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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 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007-2020			
CC-1	GHG Inventories and Forecasting,	<i>Not Quantified</i>					Pending
CC-2	GHG Reporting and Registry	<i>Not Quantified</i>					Pending
CC-3	Statewide GHG Reduction Goals and Targets	<i>Not Quantified</i>					Pending
CC-4	State and Local Government GHG Emissions (Lead-by-Example)	<i>Not Quantified</i>					Pending
CC-5	Public Education and Outreach	<i>Not Quantified</i>					Pending
CC-6	Tax and Cap Policies	<i>Not Quantified</i>					Pending
CC-7	<u>Review Institutional Capacity to Address Climate Change Issues, including Seeking Funding for Implementation of Climate Action Panel Recommendations</u>	<i>Not Quantified</i>					Pending
CC-8	Participate in Regional, Multi-State and National GHG Reduction Efforts	<i>Not Quantified</i>					Pending
CC-9	Promote Economic Development Opportunities Associated with Reducing GHG Emissions in MD	<i>Not Quantified</i>					Pending
CC-10	Create Capacity to Address Climate Change Issues in and “After Peak Oil” Context	<i>Not Quantified</i>					Pending
CC-11	Evaluate Climate Change Policy Options to determine Projected Public Health Risks/ Costs/Benefits						
CC-12	Review Institutional Capacity to Address Climate Change Issues						

CC-1. GHG Inventories and Forecasting

Policy Description

Sample text in italics

[Insert text as appropriate] *Greenhouse gas (GHG) emissions inventories and forecasts are essential for understanding the magnitude of all emission sources and sinks (both anthropogenic and natural), the relative contribution of various types of emission sources and sinks to total emissions, and the factors that affect trends over time. Inventories and forecasts help to inform state leaders and the public on statewide trends, opportunities for mitigating emissions or enhancing sinks, and verifying GHG reductions associated with implementation of action plan initiatives.*

Policy Design

~~[Insert text as appropriate]~~

~~The CC TWG recommends that the state institute formal GHG inventory and forecast and GHG reporting functions.~~

Goals:

- Develop a periodic, consistent and complete inventory of emission sources and sinks on a frequent basis. 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.
- Develop a periodic, consistent and complete forecast of future greenhouse gas emissions in at least 5 and 10 year increments extending at least 20 years into the future. The GHG forecast should be updated periodically. 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.

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-2. GHG Reporting and Registry

Sample text in italics.

Policy Description

- Develop and manage a common greenhouse gas emissions reporting system with high integrity that is capable of supporting multiple greenhouse gas emissions reporting and emissions reduction policies for its member states/tribes and reporting entities; and
- Provide an accurate, complete, consistent, transparent, and verified set of greenhouse gas emissions data from reporting entities, supported by a robust accounting and verification infrastructure.

~~*[Insert text as appropriate] 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

- [Insert text as appropriate] 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 current certification processes including federal CFR Part 75 Data quality assurance procedures where applicable. Data not subject to comprehensive protocols may need third party certification.

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*.

- Project-based emissions reporting should be allowed, when properly identified as such and quantified with equally rigorous consistency.
- The reporting program should provide for full transparency of reported emissions.
- The CC TWG notes that Maryland has joined the effort to develop a national GHG registry through The Climate Registry.
- Strive 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 Maryland sources as soon as possible.

Timing: As soon as possible

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

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

[Insert text as appropriate]

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-3. Statewide GHG Reduction Goals and Targets

Sample text in italics.

Policy Description

-Governor O'Malley's April 2007 Executive Order not only created the Commission on Climate Change but also established the presumptive GHG reduction goals for the State. Maryland's greenhouse gas emissions are to be reduced to 1990 levels by 2020 and reduced to 80% of 2006 levels by 2050. An Interim Report to the Governor and General Assembly (December, 2007) resulting from the first phase of the MCCC process recommends revised goals that are more ambitious than the original order. (These proposals are described below.)

After reviewing recent reports issues by the International Panel on Climate Change and a summary of studies compiled by the Scientific and Technical Working Group, the Mitigation Working Group has concluded that it is absolutely necessary to adopt "stretch" goals for reducing Maryland's GHG emissions. Reductions occurring earlier in time have much more mitigation value than reductions later in time. Reductions in the 20% to 50% range by 2020 (2006 base) appear to be needed to avoid the IPCC's most catastrophic forecasts. Specific targets for GHG reductions by 2012/15, 2020 and 2050 are essential to provide a framework for Maryland's reduction efforts. These goals should be relative to Marylanders' consumption-based GHG emissions. Because new data, information and studies will become available in future years, the Mitigation Working Group recommends in-depth review of the targets every four years.

~~*[Insert text as appropriate] The Governors Executive Order establishes the presumptive GHG reduction goals for the State. An Interim Report resulting from the first phase of the MCCC process includes revised goals that are more ambitious than the original order. These proposals are described below.*~~

Policy Design

~~[Insert text as appropriate]~~

- **Goals:** ~~[Insert text as appropriate]~~By Executive Order and legislation, the Governor and General Assembly should adopt the following specific consumption-based goals for Maryland's reduction of greenhouse gas emissions:
 - 10% below 2006 levels by 2012
 - 15% below 2006 levels by 2015
 - 25-50% below 2006 levels by 2020
 - 90% below 2006 levels by 2050
 - Zero emissions or carbon neutral by 2100
 - Mid-course reviews at least every four years starting in 2012
 - Track progress from 1990 levels as well
- **Timing:** ~~[Insert text as appropriate]~~The goals should be adopted in 2008.
- **Parties Involved:** ~~[Insert text as appropriate]~~All state and county governments and the citizens of Maryland.

• Other:

- Other: [Insert text as appropriate] The Executive Branch should issue a report every second year, beginning in 2010, summarizing Maryland's programs and activities for greenhouse gas reductions and evaluating Maryland's progress in achieving State's mitigation targets.

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Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-4. State and Local Government GHG Emissions (Lead-by-Example)

Sample text in italics.

Policy Description

[Insert text as appropriate] *In many areas, Maryland state government is already leading by example to obtain 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.*

Policy Design

[Insert text as appropriate] *Example language from MN:*

The CC TWG recommends that state and local governments 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 emissions from such consumption.*
 - *Develop and propose a plan to reduce its statewide CO₂ emissions associated with its building stock commensurate with its pro-rate share of the statewide CO₂ reduction goals established in the 2007 Next Generation Energy Act.*
 - *Provide the plan to [whom?] by [date].*
 - *Report the agency's progress toward its CO₂ reduction goals in buildings to [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 [whom?] by [date].
 - Report the agency's progress toward its CO₂ reduction goals in transportation to [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 agencies utilize state developed guidelines and tools in EAW and EIS documents comparing reference case and estimated future GHG emissions.

Additionally, the existing directives of IPPAT and the executive orders listed below will 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.

- **Goals:** [Insert text as appropriate]
- **Timing:** [Insert text as appropriate]
- **Parties Involved:** [Insert text as appropriate]
- **Other:** [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-5. Public Education and Outreach

Policy Description

Sample text in italics.

~~[Insert text as appropriate] 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 sState'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 withbe designed to reinforce other State climate change policies and build upon existing outreach efforts involvingon climate change and related issues-in the state. Ultimately, public education and outreach will be the foundation for the long-term success of the policy actions proposed by the MCCC as well as those which may evolve in the future.~~

~~Due to the positive-feedback nature of climate change, massive, early actions are imperative. For example, a ton of carbon dioxide emission reduction this year is more effective in slowing warming than the same reduction the next year, and is much more effective than the same amount five years later. For this reason, the proposed efforts focus on energy conservation and efficiency—which can be implemented now and have immediate effects—and purposely leave out renewable energies and new climate-friendly technologies. These technologies may require substantial investments and may not be economically viable at present. The TWG recommends that they be considered when the policies are updated in the future. Furthermore, because early actions are important, the TWG recommends that the State not wait for perfecting its plans before implementation. Quick implementation requires that the State plan a little, do a little, and let actions, results, and mistakes help stimulate more widespread actions.~~

~~Achieving a meaningful reduction in GHG emission requires substantial efforts in conservation and energy efficiency. This requires behavioral and life style changes in a broad spectrum of the public. State-sponsored public education and outreach alone will not result in behavioral and life style changes in the public. Repeated actions, combined with economic incentives and disincentives provided by other Sate climate change policies, is the foundation for behavioral and life style change. This public education and outreach policy is designed to provoke such actions.~~

Policy Design

~~[Insert text as appropriate] Segments of the public engaging in different activities have different concerns about climate change; the TWG recommends that public education and outreach efforts deliver messages to them in different ways.~~

~~The TWG recommends that the State build upon current educational efforts and action campaigns of State agencies, utilities, and non-profit organizations. These organizations understand their offerings; enhanced resources from the State will reinforce their efforts to encourage Maryland residents and businesses to take action. The combination of efforts by the State, nonprofits, education institutions, and utilities should insure that public education and outreach efforts reach all segments of the public.~~

~~The TWG recommends the State to tap into the science and technology expertise from institutions in the state (e.g., The Johns Hopkins University School of Public Health, Goddard Space Flight Center, National Oceanic and Atmospheric Administration, and The University of Maryland at College Park) to develop~~

information needed for public education and outreach. Many scientists from these institutions are deeply concerned about climate change and are disappointed at the lack of visible leadership on this issue from all levels of government thus far. They will be enthusiastic to volunteer their services when they are called upon.

Environmental non-profits and environmental organizations within the faith communities are also poised to support action-initiatives from the State when it shows visible leadership and the urgency that climate change calls for. The TWG recommends the State to tap into their support to organize massive community actions in conservation and energy efficiency.

1. STATE, COUNTY, AND LOCAL GOVERNMENT INITIATIVE

Educate and coordinate legislatures and agencies on climate change, conservation, and energy efficiency for government facilities, operations, and transportation. For example, achieve measurable GHG reduction through

- Lighting, indoor temperature, insulations, hot water temperature, and water consumption
- Reducing paper consumption (e.g., by printing multiple slides on a page and using both sides)
- Reducing consumption of single-use containers (e.g., drinks in plastic bottles and cans)
- Using fuel efficient vehicles
- Growing trees in place of lawns

Goal: Legislatures and government agencies reinforce and further the state goals and serve as role models for citizens in conservation and energy efficiency; measurable GHG emission reduction

Timing: Complete a plan in 1 month and start implementation in 3 months

Parties involved: State, county, and local government agencies and legislatures

Implementation mechanisms:

- Develop informational material (brief, specific, and actionable guidelines) appropriate for this target audience
- Deliver information and guidelines on climate friendly measures to department secretaries, managers, and building/ground managers to stimulate actions in conservation and energy efficiency
- Periodical inspections to reinforce guidelines

Cost: Salaries for 2 state coordinators (about \$250K/year)

2.STATE K-12 EDUCATION INITIATIVES

Require schools (public and private) at all levels to include climate change, energy conservation, and energy efficiency in curriculum at all levels. These school-age instructions may influence behaviors for a life time and stimulate climate friendly behavior in peers and families. Develop a set of state-wide teaching modules (each to be used in a one-hour lecture, includes slides and teaching notes) on different climate change subjects. All modules include a call for actions in conservation and energy efficiency. These modules are

- Climate change and its implications (elementary school level)
- Climate change science (middle school)
- Social and political impacts of climate change (middle school)
- Public health impacts of climate change (high school)
- Renewable energies and climate friendly technologies (high school)

Set up a website (e.g., as part of the Maryland State Department of Education website) to

- Host modules for teachers to download to reduce distribution cost
- Host voluntary experts on these subjects to answer questions from teachers (and students) to reduce training cost for teachers

- Host weblogs for teachers to share teaching experience

Encourage schools in other states to adopt these teaching modules.

Goal: High awareness in climate change and climate friendly behavior in students and their families

Timing: Complete the plan in 2 months, issue grants to develop teaching modules in 4 months, and start delivering teaching in the 2009 school year

Parties involved: Maryland State Department of Education, MDE, County School Boards

Implementation Mechanisms: Delegate the Maryland State Department of Education to coordinate this initiative and use the College of Education and climate/environmental science programs at College Park to manage the development of teaching material. Issue grants to experts to develop these teaching modules. "Borrow" related, existing teaching material from other school systems as much as possible to reduce cost.

Cost: \$100K start up; issue a \$10K grant each to develop modules in 3 months (total \$50K); \$50K to develop and host the website

3. MARYLAND CLIMATE LEADERSHIP CORPS

Form a new voluntary *Maryland Climate Leadership Corps* (a state chartered organization??), with county chapters, to coordinate community actions. The Corps is not to replace existing environmental groups, but instead coordinate them into concerted efforts and to draw higher visibility to climate actions from the public. The Corps will attract volunteers from

Environmental non-profits

Faith communities, social and civic groups

High school student in fulfilling community services

College voluntary interns

Adult volunteers

The Corps will call on and coordinate environmental non-profits (e.g., Sierra Club, Chesapeake Bay Foundation) and environmental organizations in the faith communities (e.g., The Eco-Justice Program, Greater Washington Interfaith Power and Light) to educate and organize the larger populations for widespread conservation and energy efficiency actions.

Goal High awareness on climate change and climate friendly behavior in citizens and widespread community actions on conservation and energy conservation; measurable GHG emission reduction

Timing Complete the plan in 1 month and start implementation in 3 months

Parties involved State and county departments of environment, environmental groups

Implementation mechanisms Start the implementation with a conference of interested parties (e.g., environmental organizations) to form the *Maryland Climate Leadership Corps* and establish its charter. With some support from the Sate Government for coordination (e.g., 2 state-funded coordinators), the Corps will be mostly sustained by volunteers and private donations. It is likely that within a few years, the Corps will mature to the level that state support is no longer needed.

Cost: Salaries for 2 state coordinators (about \$250K/year)

4. HIGHER EDUCATION INITIATIVE

Recommend guidelines to higher education institutions to

Include climate science and climate-friendly technologies (such as renewable energy development) in their curricula

Partner with industries to transfer climate-friendly technologies from research to industries.
Apply climate friendly measures (conservation and energy efficiency) on campuses
Form student chapters of the *Maryland Climate Leadership Corps* to coordinate campus actions (e.g., public education, energy-conservation demonstration) and student members to further public education and outreach in neighboring communities

Goal: High awareness of climate change and climate friendly behavior in students; widespread institutional and student actions on conservation and energy efficiency; measurable GHG emission reduction

Timing: Complete the plan in 1 month and complete the development of guidelines within another 4 months; deliver the guidelines to higher education institutions within 6 months of start

Parties involved: Maryland Higher Education Commission; higher education institutions in Maryland

Implementation mechanisms: Delegate the Maryland Higher Education Commission to organize a working group representing selected higher education institutions from the state to develop these guidelines. Issue these guidelines as recommendations to institutions for implementation.

Cost: Salary for 1 state coordinators (about \$125K/year)

5. PUBLIC MEDIA INITIATIVE

Organize an annual 1-day conference for regional (MD and neighboring jurisdictions) public media representatives on the

Latest climate science and observations

Climate change impacts on public health, regional environment, the Chesapeake, and the economy
Applications of climate friendly technologies

Develop a website to host voluntary experts to answer climate related questions from journalists.

Goal: Media information consistent with accepted climate science and latest technologies; high awareness in climate change and climate friendly behavior in citizens

Timing: Complete the plan in 1 month and organize the first annual conference within 6 months

Parties involved MDE and University of Maryland College of Education at College Park

Implementation mechanisms: Delegate the College of Journalism at College Park to plan and organize this annual conference. Invite authoritative panelists in climate science, climate impacts on public health, environment, and economy; renewable energy and climate friendly technologies. These experts can be tapped from institutions such as The Johns Hopkins University School of Public Health, Goddard Space Flight Center, National Oceanic and Atmospheric Administration, and The University of Maryland.

Cost: About \$60K/year

6. COMMERCIAL AND HOMEOWNERS INITIATIVE

Collaborate with county departments of environment and utilities to educate and stimulate commercial organizations (Chamber of Commerce, building industry, building owners/tenants), apartment tenants, and homeowners to adopt climate friendly measures and promote climate friendly products. Deliver information (e.g., short seminars) on the climate crisis and call for citizen actions in conservation and energy efficiency. Perform energy and environment audits of homes and buildings and provide specific recommendations for improvements such as

Lighting, indoor temperature, insulations, and hot water temperature with measurable GHG emission reduction

Reducing paper consumption (e.g., by printing multiple slides a page and using both sides)

Reducing consumption of single use containers (e.g., drinks in plastic bottles and cans)
Growing trees in place of lawns

Goal High awareness of climate change and climate friendly behavior in these organizations: measurable GHG emission reduction

Timing Complete the plan in 1 month and start implementation in 3 months

Parties involved State and county departments of environment, utilities

Implementation mechanisms

Cost: Salaries for 2 state coordinators (about \$250K/year)

7. TRANSPORTATION INITIATIVE

Educate and encourage transportation operators (buses, taxis, limousines, trucks, boats) to adopt climate friendly measures such as
Plan routes and avoid traffic congestion using GPS devices
Turn off engine while waiting
Use renewable fuels

Goal: High awareness of climate change and climate friendly behavior in transportation operators; measurable GHG emission reduction

Timing: Complete the plan in 1 month and start implementation in 3 months

Parties involved: State and county departments of transportation

Implementation mechanisms:

Cost:

8. AGRICULTURE AND FORESTRY INITIATIVE

Collaborate with the State Agriculture Extension to distribute information to encourage farmers and forestry operators to practice climate-friendly measures. Develop a website to host voluntary experts to answer climate related questions from this target audience.

Goal: High awareness in climate change and climate friendly behavior in transportation operators

Timing:

Parties involved:

Implementation mechanisms:

Cost:

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-6. Tax and Cap Policies

Policy Description

Sample text in italics.

[Insert text as appropriate] *The MD MWG approved as a priority policy options for analysis by Energy Supply- (ES-x: GHG Cap-and-Trade) and ES-x: Carbon (GHG) Tax). The ES TWG will quantify the emission reductions and costs or cost savings associated with these options. The CC TWG requests will review the results of the ES TWG quantification process towards achievement of proposed goals.*

Policy Design

[Insert text as appropriate]

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-7 **Review Institutional Capacity to Address Climate Change Issues Including Seeking Funding for Implementation of Climate Action Panel Recommendations**

Sample text in italics.

Policy Description

~~{Insert text as appropriate}~~ *Addressing the myriad of challenges posed by climate change and implementing the numerous recommendations emanating from this process will be a long-term endeavor for the state of Maryland. In order to do in a strategic and cost-effective way it is important to review the state's capacity in some or all of the following areas: finances, governance, authority, expertise, technology, etc.*

~~Enactment of legislation and adoption of policies to mitigate GHG emissions is the essential first step for Maryland. Additionally, it is necessary that the State create the governance and organizational capacity to execute GHG mitigation policies, implement programs, monitor and analyze results, and modify and update policies and programs as necessary over time.~~

~~Additional~~ Additional agency resources will likely be required to implement some aspects of the MD climate protection strategies. The state needs to identify appropriate governance mechanisms, agency capabilities, staffing and funding for effective implementation and enforcement of GHG mitigation programs. Also, financial mechanisms will be needed to stimulate investment in developing cost-effective climate solutions.

Policy Design

~~{Insert text as appropriate}~~

Goals: ~~{Insert text as appropriate}~~ The governance structure requires involvement at the highest levels of the Executive Department. Agency organizational and staffing capacity must be adequate to oversee and carryout comprehensive GHG mitigation programs and activities. To this end, the elements of successful State institutional capacity include:

- A member of the Governor's staff assigned as liaison for GHG policies
- A department secretary assigned as the lead official for coordinating GHG mitigation activities
- A sub-cabinet committee for coordination of GHG programs and activities across departments and agencies
- A departmental agency that is tasked with: implementing key GHG mitigation programs and activities; serving as a coordinating point with respect to programs and activities housed in other agencies; analyzing and evaluating the overall effectiveness of GHG mitigation efforts; recommending changes and improvements to the efforts; and, generally exercising primary responsibility for promoting successful GHG mitigation.
- Assignment of responsibility to all departments to consider and take into account GHG consequences when making decisions about departmental policies, programs and activities.

- Full funding for the lead agency and all departments to carryout GHG responsibilities.
- A State funding mechanism to stimulate investment in cost-effective climate change solutions.

Timing:

The institutional capability should be created as soon as possible by Executive Order and by policy and budget legislation. A supplemental budget should be introduced in the 2008 session of the General Assembly. An Executive Order should be issued in 2008. To the extent necessary, legislation enacted in 2009.

Parties Involved:

Governor's Office, General Assembly, Department of the Environment, and other Executive Departments

Other:

Within the office of every department secretary or agency head a staff member must be assigned responsibility to assure that GHG mitigation objectives are integrated within the decision making process of that department or agency.

The Department of Economic Development should be assigned the responsibility to develop for legislative enactment a funding mechanism to stimulate investment in cost-effective climate change solutions.

~~**Timing:** [Insert text as appropriate]~~

~~**Parties Involved:** [Insert text as appropriate]~~

~~**Other:** [Insert text as appropriate]~~

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-8. Participate in Regional, Multi-State and National GHG Reduction Efforts

Sample text in italics.

Policy Description

~~*[Insert text as appropriate] Regional approaches undertaken in collaboration with partner states or other organizations can offer broader and more economically efficient opportunities to reduce GHG emissions across Maryland's economy. Maryland is already a member of Northeast States Regional Greenhouse Gas Initiative (RGGI). There are several options for broadening Maryland's regional, market based GHG reduction strategies which should be considered, such as: Clean Cars Initiative,*~~ The Governor and the Maryland General Assembly should aggressively push for Federal action to reduce GHGs. Global warming is a problem that requires global action. An aggressive approach to GHG reductions within the United States would have a significant effect on the international reductions needed to begin reversing global warming trends.. *-Ultimately, many of the climate protection issues need to be addressed at the national level and Maryland needs to help shape those national initiatives.*

Policy Design

[Insert text as appropriate]

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-9. Promote Economic Development opportunities associated with Reducing GHG Emissions in MD

Sample text in italics

Policy Description

Sample text in italics.

[Insert text as appropriate] *There are many economic and business opportunities involved in designing and implementing a comprehensive GHG Reduction Strategy for Maryland. The state should work with public and private entities to design mechanisms that promote these economic opportunities for Maryland businesses.*

Policy Design

[Insert text as appropriate]

Goals: [Insert text as appropriate]

Timing: [Insert text as appropriate]

Parties Involved: [Insert text as appropriate]

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-10. Create Capacity to Address Climate Change in an “After Peak Oil” Context

Sample text in italics

Policy Description

~~[Insert text as appropriate]~~Oil is a finite resource and many respected scientists and industry analysts project that we will reach the top of the bell curve of oil production—the “peak” of oil production—soon, if we have not already done so. Once we have passed the peak, termed After Peak Oil, oil will become ever more costly. This cost will be manifest in both higher prices for a barrel of crude as well as the higher environmental and health costs of extracting oil from nontraditional sources, such as tar sands, which require far more energy to extract and will result in even greater greenhouse gas emissions.

~~Because our society has been fully constructed to depend on an endless supply of inexpensive oil, the eventual lack of inexpensive oil will have profound impacts on all aspects of our society. In particular, greenhouse gas emissions could greatly increase as a result of society relying on the least expensive alternative to oil, which would be coal. Moreover, projections of greenhouse gas emissions over time have generally not factored in the increased emissions from the use of more coal or the increased emissions from the use of nontraditional fossil fuels as the demand for energy outstrips the supply of oil.~~

~~Any hope of successfully achieving the state’s greenhouse gas emission reduction goals will depend on effectively avoiding the “easy” energy shortage solutions of relying on more coal or encouraging the use of nontraditional fossil fuels.~~

~~Maryland should take a strategically proactive stance to deal with After Peak Oil by establishing a State ‘After Peak Oil’ Advisory Council of experts and stakeholders to review and evaluate all proposed climate change and energy-related policies and legislation for their appropriateness and sensibility in the context of shrinking supplies of affordable oil.~~

~~By 2010, Maryland will have a State After Peak Oil Advisory Council reviewing and evaluating all proposed climate change and energy-related policies and legislation. The recommendations of the Council should be considered and concerns addressed before the proposed policy or legislation moves forward.~~

Policy Design

[Insert text as appropriate]

Goals: ~~[Insert text as appropriate]~~By 2010, Maryland will have a State After Peak Oil Advisory Council reviewing and evaluating all proposed climate change and energy-related policies and legislation. The recommendations of the Council should be considered and concerns addressed before the proposed policy or legislation moves forward.

Timing: ~~[Insert text as appropriate]~~By 2009, the Governor will appoint a core group of Council members representing major stakeholders and content experts. Additional Council members will be recruited by a non-political process. By 2010, the Council will have finalized their mechanism of operation.

Parties Involved: ~~[Insert text as appropriate]~~ All state agencies, energy producers, consumers, environmentalists, health professionals.

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-11. Evaluate Climate Change Policy Options to Determine Projected Public Health Risks/ Costs/ Benefits

Sample text in italics

Policy Description

~~[Insert text as appropriate]~~Climate change will have profound and largely negative effects of the health of Maryland's citizens. Dealing with these negative effects will be costly in terms of actual money spent by state government, private businesses, and individuals for health care; increased burden of disease on individuals; time off work and out of school; and lost productive years of life. Moreover, many strategies for reducing greenhouse gas emissions also have beneficial effects on health, such as improved air quality.

Because the potential risks to health of unmitigated climate change are so extreme, and the potential benefits to health of certain policies to reduce greenhouse gas emissions are significant, these risks, costs, and benefits should be considered for all climate change and energy policies. It is also conceivable that policies to reduce greenhouse gases could have unintended negative side effects on health.

To ensure that these risks, costs, and benefits are evaluated in a systematic manner, Maryland should establish a State Climate Change Environmental Health and Protection Advisory Council of content experts and stakeholders to review all climate change and energy-related policies and legislation for health benefits and risks to all Maryland's citizens. Careful attention should be given to vulnerable populations such as children and the elderly.

Policy Design

~~[Insert text as appropriate]~~**Goals:** By 2010, Maryland will have a State Climate Change Environmental Health and Protection Advisory Council reviewing and evaluating all proposed climate change and energy-related policies and legislation. The recommendations of the Council should be considered and concerns addressed before the proposed policy or legislation moves forward.

Timing: By 2009, the Governor will appoint a core group of Council members representing major stakeholders and content experts. Additional Council members will be recruited by a non-political process. By 2010, the Council will have finalized their mechanism of operation.

Parties Involved: All state agencies, energy producers, consumers, environmentalists, health professionals.

Goals: ~~[Insert text as appropriate]~~

Timing: ~~[Insert text as appropriate]~~

Parties Involved: ~~[Insert text as appropriate]~~

Other: [Insert text as appropriate]

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO_{2e}

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.

CC-12. Review Institutional Capacity to Address Climate Change Issues

Sample text in italics

Policy Description

[Insert text as appropriate] Addressing the myriad of challenges posed by climate change and implementing the numerous recommendations emanating from this process will be a long-term endeavor for the state of Maryland. In order to do in a strategic and cost-effective way it is important to review the state's capacity in some or all of the following areas: finances, governance, authority, expertise, technology, etc.

Policy Design

[Insert text as appropriate]

Goals: *[Insert text as appropriate]*

Timing: *[Insert text as appropriate]*

Parties Involved: *[Insert text as appropriate]*

Other: *[Insert text as appropriate]*

Implementation Mechanisms

[Insert text as appropriate]

Related Policies/Programs in Place

[Insert text as appropriate]

Types(s) of GHG Reductions

Not applicable.

Estimated GHG Savings and Costs per MTCO₂e

Not applicable.

Key Uncertainties

[Insert text as appropriate]

Additional Benefits and Costs

[Insert text as appropriate]

Feasibility Issues

[Insert text as appropriate]

Status of Group Approval

Pending.

Level of Group Support

TBD.

Barriers to Consensus

TBD.