ Defined as "Scope 3" emissions in the *GHG Protocol*.

Implementation Mechanisms

See items above. The elements of this option are the foundation of a climate action program in MN. They will, therefore, require an adequate investment of resources by the state to accomplish them. In particular, MPCA will need additional resources to implement key elements of the recommendations from this process.

Related Policies/Programs in Place

The MPCA has a long-standing program in place for preparing and updating GHG emissions inventories for all sectors and GHG pollutants.

Type(s) of GHG Reductions

The option is an enabling policy to encourage management, tracking, and ultimately reduction, of GHG emissions. It does not reduce GHG emissions itself per se.

Estimated GHG Savings and Costs per MTCO_{2e}

This option could be considered an administrative and enabling function of the Climate Action Plan (including enabling any future cap and trade options) and will incur overhead costs but not directly reduce emissions per se except where these data motivate reductions for public relations by individual companies or sources.

The reporting and registry components of this policy option would help position Minnesota entities for participation in an emissions trading program should one develop in the future, leading to cost savings. Although establishment of a credible reporting and registry program is essential for participating in a trading program, these elements do not reduce GHG emissions themselves.

Data Sources: Many.

Quantification Methods: Several – will be designed to follow standard, comparative and accepted approaches that allow exchange/sale of emission credits should this become a need in Minnesota.

Key Assumptions: Reporting will establish a baseline for GHG emissions and provide a monitoring tool for assessing the efficacy of the Climate Action Plan. Adjustments will be made in the Plan as certain techniques prove more or less beneficial than projected. Downward trends will allow for further incentives to be developed for sectors that show continuous improvement. Effective emission sinks can be identified and augmented. Public participation will inform and involve citizens in the overall goal of GHG emission reductions. Forecasting will allow state officials to plan for, implement and monitor necessary additions emission sources or sinks to the emission cycle.

Key Uncertainties

There are many uncertainties associated with maintaining an inventory of the many natural sources of GHG emissions.

How will potential requirements eventually emanating from a federal GHG reduction program impact the MN climate programs?

Political leadership to assure adequacy and timeliness of resources to implement ~~this option~~ ~~the recommendations of the climate action plan~~.

Additional uncertainties will likely arise as implementation proceeds.

Additional Benefits and Costs

~~TBD~~ — [as needed and approved by the TWG] See above.

Feasibility Issues

None cited at this time.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #56 or #67]

Level of Group Support

TBD – [blank until MCCAG meeting #56 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-2. Statewide GHG Reduction Goals and Targets

Policy Description

NOTE: Further analysis is on hold until quantification of GHG reductions is completed by the other TWGs.

Article 5 of the Next Generation Energy Act of 2007 (S.F. 145) establishes goals for Minnesota to reduce statewide greenhouse gas (GHG) emissions across all sectors producing those emissions to a level at least 15% below 2005 levels by 2015, to a level at least 30% below 2005 levels by 2025, and to a level at least 80% below 2005 levels by 2050. The levels shall be reviewed based on the climate change action plan study. In addition, Article 1 of the Act establishes that it is the energy policy of the state of Minnesota that: (1) the per capita use of fossil fuel as an energy input be reduced by 15% by the year 2015, through increased reliance on energy efficiency and renewable energy alternatives; and (2) 25% of the total energy used in the state be derived from renewable energy resources by the year 2025.

Policy Design

Established in Next Generation Energy Act [of 2007](#).

Goals: As noted above.

Timing: As soon as possible.

Parties Involved: State Government, municipalities, citizen's groups, NGOs, commercial, industrial, and economic sectors.

Other: [Insert text as appropriate]

Implementation Mechanisms

The policy option descriptions from the individual TWGs suggest specific implementation mechanisms. Many are regulatory, requiring executive action or further legislation. However, the very scale associated with comprehensively addressing climate change suggests that there are essential non-regulatory aspects to implementation as well, such as education and engagement of the general public, municipalities, and the commercial, industrial, economic and educational sectors in the state at many levels (as discussed further in CC-4).

In all sectors, improvements in energy efficiency directly reduce fuel costs, giving payback on investment to the user. However, funding the upfront costs of efficiency measures is likely to require a diverse range of innovative funding mechanisms and incentives to ensure sufficiently rapid penetration of the market to achieve the [year] goals of a xx% reduction in GHG emissions from the state.

Related Policies/Programs in Place

GHG emission reduction goals have been established by Governor Pawlenty and the Minnesota General Assembly.

Type(s) of GHG Reductions

TBD – [as needed and approved by the TWG]

All.

Estimated GHG Savings and Costs per MTCO_{2e}

TBD – [as needed and approved by the TWG]

Key Uncertainties

TBD – [as needed and approved by the TWG]

Additional Benefits and Costs

TBD – [as needed and approved by the TWG]

Feasibility Issues

TBD – [as needed and approved by the TWG]

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #~~56~~ or #~~67~~]

Level of Group Support

TBD – [blank until MCCAG meeting #~~56~~ or #~~7~~]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-3. State and Local Government GHG Emissions (Lead-by-Example)

Policy Description

In many areas, Minnesota state government is already leading by example to obtain greenhouse gas (GHG) emission reductions. State and local government is responsible for providing a multitude of services for the public that are delivered through very diverse operations and result in wide-ranging GHG emission activities. State and local government can take the lead in demonstrating that reductions in GHG emissions can be achieved through analysis of current operations, identification of significant GHG sources, and implementation of changes in technology, procedures, behavior, operations, and services provided. State and local governments can also encourage and/or provide incentives to reduce GHG emissions by others in a variety of ways.

The support of broad-ranging goals for GHG reductions for state government through the goals established below and those that already exist through the Interagency Pollution Prevention Advisory Team (IPPAT) will be helpful for setting an example and building expectations, with actual reductions realized at the agency level. Disaggregating the State's own GHG emissions to the agency level and showing the results in the annual IPPAT report on GHG reduction progress is an effective way to measure and manage the State's emissions. A multi-agency group oversees the on-going climate efforts of state agencies, providing direction, guidance, resources, shared approaches, and recognition to agencies and employees working to reduce the State's GHG emissions.

Policy Design

~~The CC TWG recommends that s~~State and local governments should establish GHG reduction targets for their own GHG emissions. The establishment of broad-ranging goals for reducing governments' own GHG emissions will be helpful in both setting an example and building expectations. Actual reductions will typically be realized at the individual agency level, so disaggregating individual government's own GHG emissions to the agency or department level and requiring annual agency- or department-specific reports on GHG reduction progress can be an effective way to measure and manage each government's progress in reducing its GHG emissions. Government agencies or departments first developed agency- or department-specific GHG emissions inventory data. This became the baseline data for ongoing emission reduction activities and measurement, which is summarized in annual IPPAT reports by each agency or department. IPPAT oversees the on-going climate efforts of the government's agencies and departments, reviews their performance, and provides direction, guidance, resources, shared approaches, and recognition to agencies or departments and their employees that are working to reduce the government's GHG emissions.

Goals:

- Each state agency shall, in consideration of its current and projected building stock:
 - Determine and quantify its current and projected energy consumption and associated ~~carbon dioxide~~GHG emissions from such consumption.

- Develop and propose a plan to reduce its statewide ~~CO₂-GHG~~ emissions associated with its building stock commensurate with its pro-rate share of the statewide ~~CO₂-GHG~~ reduction goals established in the 2007 Next Generation Energy Act.
- Provide the plan to ~~IPPAT, {whom?} by {date}.~~
- Report the agency's progress toward its ~~CO₂-GHG~~ reduction goals in buildings to ~~IPPAT{whom}~~ on an annual basis.
- Each state agency shall, in consideration of its current and projected transportation stock:
 - Quantify and establish the same goals for transportation stock described above for its building stock.
 - Provide the plan to ~~IPPAT, {whom?} by {date}.~~
 - Report the agency's progress toward its ~~CO₂-GHG~~ reduction goals in transportation to ~~IPPAT{whom}~~ on an annual basis.

The state should develop appropriate guidelines and tools for utilizing the environmental impact assessment processes to assess and promote reductions of GHG emissions. Environmental Assessment Worksheets (EAW) and Environmental Impact Statements (EISs) are written analyses of the potential environmental impacts of a proposed action or project in Minnesota. Including consideration of GHG emissions as part of EAW and EIS processes and documents would enable comparison of reference case GHG emission levels to future GHG emission levels as a result of proposed projects. Such information could be helpful in targeting development decisions that minimize GHG emissions or in pointing out the need for authority to regulate GHG emissions. ~~The MN-CC-TWG recommends that a~~ agencies should utilize ~~state-state-~~ developed guidelines and tools in EAW and EIS documents comparing reference case and estimated future GHG emissions. This information will guide officials and developers in choosing technologies and activities which result in development that protects the environment and reduces additional contributions of GHGs.

Additionally, the existing directives of IPPAT and the executive orders listed below ~~will-should~~ be continued and enhanced ~~as deemed appropriate by the MCCAG.~~

Executive Orders:

04-02, Providing Direction to State Agencies Regarding State Contracting Procedures

04-08, Providing for State Departments to Take Actions to Reduce Air Pollution in Daily Operations (Clean Air Minnesota provisions)

04-10, Providing for State Departments to Improve Fleet and Travel Management

05-16, Providing for Energy Conservation Measures for State-owned Buildings

06-03, Requiring Increasing the Use of Renewable Fuels by State Agencies

Timing: The state's efforts to lead-by-example in reducing its own GHG emissions have already begun through IPPAT's actions and the above-listed executive orders. The baseline information and emission-reductions from the prior years are already recorded. Future annual reports should show further progress in reducing agency GHG reductions.

Parties Involved: Coverage should include all operations of all state agencies and all departments of local governments.

Implementation Mechanisms

- Public education and outreach to state and local government agencies and employees.
- Performance reviews and recognition of agency progress.
- Procurement of low-GHG products.
- Quantifiable, sustainable and measurable building energy conservation improvements corresponding to the agency's pro rata share of the 1.5%/year energy conservation goal established in the 2007 Next Generation Energy Act.
- Transportation energy conservation improvements sufficient to accomplish the ~~CO₂~~-GHG reduction goals established in the Goals section, above.

Related Policies/Programs in Place

Descriptions to follow regarding programs of the following entities: Met Council, Minneapolis, St. Paul, 24 other member cities in the U.S. Mayors Climate Protection Agreement, through ICLEI, DOC, EE, CIP, MPCA Sustainability Conference information, Explore Minnesota.

Type(s) of GHG Reductions

Steps to reduce energy demand would reduce all GHGs related with energy production. Support for renewable energy and cleaner energy will also help lower all GHGs associated with energy production. Improving existing recycling efforts would result in an associated reduction in GHG emissions from processing new materials. Transportation and fleet management could lower vehicle emissions, as would converting vehicle fleets to run on alternative fuels (e.g., biofuels).

Estimated GHG Savings and Costs per MTCO₂e

Not applicable.

Key Uncertainties

Substantial uncertainty surrounds future growth rates in GHG emissions, particularly beyond 2020, as well as the timing and scope of implementation of MCCAG recommendations for specific policy options, including those associated with the state's own GHG emissions.

Additional Benefits and Costs

~~Not quantifiable at this time. These recommendations require development of credible guidelines and tools that will result in additional costs to project sponsors and appropriate state and local agencies.~~

Feasibility Issues

~~It will be important to develop an agreed-upon framework in the beginning to ensure a cost-efficient procedure for collecting data. None cited at this time.~~

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #~~56~~ or #~~67~~]

Level of Group Support

TBD – [blank until MCCAG meeting #~~56~~ or #~~67~~]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-4. Public Education and Outreach

Policy Description

Explicitly articulated public education and outreach can support GHG emissions reduction efforts at all levels in the context of emissions reduction programs, policies, or goals. Public education and outreach is vital to fostering a broad awareness of climate change issues and effects (including co-benefits, such as clean air and public health) among the state's citizens. Such awareness is necessary to engage citizens, businesses and institutions in actions to reduce GHG emissions. Public education and outreach efforts should integrate with and build upon existing outreach efforts involving climate change and related issues in the state. Public education and outreach efforts should make the public aware of GHG emissions associated with products produced outside of Minnesota and the United States. Ultimately, public education and outreach will be the foundation for the long-term success of the policy actions proposed by the MCCAG as well as those which may evolve in the future.

Policy Design

The ~~TWG recommends that the~~ state should build upon current educational efforts and action campaigns of state agencies, utilities and non-profit organizations. State agencies, utilities and non-profits understand each others offerings and use these enhanced resources to better educate Minnesota residents and businesses to encourage them to take action. The combination of efforts by the state, nonprofits and utilities should insure that educational services are provided to all sectors including public schools, charter schools and community education programs.

1. STATE EDUCATION INITIATIVES

Minnesota has a long history of environmental education. The ~~TWG recommends that the~~ state should work through existing organizations by encouraging them to incorporate education about climate change and the role of GHG emissions into their existing educational efforts.

The states initiatives should focus on being the primary mechanism for providing mitigation, awareness and understanding of climate change and the role humans play in causing it.

Current Efforts

Environmental Education Advisory Board

The Environmental Education Advisory Board (EEAB) is the state board that guides the direction of environmental education in Minnesota. It was created by the 1990 Environmental Education Act (M.S. 1998, Chap. 115A.072) to promote environmental literacy for all Minnesota citizens. The Board accomplishes this by advising the Governor through the Minnesota Pollution Control Agency, state agencies, organizations and citizens. A major vehicle is the implementation of A GreenPrint for Minnesota: State Plan for Environmental Education (aka GreenPrint). The third edition of the Plan is being revised and it will list 4 or 5 main objectives for the state.

The Board consists of 20 members - eleven citizen representatives and nine government agencies representatives. One citizen member from each of the 8 congressional districts and 3 citizen at-large members comprise the citizen members (2 of the citizen members must be classroom

teachers). They serve two-year terms. The Board also has a representative from each of the following: Pollution Control Agency, Department of Education, Department of Agriculture, Department of Health, Department of Natural Resources, Board of Water and Soil Resources, Environmental Quality Board, Board of Teaching, and the University of Minnesota Extension Service.

Develop an Environmental Learning in Minnesota Fund

The Environmental Learning in Minnesota Fund (ELM) is a current initiative of the Environmental Education Advisory Board. The board is working to develop a fund to provide fiscal resources for environmental education needs in Minnesota. While still at the exploratory stages, the board is currently dialoging with the Minnesota Association for Environmental Education (MAEE) for a potential public/private partnership to manage and administer the fund. Details are still fluid, however it is felt that revolving funding priorities and joint administration would be a part of the final program.

The ELM fund, could provide fiscal resources to enable schools, environmental learning centers, residential environmental learning centers, science museums, colleges and universities, and various local government entities to educate Minnesota citizens and businesses about critical issues in the global warming discussion.

Minnesota Scope and Sequence

The Environmental Literacy Scope and Sequence publication (March 2002, also due for revision in 2008) is designed to help create opportunities for mainstreaming environmental education in a way that has not been possible before. It provides a systems approach to environmental education that can focus the efforts of teachers and other deliverers of education to unify their many independent efforts to achieve the goal of environmental literacy. Because the Scope and Sequence is based on both state and national standards, it enables environmental education deliverers to build, adapt or integrate curriculum and assessments that are most appropriate for their particular grade level or audience.

Sharing Environmental Education Knowledge Partnership

The Sharing Environmental Education Knowledge Partnership (SEEK) is a partnership of over 130 organizations who provide environmental education to Minnesota citizens. The main communication tool for the partnership is a Web site (www.seek.state.mn.us). Included in the Web site are a Resource directory with over 1500 resources, a News area, a Jobs and Internship Area, training opportunities, calendar of statewide activities (for both the public and educators,) Regional pages, and other information areas. SEEK members are non-profit businesses, for profit businesses, municipal, state, and Federal government entities. It is the first stop in information about Minnesota's environmental education community.

2. UTILITY PROGRAMS

Utility conservation improvement programs (CIP) should be strengthened to provide education about specific actions all consumers can take to reduce their energy use and emissions while state programs provide general awareness of the issue, utility programs should lead to direct action.

3. NON-PROFITS

Minnesota non-profits such as the Will Steger Foundation, Fresh Energy, Sierra Club, Center for Energy and Environment have been promoting education and action on climate change for many years. CEE has developed the Minnesota Energy Challenge as a way for people to team up and take action about climate change. The Minnesota Environmental Initiative (MEI) has supported a number of conferences on energy and the environment and also provides environmental education and in conjunction with the Hamline University Center for Global Environmental Education (CGEE). The ~~TWG recommends that the state~~ should not duplicate these initiatives.

Goals: The overarching goal is to raise awareness about global warming and promote individual action to reduce the Minnesota's overall CO₂-GHG emissions.

Timing: Public education and outreach efforts should commence now.

Parties Involved: Rather than create a new agency the legislature should include the Department of Commerce (DOC) as a board member of the EEAB and also include GHG education as part of the EEAB mission. The board's membership is prescribed by statute language and this would require legislation. The addition of Commerce to the board would ensure that any energy-related education assisted and/or initiated by the Department of Commerce is represented in a cohesive, coordinated manner, supported by the state plan for environmental education, the GreenPrint. The ~~TWG should also direct the~~ DOC ~~to~~ should insure that utility CIP programs include effective energy education and are designed to complement the activities of non-profits. Additionally, counties may want to consider including educational initiatives about global warming as part of their Select Committee on Recycling and the Environment (SCORE) funded programs.

Implementation Mechanisms

See above.

Related Policies/Programs in Place

See above.

Type(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

These initiatives are designed to support implementation of other options but their impacts are difficult to measure.

Additional Benefits and Costs

Not quantifiable at this time.

Feasibility Issues

None cited at this time.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #~~56~~ or #~~67~~]

Level of Group Support

TBD – [blank until MCCAG meeting #~~5~~6 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-5. Tax and Cap Policies

Policy Description

The MCCAG approved as priority policy options for analysis Energy Supply-X (ES-X) (GHG Cap-and-Trade) and ES-11 (Carbon (GHG) Tax). The ES TWG will quantify the emission reductions and costs or cost savings associated with these options. The CC TWG has requested that the ES TWG strongly consider a multi-sector, regional approach in the development of the design elements and quantification of these options.

Awaiting draft from ES TWG to review.

Will be addressed by ~~new~~ Cap and Trade TWG.

CC-7. Participate in Regional and Multi-State GHG Reduction Efforts

Policy Description

Regional approaches undertaken in collaboration with partner states or other organizations can offer broader and more economically efficient opportunities to reduce GHG emissions across Minnesota's economy. There are several options for regional, market-based GHG reduction strategies which should be considered in Minnesota such as: joining the Western Climate Initiative (WCI), joining the Northeast States Regional Greenhouse Gas Initiative (RGGI), or instituting a new Midwestern states GHG initiative. Additional examples might include consideration of the California vehicle standards, cost sharing on multi- state initiatives, etc.

Policy Design

Goals: Ensure the cost effective reduction of GHG emissions to at least the reduction levels set forth in Minnesota statute, in a manner that maximizes public benefits and induces innovation in energy efficiency and sustainable energy technologies and avoids inequitable impacts.

Timing: By February 1, 2008, the Administration must report to the legislature on its investigation into regional GHG reduction opportunities. By August 1, 2009 Minnesota should either join an existing GHG reduction initiative or, institute and join a new Midwestern states GHG initiative that will ensure that Minnesota achieves the goal, as stated above.

Parties Involved: The Governor and administration staff should implement the legislative directive (see below) and inform the chairs and ranking minority members of the legislative committees with jurisdiction over energy and environmental finance and policy.

~~Other:~~

Implementation Mechanisms

Next Generation Energy Act, S.F. No. 145, Article 5, Sec. 2, Subd. 6 (Regional activities). The state must, to the extent possible, with other states in the Midwest region, develop and implement a regional approach to reducing GHG emissions from activities in the region, including consulting on a regional cap and trade system.

Related Policies/Programs in Place

Next Generation Energy Act, S.F. No. 145, Article 5, Sec. 2, Subd. 6 (Regional activities). See above.

Type(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

Joining another regional entity should not compromise the achievement of Minnesota's goal.

Additional Benefits and Costs

There will be additional environmental and economic co-benefits associated with the state's participation in a regional GHG emission reduction initiative that meets Minnesota's goals, including: the opportunity to reduce GHG emissions in economically efficient manner, the identification of additional areas for cooperation within specific sectors (e.g. transportation), and the reduction of other non-GHG pollutants associated with the production and use of energy.

Feasibility Issues

None cited at this time.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #~~56~~ or #~~67~~]

Level of Group Support

TBD – [blank until MCCAG meeting #~~56~~ or #~~7~~]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-8. Encourage the Creation of a Business-Oriented Organization to Share Information and Strategies, Recognize successes, and Support Aggressive GHG Reduction Goals

Policy Description

Successful state GHG reduction efforts are highly dependent on active participation of the business community, particularly in the energy, agriculture, transportation, development and manufacturing sectors. In Minnesota, there are many progressive corporations that are anxious to participate in broad-scale efforts to reduce GHG emissions. In order to facilitate a strategic approach that has a significant impact, a statewide pro-active business organization should be formed to promote energy efficiency and GHG reduction opportunities.

Policy Design

Goals: The Next Generation Energy Act of 2007 established general goals for GHG emissions reduction and an aggressive specific annual goal of reducing energy consumption by 1.5%. A new business strategy that aggressively promotes options to improve energy efficiency by Minnesota's businesses will help achieve these goals.

Timing: As soon as possible.

Parties Involved: The Minnesota Chamber of Commerce (Chamber), energy utilities, the Minnesota Department of Commerce (DOC), energy conservation experts and individual businesses around the state.

Other:

Implementation Mechanisms

In 1993, the Chamber created a business waste reduction program called Minnesota Waste Wise. Since then, hundreds of businesses have participated to reduce waste generation and improve recycling and reuse rates. The Chamber is now using the Waste Wise model for a new program to promote energy conservation and efficiency. The program will promote the use of Conservation Improvement Programs (CIP) sponsored by energy utilities through education and outreach, technical assistance and recognition programs. The Chamber is consulting with energy utilities, business consumers and the DOC on program development. Funding will be sought from DOC CIP grant funds.

Related Policies/Programs in Place

Energy utilities' Conservation Improvement Programs.

Minnesota Waste Wise

Energy Star

Type(s) of GHG Reductions

Carbon Dioxide, other GHGs.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

Must secure funding.

Additional Benefits and Costs

Not quantifiable at this time.

Feasibility Issues

None identified at this time.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #56 or #67]

Level of Group Support

TBD – [blank until MCCAG meeting #56 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-9. Dedicate Greater Public Investment to Climate Data and Analysis

Policy Description

In order to calibrate greenhouse gas mitigation policies, it is critical that decision makers and the citizens of Minnesota understand how climate change is impacting and will in the future impact natural resources and economic activity in the state. Much of the data and information needed to make such an assessment is being collected by various departments and entities in the state. The Department of Natural Resources, the Pollution Control Agency, the Department of Agriculture and the Department of Employment and Economic Development should assess and identify the gaps in on-going data collection that would need to be filled in order to monitor, track and assess climate change impact in Minnesota. The departments should develop recommendations for filling these data gaps and suggest the best approach (possibly under the coordination of the University of Minnesota) for conducting a periodic assessment of how intensely Minnesota is being affected by climate change and how intensely it is likely to be affected in the future.

Policy Design

Goals: Develop plan for accomplishing a periodic assessment of the ongoing and projected impacts of climate change on Minnesota natural resources, settlement and economic activity. The assessment would focus on but not be limited to impacts to water resources and quality, air quality, landscape change, forest resources and health, ecosystem health, species diversity, fish and wildlife and their habitats, agricultural productivity, recreation, other amenities, human disease, and settlement. The assessment should treat impacts arising from climate changes of the present and recent past and impacts that are likely or possible 30 to 50 years into the future. The assessment should rely on the best available regional climate data and assessments.

Timing: The recommendations should be developed for submittal to the legislature by January, 2009.

Parties Involved: Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, The Department of Agriculture, the Department of Employment and Economic Development, other state agencies, Federal land managers, academic researchers at public and private universities and colleges in Minnesota.

Other: ~~Insert text as appropriate~~

Implementation Mechanisms

An appropriate process needs to be developed, including stakeholder participation.

Related Policies/Programs in Place

See above.

Type(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

Adequacy of funding.

Additional Benefits and Costs

Not quantifiable at this time.

Feasibility Issues

None cited at this time.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #56 or #67]

Level of Group Support

TBD – [blank until MCCAG meeting #56 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-10. Facilitate the Development of an Effective Carbon Credit System for MN

Policy Description

GHG reductions from a wide variety of sources and actors could potentially be undertaken in order to participate in offset programs or markets. Minnesota could develop an offset program as a state-led or private effort. Under this policy, the preferred approach is for entities to participate in an official state-recognized registry. However, for entities not covered by the registry, the policy should allow for offsets to be submitted as a way to opt in to GHG emission allowance markets or trading systems. Such offsets would be registered using approved protocols or (in the absence of protocols) an application for approval of specific projects on a case-by-case basis. The effectiveness of such offsets is likely to help determine their value and utility for participants. In particular, concerns about measurement, permanence, additionality, and enforceability must be resolved in the protocol-setting process; measures such as categorical exclusions and temporary credits for certain types of emission-reducing actions should be considered. However, the administrative burden and/or transaction costs that could be imposed could have a countervailing (dampening) effect, leading to an overall increase in costs.

Policy Design

Goals: Enable a wide range of quality offsets to be generated, preferably in Minnesota, with the applicability of such offsets to be determined as state, regional, national and international GHG reduction efforts continue to develop. Criteria for such an offset system in MN might include those described in the cap and trade webinar (real, surplus (additional), verifiable, permanent and enforceable).

Timing: By January 1, 2009, establish an offset program including at least the major sectors for which existing GHG emission reduction protocols exist or are developed for use by Minnesota entities. To the extent that Minnesota's participation in The Climate Registry will enable certain sectors and/or entities to participate in offset creation, those sectors and/or entities would not be included in the separate offset program under this policy.

Parties Involved: MN Department of Commerce and MN Pollution Control Agency along with other appropriate partners. The offset program tracking and administration could be formed with the same agency structure as envisioned for the State's participation in the Climate Registry. A stakeholder and public comment process should be employed during 2008 to determine types of offsets and relevant protocols for inclusion.

Other: Consider a State purchase of offsets using an RFP process to jump start the market, versus strong advocacy for rapid development of national or regional offset systems.

Implementation Mechanisms

Legislative authorization for the agency-based offset program including funding for staff and associated stakeholder process. Consider need for protocol development, approval processes such as applications or third party verification, and possible participant funding for protocols and/of verification.

Related Policies/Programs in Place

Climate inventories and registries; county or municipal offset efforts.

Type(s) of GHG Reductions

Wide variety, including forestry and land use, process and end use efficiency, innovative technologies (hybrid vehicle conversions etc.).

Estimated GHG Savings and Costs per MTCO_{2e}

Basically unknown at this time. Note that offsets, if sold to out of state emission markets with binding regulatory regimes such as the EU, could be used by others and such offsets would not lead to overall emission reductions. Only emissions that are recorded and retired permanently in Minnesota or sold into voluntary emission markets such as the Chicago Climate Exchange are actually ‘real and additional’ GHG reductions. Concerns over the permanence of land use and other behaviors introduce further uncertainty, as does the permissibility of offsets for use in a potential mandatory GHG emission reduction program.

Key Uncertainties

- Willingness of Minnesota actors to undertake offset investments
- Stringency of offset accounting and resulting ‘quality’ of offsets
- Ties to external markets and pricing
- Public (agency) versus private (non profit or business) oversight and program administration

Additional Benefits and Costs

- Probably unquantifiable co-benefits from emission reduction actions
- Benefits for actors to develop GHG accounting, option evaluation, and institutional infrastructure to facilitate GHG emission reduction efforts.
- Potential to ‘pave the way’ for other policies.

Feasibility Issues

- Time and resources to develop offset program and any required protocols, verification etc.

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #56 or #67]

Level of Group Support

TBD – [blank until MCCAG meeting #56 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]

CC-11. Create a Market Advisory Group

Note: This Option will be addressed by the ~~new~~-Cap and Trade TWG. The CC- TWG would like to remain involved in reviewing this option and explore if the scope of such a group can be broader than just cap and trade.

Policy Description

The ~~CC-TWG recommends that the~~MCCAG should consider establishment of 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. The State of California has formed a Market Advisory Committee (MAC) to help formulate a GHG Cap and Trade system in California. The California MAC has formulated a set of guiding principles and has developed an initial set of recommendations for a California Cap-and-Trade program. It is recommended that Minnesota evaluate the MAC to determine if it can be used as an example for developing a “Market Advisory Group” for Minnesota to provide expert guidance to the state on design of market-based compliance programs to manage GHG emissions.

Policy Design

TBD – [as approved by the TWG]

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

TBD – [as approved by the TWG]

Related Policies/Programs in Place

TBD – [as needed and approved by the TWG]

Type(s) of GHG Reductions

TBD – [as needed and approved by the TWG]

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

TBD – [as needed and approved by the TWG]

Not applicable.

Key Uncertainties

TBD – [as needed and approved by the TWG]

Additional Benefits and Costs

TBD – [as needed and approved by the TWG]

Feasibility Issues

TBD – [as needed and approved by the TWG]

Status of Group Approval

Pending – [until MCCAG moves to final agreement at meeting #56 or #67]

Level of Group Support

TBD – [blank until MCCAG meeting #56 or #7]

Barriers to Consensus

TBD – [blank until final vote by the MCCAG]