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**MEETING SUMMARY
MARYLAND GREENHOUSE GAS & CARBON
MITIGATION WORK GROUP
Meeting #8, March 19, 2008
10:00 AM – 4:00 PM**

Attendance:

1. MWG Members:

Tad Aburn, *MDE/ARMA*, Chair

Paul Chan, *Citizen*

Bill Chandler, *Transition Energy*

Frank Heintz, *Citizen (phone)*

Brad Heavner, *Environment Maryland*

Michael Li, *MEA*

Mike Malinoff, *City of Annapolis* (by phone)

Eileen McLellan for Michael Replogle, *Environmental Defense*

Cindy Parker, *JHU*

Mathias Ruth, *Univ of MD*

Dr. Lise Van Susteren, *The Climate Project*

2. MD Department of Environment (MDE):

Liz Entwisle

Renee Fizer

Diane Franks

Brian Hug

Paul Lang

Katy Perry

Marcia Ways

Jim Wilkinson

3. Center for Climate Strategies (CCS):

Ken Colburn, *Facilitator*

Gloria Flora, *Facilitator*

Christopher James, *Facilitator*

Katie Pasko, *Assistant*

Public and others in attendance:

Bill Cunningham, *UJAE*
Rob Doudrick, *US Forestry Service*
Caitlin Rayman, *MDOT*
Howard Simons, *MDOT*

Background documents:

All posted at: http://www.mdclimatechange.us/GHG_Carbon_Mitigation_WG.cfm.

1. Agenda
2. Overview Presentation
3. Draft Policy Option Catalogs and Descriptions
 - a. Agriculture, Forestry and Waste Management
 - b. Energy Supply
 - c. Residential, Commercial and Industrial
 - d. Transportation and Land Use
 - e. Cross Cutting Issues

Discussion items and key issues:

Tad Aburn was at legislative hearings on the Global Warming bill in Annapolis. All present were welcomed and asked to introduce themselves. Ken Colburn reviewed the agenda. All PODs will be reviewed, and if complete, the MWG will vote on approval of the option.

The MCCC will meet tomorrow, on March 20th.

The schedule for the Final Report has been changed and is outlined at the end of this summary.

Final Report Structure

The MCCC will issue the Final Report. The structure is still be determined, but will include:

- ◇ Executive Summary
- ◇ Brief Overview
- ◇ Chart of Policy Options
- ◇ Charts of Business-As-Usual
- ◇ Inventory & Forecast Chapter
- ◇ Technical Appendices – Complete I&F and all PODs

The actual format is still to be determined. The Interim Report was very well received and should be incorporated. Each of the three Working Groups will have sections on Interim Recommendations, Progress Made and Final Recommendations. It was suggested that the “Cost of Doing Nothing” report be included at least in tone.

A section regarding actions that Maryland can take to influence federal actions should be considered.

The Final Report will be used by the legislature and for outreach to the general public and should highlight short, intermediate and long-term goals.

There was strong support to continuing to use the format of the Interim Report.

Goals for this Meeting

Ken Colburn reviewed the agenda for the meeting. The current status of all policy options will be reviewed. At this point, the quantifications for all options continue to be independent of the others. The elimination of overlapping GHG reductions will be performed next. At this meeting, the goal is to reach consensus and approve policies wherever possible, steps 7-10 of the process. Any objections will be recorded. The section “Barriers to Feasibility” can be completed as a ‘minority report’ to outline specific objections.

Policy Option Draft Review

All TWGs have included a summary chart of GHG reductions and estimated costs for the PODs from that TWG. Negative costs equate to actual dollar savings from implementation.

There are still overlaps of GHG reductions to be resolved. For example, three TWGs are utilizing all the biomass available in Maryland for their reduction calculations.

All TWGs have been lightly attended at recent meetings.

Agriculture, Forestry and Waste

AFW-1 - Forest Management for Enhanced Carbon Sequestration with Mitigation of Forest Loss Due to Insects, Disease, Pests and Invasive Species

Final approval by MWG

This policy generated biomass for the energy stream, as well as greater carbon sequestration.

AFW-2 - Managing Urban Trees and Forests for Greenhouse Gas Benefits with Mitigation of Forest Loss Due to Insects, Disease, Pests and Invasive Species

Final approval by MWG

Net savings result from increased shade and reductions of energy usage. The location of planting should be included, as planting on north sides of structures is less desirable than south side planting for energy savings.

Increase the urban canopy to 50% by 2020 over all land types: residential, commercial and industrial.

Include a list of the species of trees best suited to CO₂ reductions, as well as the estimated mortality rates for trees in each land type. The TWG used a value of 0.006 tCO₂/tree/yr.

AFW-3 - Afforestation, Reforestation and Restoration of Forests and Wetlands

Approved to proceed by MWG

Mention should be made of the current exclusion of utilities from reforestation efforts. SB654 would require utilities to conform to state law in construction efforts.

Resolve TLU overlap.

Revisit the available acreage.

AFW-4 - Protection and Conservation of Agricultural Land, Coastal Wetlands and Forested Land**Final approval by MWG**

Calculations utilized Maryland Land Preservation goals extensively.

There are no direct GHG reductions from this policy option, only avoided emissions. These would be counted as reductions from the business-as-usual model.

AFW-5 - "Buy Local" Programs for Sustainable Agriculture, Wood and Wood Products**Final approval by MWG with comments**

The focus is on farmers' market programs. All costs are administrative only, based on the Farm to School program model.

The quantification is based on an Iowa study of 28 fresh produce items and the transportation costs associated with them.

Add to the Assumptions section that only sustainable costs are included, no production cost factors. Cite which crops would be replaced under these programs.

AFW-6 - Expanded Use of Forest and Farm Feedstocks and Bi-Products for Energy Production**Approved to proceed by MWG.**

It is explicitly noted that poultry litter is used in quantification.

DNR provided assistance with sources of biomass. Assumptions include:

- The use of (in-state) local feedstocks expanded to a 50 mile radius, even if out of state
- Food sources are food only, ie. corn
- Municipal Solid Waste includes paper, garbage and yard trimmings.

The POD should include an explicit statement that conversion of food cropland to energy croplands will result in significantly higher GHG emissions globally.

The MWG agreed on that:

- Food croplands should not be counted

- Soy, corn, etc are removed from the calculations
- A proximity radius of 50 miles, rather than state lines will be used
- The use of MSW shall be included

AFW-7 - In-State Liquid Biofuels Production

Approved to proceed by MWG.

Food feedstock removed from quantification, resulting in negligible GHG reductions at high cost. This result assumes that 100% of biomass is utilized in this option.

Once the biomass overlap is resolved, this may no longer be a viable option. Currently, incentives for ethanol production are very high, while biomass incentives are low.

These calculations need to be updated. A figure of \$100/bbl oil will be used for quantification. This price is easily converted to percentage for future estimates.

AFW-8 - Nutrient Trading with Carbon Benefits

Approved to proceed by MWG.

AFW-9 - Waste Management through Source Reduction & Advanced Recycling

Final approval by MWG

Cross Cutting Issues

The TWG has completed all PODs, except for minor revisions. Only two members responded in the affirmative to the request for approval. No objections were indicated noted by the remaining members.

Frank Heintz, Renee Fizer and Liz Entwistle were extremely helpful and supportive in creating these policy options.

The MWG approved all the PODs without objection.

CC-1 - GHG Inventory and Forecasting

Final approval by MWG

No changes since last meeting.

CC-2 - GHG Reporting and Registry

Final approval by MWG

No changes since last meeting.

CC-3 - Statewide GHG Reduction Goals and Targets

Final approval by MWG

A statement was added to the Additional Benefits section.

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

Final approval by MWG

A statement was added to add emphasis to the relevance of Lead-by-Example. Building issues were moved to RCI for quantification.

CC-5 - Public Education and Outreach

Final approval by MWG

No changes since last meeting.

CC-6 – Tax and Cap Policies

Final approval by MWG

This was moved to Energy Supply (ES-7)

CC-7 – Review Institutional Capacity to Address Climate Issues Including Seeking Funding for Implementation of MWG Recommendations

Final approval by MWG

No changes since last meeting.

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

Final approval by MWG

No changes since last meeting.

CC-9 - Promote Economic Development Opportunities Associated with Reducing GHG Emissions in Maryland

Final approval by MWG

A new sentence was added at the end of the first paragraph to address MWG concerns.

CC-10 - Develop Tools to Explicitly Address Policy Issues in an “After Peak Oil” Context

Final approval by MWG

The Uncertainty section was added.

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

Final approval by MWG

No changes since last meeting.

CC-12 – Review Institutional Capacity to Address Climate Issues, especially Leadership Development.**Final approval by MWG**

No changes since last meeting.

Energy Supply

The benchmark years have been changed to 2012 and 2020 in all PODs.

ES-1 - Promotion of Renewable Energy Sources, including Zoning, Siting, Incentives to Promote Centralized Facilities, Long-term Contracting and Performance-based Contracting**Approved to proceed with language changes**

A significant barrier to implementation is the restriction placed on many sites against windmills, etc. These restrictions should be relaxed in the future to facilitate renewable energy sources. Removing the restrictions could irritate many groups, without much GHG reduction benefit. This issue is of particular importance where residential properties are proximate to small farms.

Discussion of the MWG centered on creating incentives rather than removing zoning barriers.

The language of the first bullet should be modified to reflect a positive tone rather than negative. A model to review zoning ordinances and restrictive covenants needs to be developed in order to encourage the use of renewable energy sources.

ES-2 - Technology-focused Initiatives for Electricity Supply (Biomass Co-firing, Energy Storage, Fuel Cells, Landfill Gas, Clean Energy Incentives)**Final approval by MWG as an unquantified option*****ES-3 - GHG Cap and Trade*****Approved to proceed with no objections**

This option will not be quantified at this time. Updates to data are expected in April and will be incorporated at that time. RGGI values can be added to estimates, as consideration is being given to using RGGI as the data standard nationally.

The MWG decided to retain RGGI as the standard at this time and advocate for expansion of the program in the future, rather than creating a new program.

ES-4 - CCSR Incentives, Requirements and/or Enabling Policies including Administration, Regulation, Liability and Incentives)**Approved to proceed with no objections**

There have been no changes to the option. There are wide ranges in the data, based on the underlying assumptions. The mid-range is being used as the default values in the quantification.

Tons are being reduced through geologic sequestration. The calculations, however, are based solely on efficiency improvements only, not transportation and geologic storage.

The TWG is asked to be more specific and review the ranges shown to reflect:

- Efficiency of CO₂e capture and costs
- Transportation to storage costs and impact of GHG emissions
- Impact of siting plants close to storage locations

Assume that 15% of technologically feasible reductions will actually occur by 2020.

ES-5 - Clean Distributed Generation Standards, Incentives and Barrier Removal, including Combined Heat and Power (CHP), District Heating and Cooling, Landfill Gas, Solar, Fuel Cells and others

Approved to proceed with biomass clarification

Issues with quantifying this option have been resolved.

Specify the amount of reliance on biomass in the POD.

ES-6 - Integrated Resource Planning (IRP) including Re-Regulation, if necessary, and/or a State Energy Plan

Final approval by MWG as an unquantified option

This policy option has not been quantified. The MWG agreed to call for IRP to be reinstated.

ES-7 - Renewable ~~and/or Environmental~~ Portfolio Standard ~~and/or Energy Efficiency~~ Portfolio Standard

Final approval by MWG with title change

RPS up to 20% is Tier 1. Renewables result in large cumulative numbers at relatively low cost.

Current legislation is proposing 7.5%. This option increases the goal to 20% by 2022. All gains from this change are reflected in the quantification.

Existing renewable projects are not included in the reductions, but are in the baseline.

The TWG is asked to model renewables only.

Change the title to Renewable Portfolio Standard to reflect the move of efficiency standards to RCI.

ES-8 - Efficiency Improvements and Repowering Existing Plants

Approved to proceed with no objections

Fuel costs are included in the repowering calculations, which include the use of 70-80% of viable biomass, beginning in 2010 and culminating in 2014 at 80%.

AFW and ES will discuss the biomass dry tom usage, including the potential for switchgrass.

ES-9 – Carbon (GHG) Tax**Approved to proceed with no objections**

The TWG began this work with a Cap & Trade analysis and ended with a Carbon Tax proposal. The difference is that a cap sets a limit on availability, with resultant prices while a tax sets the price level, which drives reductions.

The benefit to a Carbon Tax is the ability to impact multiple sectors, providing more flexibility in addressing the GHG reduction goals.

This option as well as Cap & Trade require additional work after other options are finalized.

ES-10 – Generation Performance Standards and/or Mitigation Requirements for Electricity**Approved to proceed with no objections**

The TWG should clarify and refine the goals versus current levels in Maryland.

Current generation standards can't favor one state over another. A standard can be set for all power sources. The MWG agrees to set the proposed standards lower than the current Maryland standard of approximately 1200 lbs CO₂/MWh. The TWG should add a straight cap for all electricity, ramping it if necessary.

Residential, Commercial, Industrial Policy Options

Chris James and Alice Napoleon presented an overview of all RCI policy options.

RCI-1 - Improved Building and Trade Codes for Energy Efficiency**Approved to proceed with no objections**

The MWG noted that not all jurisdictions have the same codes at present. There is no statewide mechanism to implement uniform statewide codes.

An assumed 3% incremental cost was used for BGE data.

RCI-2 - Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity and Natural Gas (Including Expansion of Existing Programs and Peak Load Reduction)

Approved to proceed with no objections

It was assumed that EmPower MD would result in a 10% reduction in energy use. This was structured as a public benefit fund with RGGI funds as the major funding source. There were only minor changes to the language from the last draft.

It was suggested that limits be placed on the sale of non-Energy Star appliances in Maryland. There are feasibility issues that would have to be addressed. Questions were raised about the 'versions' of Energy Star that are referenced. Further investigation is required.

This policy option design is based on incentives, not penalties.

The MWG agreed to strike the reference to sales tax exemptions to limit loss of funds.

RCI-3 - Low-cost Loans for Energy Efficiency**Approved to proceed with no objections**

Extensive revisions have been made to this policy option.

The loan program is now based on a revolving loan concept vs. the Pay-As-You-Save program described at prior meetings. The goal of the policy option is to provide access to more efficient homes to a wider target audience. The program would begin in 2008, with initial GHG reduction benefits to commence in 2009.

Design features include rental properties, not just owner-occupied housing.

This program is significant, not because of the net GHG reduction benefits, which are relatively low, but because it reaches a different audience than is usually realized.

The assumptions made in quantification include:

- All funds are loaned each year
- Interest is collected on the loans each year. The rate is different than other quantifications, as the government gets a different interest rate on its funds.
- All collected funds are re-issued as new loans.
- The focus of the program is residential and commercial, not industrial.

RCI-4 - Improved Design, Construction, Appliances, and Lighting in New and Existing State and Local Government Buildings: "Government Lead-by-Example"**Approved to proceed with no objections**

Quantification has been changed to reflect implementation of LEED Gold standards from 2009-2012 and LEED Platinum from 2013-2020. As 2009 budgets are currently being approved, the 2009 figures may not be meaningful.

Innovative Financing should be considered, such as a state buydown program.

Consider changing the language to “LEED or comparable” standards to allow more flexibility in construction. Constructing to Silver standards costs about the same as Gold.

Implementation must be phased in, as LEED begins with the design stage. Building codes are likely the best means to achieve this implementation.

The TWG is asked to address proposed 2009 construction in the quantification.

Incorporate Platinum standards in designs beginning in 2009. Construction projects with the design stage already completed should not be modified.

LEED standards should be set as the goal, not a restrictive regulation to new construction.

The table in the policy option reflects a more aggressive approach, reflective of the comments from the last MWG meeting.

RCI-5 - Energy Efficiency and Environmental Impacts Awareness and Instruction in School Curriculum

Assigned to CC-5

RCI-6 - Promotion and Incentives for Improved Design and Construction (e.g., LEED, Green Buildings, or Minimum % Improvement Beyond Code) in the Private Sector

Assigned to RCI-1

RCI-7 - More Stringent Appliance/Equipment Efficiency Standards (State-level, or Advocacy for Regional or Federal-level Standards)

Approved with no objections

Energy Star ratings should be updated regularly and include version numbers to reflect the different standards used over time.

Federal agencies should be encouraged to adopt and improve standards.

RCI-8 - Rate structures and Technologies to Promote Reduced GHG Emissions (Including Peak Pricing and Inverted Block Rates)

Approved to proceed with no objections

Inverted block surcharge results have been incorporated in the calculations. Three levels were used to demonstrate the impact on consumers.

There are unquantified benefits to smart metering, ie. reducing peak demand, thereby increasing net capacity. Add language to address the metering issues.

This is a very complicated policy, as it is predicated on utility business models and modifications to residential usage.

RCI-9 - GHG or Carbon Tax

Assigned to ES-3

RCI-10 – White Roofs, Rooftop Gardens, and Landscaping (including Shade Tree Programs) and Solar Electric Panels

Approved to proceed with no objections

The values in the cost table have been updated.

RCI-11 – Energy Efficiency Resource Standard (EERS)

Approved to proceed with no objections

The TWG should mention the use of LED lighting in the Policy Description.

Transportation and Land Use Policy Options

Will Schroeer and Jim Wilson presented an overview of all TLU policy options.

Representatives of MD DOT presented an overview of current programs and efforts to the MWG. The ability of MDOT to convert their bus fleet to hybrid vehicles is dependent on funding. A hybrid bus costs about \$200K more than a standard bus.

The MWG was reminded that the goal is to reduce GHGs. Reduction of VMT is merely one indicator of progress to the actual goal. Other sources in this sector include non-mobile and maritime emissions.

The process that is being followed does not require that each sector will contribute reductions in proportion to the costs of implementation. Some options enable reductions to be achieved in other arenas.

All reductions are reviewed cumulatively. Focus on VMT results in the full cost of GHG reductions to be placed on Maryland residents. There is a significant amount of through traffic on Maryland highways, which contribute to GHG emission levels, but are not addressed by VMT based programs.

TLU-1- Increased Fuel Tax

Approved to proceed with no objections

This policy option is designed to be revenue neutral, as the primary goal is to reduce fuel usage. Revenues generated would be used to fund other climate change initiatives.

A member noted that proposing a \$2/gallon gasoline tax is an extremely controversial suggestion, and will generate immediate and vocal opposition. Members agreed that, while a significant tax is an easily quantified cost to consumers, there is also an actual cost to climate change through continuing GHG emissions and also to the “business as usual” model. These facts need to be widely publicized.

The MWG members agreed to strike the \$2/gallon figure and let the legislative process determine the actual fuel tax ceiling to be imposed.

The POD should include reference to exploration of transportation systems options, including examples from other states. With an introduction such as, “If, for example, you choose to implement a gas tax, the estimated costs and benefits are outlined in the following tables.”, the estimated costs and benefits tables should be included in the final draft of the POD

TLU-2 Land Use and Location Efficiency

Approved to proceed with no objections

No changes were made to this policy option.

TLU-3 Transit

Approved to proceed with no objections

The TWG is asked to remove the specifics of funding from this option. However, it should be noted that an increased fuel tax would lead to increased use of public transportation, as affordable commuter options would be limited.

The TWG is asked to perform cost effectiveness calculations, using the following assumptions:

- The trip will be made regardless of the mode, changing the original mode from driving to public transit.
- A trip via public transit is equal in quality to driving.
- The ratio of transit usage to VMT is doubled.

List all of the caveats to achieving the goal and performing these calculations, including the difficulty the federal government has in quantifying transit benefits.

TLU-4 Low Greenhouse Gas Standard

Approved to proceed as presented with no objections

The TWG changed the reduction of carbon intensity from 10% to 5% by 2020.

There were no other changes.

The fuels used in the calculation are not required to be ethanol. The exact composition of biodiesel is not specified. Low carbon standard fuels could be water-based fuel cells, not necessarily biofuels.

The performance standard now requires a 5% reduction in GHGs, but does not specify the mechanism by which the goal is to be achieved.

TLU-5 Intercity Travel: Aviation, High Speed Rail, Bus

Approved to proceed with no objections

The TWG is asked to strike the high speed rail specificity in the language and to include passenger and freight rail.

The Inventory and Forecast will be clarified to include energy supply impacts of RGGI, as referenced in this option.

The remaining options were not discussed in detail. The MWG decided that TLU-6 through 9 all work in conjunction with one another. The TWG should list all caveats pertaining to these options.

TLU-6 Pay-as-you-Drive Insurance

Approved to proceed with no objections

TLU-7 VMT Reductions

Approved to proceed with no objections

TLU-8 Bike and Pedestrian Infrastructure

Approved to proceed with no objections

TLU-9 Pricing Measures

Approved to proceed with no objections

TLU-10 Off-Road Engines/Vehicles

Approved to proceed with no objections

The title of this option was changed to “**Total Emission Reduction**”.

Costs are difficult to specify for the recommended 10-15% reduction in GHGs. The TWG is asked to use costs from programs with similar reductions as a basis for estimation.

TLU-11 Evaluate the GHG Emissions Impacts of Major Projects

Approved to proceed with no objections

Ken Colburn reviewed the preliminary aggregation of GHG reductions due to all the proposed policy options, shown in slide 14 of the PowerPoint slides. The figures used to generate the graph have not been reviewed to remove overlapping reductions from different TWGs.

The red line in the graph represents the recommended GHG reduction targets. The blue line includes all recently passed legislation at the state and national levels, except EmPower MD rules. The green line represents the implementation of the proposed policy options, without adjustment. *Note that this graph is a draft version only.*

The MWG requested that the next version of the graph interpolate the red and green lines back to 2006. The 2012, 2015 and 2020 values should be highlighted. Show the blue line without the Clean Car and RGGI programs.

Next Steps:

All remaining policy options will be finalized and voted upon at the next meeting.

Future Meetings and Schedule:

The next meetings are scheduled for April 22 and a final meeting on May 9. At these meetings, all policy options will be finalized and voted upon. Any changes to the Inventory and Forecast will be accomplished during this time.

The tentative schedule for completion of the MWG section of the Final Reports is:

April 22 – MWG meeting

April 30 – MCCC meeting

May 9 – Final MWG meeting

May 16 – Draft Final Report – all sections

May 23 – Comments due

May 30 – MCCC Meeting to review second draft Final Report

June 6 – MCCC comments and revisions due

June 13 – MCCC meeting

June 19 – MCCC Final Vote

Public Input and Announcements:

The next MCCC meeting will be held on March 20th in Annapolis.