



WWW.MNCLIMATECHANGE.US

Meeting #5 Summary
Minnesota Climate Change Advisory Group (MCCAG)
St. Paul, Minnesota
November 8, 2007

Attendees:

MCCAG: Jon Anderson, Fred McCormick (for Leith Anderson), Staci Bohlen (for Willis Anthony), Mike Houser (for Peter Aube), Daniel Bartholomay, Alexander Bascom, Jan Callison, Rick Carter, Staci Bohlen (for Mitch Davis), Chuck Dayton, Barbara Freese, Ann Glumac, Bill Grant, J. Drake Hamilton, Andy Hart, Bill Heaney, Robert Jagusch, Greg Jason, Boise Jones, John Kelly, Julie Ketchum, Scott Lambert, Greg Langford, Chuck MacFarlane, Tim McGraw, Margaret Hodnik (for Dave McMillan), Greg Miller (for Jeff Muffat), Gary Connett (for Eric Olsen), Doug Peterson, Steve Raukar, Mike Robertson, David Sparby, Nicole Rom (for Will Steger), Peter Sullivan, Barb Thoman, (for David Tilman), Nim Traeger, Jeff Wilkes, Bruno Zagar,

Department of Commerce (DOC): Edward Garvey, Linda Limback, Bill Sierks, Janet Streff

Pollution Control Agency (PCA): Brad Moore, David Thornton, Todd Biewen, Peter Ciborowski, Anne Claflin, Colleen Coyne, Lisa Herschberger, Jeff Ledermann, John Seltz, Rebecca Walter

Center for Climate Strategies (CCS): Tom Peterson, Bill Dougherty, Will Schroeer, Jeff Wennberg, and by telephone Steve Roe, Adam Rose, and Dan Wei.

Others: See Attachment for Members of the Public that Attended MCCAG Meeting #5.

Background Documents: (all posted at www.mnclimatechange.us)

1. Notice and Agenda
2. Draft Summary for MCCAG Meeting #4
3. Powerpoint Presentation
4. Memo to MCCAG on Preparation for 5th Meeting
5. Policy Option Descriptions for Analysis for each TWG

Discussion and Conclusions:

1. Welcome and Introductions

Edward Garvey welcomed attendees and explained that the seats at the head of the table will accommodate TWG members when it is their time to describe their options. Edward also explained that there is only one copy of the meeting materials for every three MCCAG members in order to save paper.

2. Approval of Summary of Prior Meeting; Other Logistics

The MCCAG did not consider approval of the summary for Meeting #4. MCCAG members were asked to submit any comments they have on the summary to David Thornton or Edward Garvey.

3. Review of the MCCAG Process Status and Next Steps

The agenda was reviewed and the reporting order of the TWGs was revised as follows: RCI, ES, AFW, TLU, C & T and CC. Tom Peterson reviewed the slide showing the 10-step process, and noted that the group is currently working on steps 4 through 8. The last round of straw proposals are being completed and quantification of the draft options has begun. The quantification has focused on costs and cost-saving, as well as their GHG reduction potential and feasibility issues. There are some issues about externalities. These are important to understand before decision making.

Peterson noted that the MCCAG today should note any changes to the policy design and other assumptions to provide feedback to the TWGs who will update the quantification analysis. In MN there is a lot of actions that have already been taken and the emissions reductions associated with these actions are being quantified. We'll show you today how the effects of reductions from some of the existing actions affect the GHG forecast. He also noted that for some of the pending policy options there are overlaps and that as we work through the quantification of these options we will have to remove any double counting of emission reductions and costs or cost savings associated with these overlaps.

Peterson noted that this process is particularly intense because of all the options under consideration. The next meeting is Dec 5 at which we will have first runs done on all options and other runs completed on some and these will be ready for voting. If there are some options that are early consensus items, the MCCAG should try to reach consensus on final approval of the options today; we do not anticipate many but please bring them out.

The MCCAG discussed meeting dates for January (see discussion at the end of this summary).

4. Public Input and Announcements

No members of the public came forward to comment at the beginning of the meeting.

5. Review and Approval of the Draft Straw Design Proposals for Policy Options

The CCS facilitator for each TWG briefly reviewed the description and design characteristics for each priority policy option, invited TWG members to offer clarifying comments when their TWG policies were presented, and then invited questions and concerns to be expressed by remaining MCCAG members and the public. The following provides a brief summary of the discussion on each option, followed the MCCAG's decisions on objections/modifications to the design and quantification approach for the draft policy options.

Residential, Commercial, and Industrial

Summary of Comments and Responses to Questions:

RCI-1 (Maximize Savings from CIP) – This option targets efficiency on the demand side. Initial analysis shows cumulative GHG reductions of 85 million tons. There was very little controversy among TWG members about RCI-1. The cost-effectiveness show a positive number though it should be negative, necessitating further review by TWG members, especially regarding the avoided cost estimate and the level of program funding on a forward looking basis. There was a question regarding the impact of energy efficiency on the sales forecast, to which the response was that the option analyzes meeting the 1.5% sales reduction goal, after accounting for a certain amount of energy efficiency already embedded in the forecast.

RCI-2 (Improved Uniform Statewide Building Codes) – This option yields negative costs of about \$12 per ton of carbon dioxide equivalent (tCO₂e) emissions avoided; a “no-regrets” option where societal benefits outweigh societal costs. There was a strong consensus on this among TWG members who noted that MN has always being a leader on building codes and that they should be statewide. There was a question about the small level of cumulative savings achieved, 0.1%, by 2025 with the explanation provided that MN already has a very capable code for new buildings that covers 85% of the state. The option applies the savings from the current building code to the remaining 15% that is not currently covered by it, hence the small level of absolute savings. There was the suggestion that the option should also be applied to buildings that have already been built.

RCI-3 (Green Building Guidelines and Standards Based on Architecture 2030) – This option yields a negative cost-effectiveness number; another “no-regrets” option where societal benefits outweigh societal costs. There was discussion about whether this should be required of all public buildings or just some. The resolution was that this issues will be worked out when it's clear how much GHG reduction potential the option has. The design of the option is based on Architecture 2030 which is a standard that mixes in purchase of green power. It was clarified that this option applies to all new public buildings, as a requirement for some and providing incentives for others. There was a comment that the option is expensive and the concern expressed that it not become an unfunded mandate. It was clarified that MN should have exceptional new buildings regarding energy efficiency but for remodeling projects, the standard would be high

standard but not as high as for new buildings; and that the fact that the cost effectiveness is negative means that this option will pay for itself over time.

RCI-4 (Incentives & Resources to Promote Combined Heat and Power (CHP)) – This option would increase the efficiency of energy use through CHP. The TWG noted that it has not had time to really look at the preliminary numbers. The results, preliminary at this time, indicate that the option achieves substantial GHG reductions over time. There was a comment suggesting that the straw proposal text should be clarified regarding the GHG reduction goal or the cost mechanisms are. It was clarified that the TWG used existing reports to assess a range of potential savings in MN. These assessments are still in process.

RCI-5 (Reducing High GWP Emissions) – Analysis on this option was reported as still underway and too early to report results.

RCI-6 (Non-utility Strategies and Incentives to Encourage Energy Efficiency and Reduce GHG Emissions) – This option yields a negative cost-effectiveness number; another “no-regrets” option where societal benefits outweigh societal costs. This is a strategy that complements utility efforts, especially in the industrial sector. This option would involve on-going learning and making technical assistance available to work with industry. It was clarified that this is the only option that targets GHG reductions in industry. There was a question regarding the accessibility of the assumptions that went into the analysis with the response that the assumptions will be specified in the straw proposals, using appendices, as needed.

RCI-7 (Conservation Improvement-type Program for Propane and fuel oil efficiency) – Analysis on this option was reported as still underway and too early to report results.

RCI-8 (Energy Performance Disclosure) – This is recommended by the TWG as an unquantifiable option.

RCI-9 (Promote Technology-Specific Applications to Reduce GHG Emissions) – This is recommended by the TWG as an unquantifiable option.

RCI-10 (Support Strong Federal Appliance Standards and Require High State Standards in the Absence of Federal Standards) – This is recommended by the TWG as an unquantifiable option. This was challenged by an MCCAG member with the resolution that the possibility for quantification matter will be reviewed by the TWG.

Objections/Modifications from the MCCAG to the Design and Quantification Approach for the Options:

RCI-1 – Further analysis is needed.

RCI-2 – Further analysis is needed.

RCI-3 – Further analysis is needed.

RCI-4 – Further analysis is needed.

RCI-5 – Further analysis is needed.

RCI-6 – Further analysis is needed.

RCI-7 – Further analysis is needed.

RCI-8 – Further analysis is needed.

RCI-9 – Further analysis is needed.

RCI-10 – The TWG should assess whether this option can be quantified at the same level of detail as the other options.

Energy Supply

Summary of Comments and Responses to Questions:

As context for the discussion, it was stated that the numbers are preliminary and will be reassessed going forward. Sensitivity analysis was considered. The ES TWG came up with a total of 14 options. Four have been moved (the CHP (ES-9) option has been moved to the RCI TWG; the carbon tax (ES-11) and Cap & Trade (ES-14) options have been moved to the Cap & Trade TWG; the fuel standard option (ES-2) has been moved to the TLU TWG).

ES-1 (Generation Performance Standard [GPS]) – Runs were performed with/without the RPS; with/without affecting planned additions; with/without affecting imports. This option achieves substantial reduction at a societal cost (cost-effectiveness numbers are all positive). It was mentioned that this option was viewed as an interim step before Cap & Trade. The question was raised whether the option eliminates coal-fired plants with the clarification that several scenarios were analyzed and in one of those scenarios (i.e., the GPS affects planned additions), the results showed that no future coal plants would be built in MN. There was another question regarding the potential impact on the price of electricity with the response that rate impacts are not currently being analyzed but could be integrated into the analysis is desired by the MCCAG.

ES-2 – (Fuel Standard) – The analysis of this option has been moved to the TLU TWG.

ES-3 (Efficiency Improvements, Repowering and other Upgrades to Existing Plants) – This option has been modeled as biomass co-firing at existing coal stations. There was a comment that it is likely that the cap and trade program would handle co-firing issues with the clarification that each option is being evaluated separately at this stage of the process; later they will be evaluated on an integrated basis. There was an explicit request by an MCCAG member that rate impacts for all the options should be considered.

ES-4 (Transmission System Upgrading, including reducing transmission line and distribution system loss) – It was clarified upfront that the results are very preliminary as

costs for upgrades are still being researched. It was clarified that the MCCAG has requested that this option be also be applied to natural gas pipelines.

ES-5 (Renewable and/or Environmental Portfolio Standard) – It was clarified that this is both a mitigation option as well as one that is addressed by current legislation. There was a question regarding whether this option quantifying the new RPS, with the clarification that yes, the existing legislation was modeled. There was a suggestion that for future meetings, the specific assumptions be clarified.

ES-6 (Nuclear Power Support and Incentives) – It was clarified that at the 27 September meeting, the MCCAG directed the ES TWG to consider life extension only. The results assume a new plant therefore they are hypothetical and intended to give people an idea of the cost and emissions impact of a new nuclear plant. Full fuel cycle emission factors were used.

ES-7 (Advanced Fossil Fuel Technology Incentives, Support or Requirements) – This option considered the installation of an IGCC plant in MN without carbon capture and storage. Even with an IGCC plant transmission will be required. It was clarified that each option will be evaluated relative to the level of consensus achieved (i.e., unanimous, super majority (1 or 2 objections) and simple majority (more than half on board.)

ES-8 (Carbon Capture and Storage and/or Reuse Policies) – For purposes of modeling, this option considered the installation of an IGCC plant in MN without carbon capture, storage, and long-term monitoring. More broadly taken, the option is technology neutral and doesn't assume IGCC; it could be post-combustion carbon capture. There was a question regarding the percentage of the carbon that would be captured and where would it go, with the response that three runs were conducted on the capture levels (i.e., 81%, 85%, and 91%) to explore sensitivities.

ES-9 (Large-scale, Supply-oriented Combined Heat and Power (CHP) and Geothermal Incentives and/or Barrier Removal) – This analysis of this option has been moved to the RCI TWG.

ES-10 (Voluntary Reduction Targets) – This was considered an unquantifiable option by the ES TWG.

ES-11 (Carbon Tax) – The analysis of this option has been moved to the Cap & Trade TWG.

ES-12 (Distributed Renewable Energy Generation) – The analysis of this option is still underway.

ES-13 (Technology-based Approaches) – This was considered an unquantifiable option by the ES TWG.

ES-X (Cap & Trade) – The analysis of this option has been moved to the Cap & Trade TWG.

Objections/Modifications from the MCCAG to the Design and Quantification Approach for the Options:

ES-1 – Further analysis is needed.

ES-2 – No objections to moving this option to the TLU TWG for quantification.

ES-3 – Further analysis is needed.

ES-4 – Further analysis is needed.

ES-5 – Further analysis is needed.

ES-6 – No objections.

ES-7 – Further analysis is needed.

ES-8 – Further analysis is needed.

ES-9 – No objections to moving this option to the RCI TWG for quantification.

ES-10 – No objections.

ES-11 – No objections to moving this option to the Cap & Trade TWG for quantification.

ES-12 – Further analysis is needed.

ES-13 – No objections.

ES-X – No objections to moving this option to the Cap & Trade TWG for quantification.

Transportation and Land Use

Summary of Comments and Responses to Questions:

While the policies are listed 1 through 13 below, please note that the policies were grouped and presented as follows:

- Policies that reduce carbon emissions by reducing VMT: options 1, 2, 5, 7, 8, 9, and 10.
- Policies that reduce carbon emissions per mile: options 4, (portions of) 5, 6, 8, 12, and 13
- Policies that reduce carbon per unit of fuel: option 6

TLU-1 (Improved Land Use Planning and Development Strategies) – Is expected to reduce VMT. Its impact will be medium and long term.

TLU-2 (Expand Transit, Bicycle, and Pedestrian Infrastructure) –The TWG recommended that the Metro Transit plan be implemented to double regional ridership.

TLU-3 (Low GHG Fuel Standard) – This policy was discussed under vehicle efficiency. Since the last MCAG meeting, renamed Low GHG Fuel Standard to make clear that it was not the same as the CA low carbon fuel standard (LCFS). Question: would analyses take mining and refining into account? Response: yes, the analysis is a life cycle analysis and will go all the way back to mining and refining (“well to wheels”).

TLU-4 (Infrastructure Management) – Efficiency in vehicular travel is the main thrust of this policy option. It is expected that implementation of the pricing policy option will also have an impact on vehicular efficiency on roadways.

TLU-5 (Climate-Friendly Transportation Pricing) – A number of policies can be implemented and are currently under development for costing purposes and will be ready for presentation at the next meeting. This is another policy option that is expected to reduce VMT.

TLU-6 (Adopt California Clean Car Standards) – Question remains about relationship to MN’s biofuel goals. Question about why the initial analysis does not meet the expectations of a MCCAG member in terms of reduction in GHG emissions from the implementation of the policy. CCS agreed to recheck the calculations.

TLU-7 (“Fix-it-First” Transportation Investment Policy and Practice) – Building new roads on the urban edge supports urban sprawl and thus an increase in emissions. Fix it first seeks, among other goals, to target that source of increased emissions.

TLU-8 (Update Road Standards—Now part of TLU 4) – Road standards should be shaped such that all modes are accommodated on roads. As such, this option was discussed along with options that reduce emissions from VMT, while supporting total mobility.

TLU-9 (Workplace Tools to Encourage Carpooling, Bicycling, and Transit Ridership) – Main goal is to create employer programs to incentivize employees.

TLU-10 (Congestion Pricing (or Tolls) With Targeted Use of Revenue Toward Travel Alternatives—Now Part of TLU-5) –There is no specific price target established as of yet.

TLU-11 (Truck Stop Electrification) – This policy option has been expanded to include anti-idling.

TLU-12 (Mobile Source Emissions Reduction) – Captures current MN voluntary emissions reductions programs.

TLU-13 (Reduce Maximum Speed Limits) – Would reduce carbon by reducing highway speeds.

General discussion regarding cost analysis – Request to understand economic impact and costs including environmental externalities, ancillary costs, and health benefits. CCS explained that cost analysis will be available for the next meeting and that analysis would include as much of the externalities, costs and benefits as can be ascertained. Possible sources of information to determine environmental externalities and health benefits were mentioned. Such sources include Excel Metro Emission Reduction Project and Center for Transportation Studies at UMN.

Objections/Modifications from the MCCAG to the Design and Quantification Approach for the Options:

TLU-1 – No objections.

TLU-2 – No objections.

TLU-3 – Concern raised about the feasibility of TWG-suggested targets. Directed TWG to revise and/or justify.

TLU-4 – No objections.

TLU-5 – No objections.

TLU-6 – No objections.

TLU-7 – No objections.

TLU-8 – No objections.

TLU-9 – No objections.

TLU-10 – No objections.

TLU-11 – No objections.

TLU-12 – No objections.

TLU-13 – No objections.

Agriculture, Forestry, and Waste Management

Summary of Comments and Responses to Questions:

AFW-1 (Agricultural Crop Management) – TWG members questioned the targets under this and other agriculture options (% objectives); wanted to see baseline data. CCS explained that this type of information is still under development and will be presented as part of the quantification of benefits and costs during the next phase of development. Another member questioned the current levels of no-till practiced on the state's agricultural lands. CCS will provide this type of information in the quantification of

benefits and costs. The Conservation Tillage Information Center (CTIC) at Purdue University should have data on no-till practices in MN.

Another member had concerns about the “GPS goal” (advanced technology for nutrient application) for reducing fertilizer application and associated emissions. Global Positioning System (GPS) based technology is just one example of methods that farmers could use to reduce fertilizer application. It is just provided as an example. The policy option is not meant to be prescriptive as to the technology to be employed.

TWG members had general concerns about the levels of goals and baseline information and the lack of sufficient information to determine whether the goals were being set too high or low. CCS explained that once a goal structure is in place an analysis can be performed and the stringency of the goal will become clearer. The MCCAG will have the ability to make the goals more or less stringent, if needed, and the TWG will notify the MCCAG where it is felt that the goals should be refined.

AFW-2 (Land Use Management Approaches for Protection and Enrichment of Soil Carbon) – Concerns expressed for AFW-1 were also applicable to this option.

AFW-3 (In-State Liquid Biofuels Production) – There was concern from one member about the goals of the first policy element to use 80% biomass energy in MN’s ethanol plants. CCS explained that the TWG’s goal was that the heat input and electricity used by these plants would be 80% from renewable sources, not just biomass. One member felt that the goals supported the direction that the MN ethanol industry should be headed.

AFW-4 (Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production) – One member felt that the biomass from this option should be directed toward thermal energy and not electricity. Another member saw the importance of maintaining adequate agricultural residue to maintain soil carbon for that portion of the feedstock stream. Another member said that biomass availability is a big concern for being able to move forward on a current biomass project that he is working on (forest resources are uncertain). Another member mentioned the importance of monitoring land that might be taken out of food production to produce biomass for energy. CCS and the TWG will keep these issues in mind during the next steps in policy option development.

One member asked whether there had been any discussion w/ the ethanol industry in MN. Steve R. was not aware of any communications of TWG members with the industry.

One member voiced concern regarding the use of sustainable harvesting practices, particularly within the forestry sector. Steve R. mentioned that there is a lot of sensitivity in the TWG to assure that sustainable feedstocks are identified and utilized under this option. For instance, round wood is specifically identified as being a feedstock that is not suitable for energy use (sustainable round wood production should be directed toward durable wood products). The TWG also recognizes the concern about leaving a certain fraction of agricultural residues on the field to maintain soil carbon levels.

AFW-5 (Forestry Management Programs to Enhance GHG Benefits) – A member mentioned the need to revise the wording of one of the goals to increase sustainable harvest over current levels “consistent with environmental objectives”. Also increases in forest products output should be toward durable wood products, as these sequester carbon over a long period of time. Another member asked about the metric for the wildfires policy element – CCS explained that the goal is to treat a certain number of acres to reduce wildfire risk.

AFW-6 (Forest Protection—Reduced Clearing and Conversion to Non-Forest Cover) – One member questioned whether the correct carbon density definitions were being used to address lands that are likely to be converted in the future (e.g. brushy forested lands with lower densities versus forests with higher amounts of carbon). CCS mentioned that there will be a review of the carbon density definitions. The focus of the option is to keep productive forest lands from being converted, as well as less intensively managed forest lands.

Members questioned the goal of a “no net loss” of forest carbon. A TWG member and CCS commented that this is a good approach, as it circumvents issues that almost always come up if an approach designed around “no net loss” of forest acres is used (resistance to the idea that no forest land can be converted in the future).

AFW-7 (Integrated Waste Management) – A member had similar concerns to those raised under AFW-1 on the need to see information included on baseline waste management practices. The member also wanted to see GHG reduction and cost estimates broken out separately for recycling, composting, and source reduction.

AFW-8 (End of Use Waste Management Practices) – No comments.

Objections/Modifications from the MCCAG to the Design and Quantification Approach for the Options:

AFW-1 – One member objected about language suggesting that carbon sequestered in agricultural soils had GHG benefits due to the issue of permanence. The TWG will need to address this in the policy write-up. Otherwise, no objections.

AFW-2 – No objections.

AFW-3 – One member mentioned the need to address the impacts of fuel production versus food/feed. Otherwise, no objections.

AFW-4 – One member felt that biomass for electricity was not feasible. Otherwise, no objections.

AFW-5 – No objections.

AFW-6 – No objections.

AFW-7 – No objections.

AFW-8 – No objections.

Cross-Cutting Issues

Summary of Comments and Responses to Questions:

CC-1 (GHG Inventories, Forecasting, Reporting, and Registry) – No comments.

CC-2 (Statewide GHG Reduction Goals and Targets) – No comments.

CC-3 (State and Local Government GHG Emissions (Lead-by-Example)) – No comments.

CC-4 (Public Education and Outreach) – No comments.

CC-5 (Tax and Cap Policies) – This option has been moved to the Cap & Trade TWG. Discussion deferred to new TWG.

CC-7 (Participate in Regional and Multi-State GHG Reduction Efforts) – No comments.

CC-8 (Encourage the Creation of a Business-Oriented Organization to Share Information and Strategies, Recognize successes, and Support Aggressive GHG Reduction Goals) – No comments.

CC-9 (Dedicate Greater Public Investment to Climate Data and Analysis) –

CC-10 (Facilitate the Development of an Effective Carbon Credit System for MN) – No comments.

CC-11 (Create a Market Advisory Group) – This option has been moved to the Cap & Trade TWG. Discussion deferred to new TWG.

Objections/Modifications from the MCCAG to Design of the Options:

CC-1 – No Objections.

CC-2 – No Objections.

CC-3 – No Objections.

CC-4 – No Objections.

CC-5 – No Objections; the MCCAG agreed to move this option to the Cap & Trade TWG during its prior meeting.

CC-7 – No Objections.

CC-8 – No Objections.

CC-9 – No Objections.

CC-10 – No Objections.

CC-11 – No Objections; the MCCAG agreed to move this option to the Cap & Trade TWG during its prior meeting.

Cap & Trade

Summary of Comments and Responses to Questions:

The Cap & Trade TWG presented general discussion regarding C&T and some preliminary results from modeling with different combinations of multi-state C&T partners under C&T-1. Key questions and responses from the whole discussion are as follows:

Question: Where is the TWG in terms of getting a handle on these issues?

Response: At about 25 percent.

Question: The model runs show MN buying allowances in every multi-state system. What does this mean as opposed to the other states?

Response: It means that the marginal cost of compliance in MN is higher than the region as a whole. It means that it is cheaper for some MN businesses to buy allowances than to reduce emissions. But this does not mean MN “loses”. There is an economic benefit to the state that can sell excess allowances, but there is also a benefit to MN since the opportunity to buy cheap allowances saves MN businesses money. Both the buyer and the seller win if you agree that the cap is correct public policy.

Question: The TWG has a lot to do, what is your schedule?

Response: The TWG is meeting on a weekly basis.

Question: Won't the system place an undue burden on small businesses that are not likely to get involved in allowance trading and the like?

Response: Small emitters are assumed to comply by placing the point of regulation upstream, such as at the point the fuel is imported into the state. The business or individual would “see” the program through the price, like a tax. But the importers would have to provide the reductions or allowances.

Question: Then this is really more like a tax?

Response: Only to the user when the allowance is required upstream, but not in any other way. The wholesaler could reduce the carbon content of their fuel mix, for example, to lower cost.

Question; How would a market advisory group work?

Response: The MCCAG advises on what to do, and a Market Advisory Group would advise on how to do it. It would be a more in-depth analysis like the MAC in California.

Question: Is it true that the Midwest would be better off on its own?

Response: Yes, these preliminary numbers suggest that the total cost would be cheaper if the Midwest states had their own program. This is good if you buy allowances, like MN, but not so good if you sell them. But data quality has a big impact on this and we need better data from other Midwest states, which we are getting.

Question: This appears to be a low-cost option.

Response: These numbers assume that MN puts complementary policies in place. If you only do the cap the cost could be higher.

Question: How does the cash flow work if say MN buys 200 million from California. Would the money go to a corporation, the state, small businesses or individuals?

Response: This depends on whether allowances are given away or sold. It will ultimately be a business by business decision. If you know you need to lower emissions by 30 percent and know the cost to do this you can decide whether it makes more sense in reductions, buy allowances or “over-invest” in reductions and sell allowances.

Question: Does this really change behavior? It appears it just allows entities to buy their way out of complying.

Response: The cap limits emissions, so reductions must take place across the economy. The incentive is to lower cost, which in many cases will reduce emissions.

Question: How does this end over time?

Response: You need to think in terms of a decade or more. The economic signals you are sending encourage investments that will take years to recover, so the expectation must be that the program will be in place for many years. RGGI is for 10 years with an assumed renewal at the end.

Question: How do we create a regional program that could be replaced by a federal one in the future?

Response: The committee is looking into that question.

Question: Since there are no CO₂ ‘scrubbers’, shouldn’t the money go to R&D?

Response: That is one option, but there are many others including investing in GHG reduction efforts outside the Cap & Trade TWG. One idea in RGGI is to use up to 100 percent ‘consumer benefit’ to recycle the revenues back to the ratepayers to mitigate the impact of the program on consumer costs.

Objections/Modifications from the MCCAG to the Design and Quantification Approach for the Options:

C&T-1 – No Objections

C&T-2 – No Objections

C&T-3 – No Objections

C&T-4 – No Objections

CC-11 – Recommendation to move CC-11 to new Cap & Trade TWG - No Objections.

6. Review and Discussion of the Draft Minnesota Inventory and Forecast

The slides on the inventory and forecast were reviewed by the MCCAG. The MCCAG did not have any recommendations for updating the inventory and forecast.

7. Next Steps for MCCAG and TWGs

The next stages of the MCCAG process will include completion of the following milestones:

- Review and revision of policy option design, analysis, and draft options as needed during TWG calls and meetings.
- Final approval of remaining MCCAG policy option recommendations at our sixth and seventh meetings.
- Final approval of the statewide inventory and forecast of GHG emissions by the final meeting.

8. Agenda, Time, and Date for Next Meetings

The next MCCAG meeting will be held on December 5, 2007 in a location to be announced. The issue of the January meeting date was raised and the following was proposed: 2 meeting dates including a date later than January 10th (such as the 17th) AND a second date of January 31. It was agreed that organizers would get back to group with final January date proposal.

The main agenda items for the sixth meeting will be for the MCCAG to (1) begin review and final approval of draft pending policy options, with the goal of approving as many as possible; and (2) review and approve progress and recommended updates to the statewide inventory and forecast of emissions.

9. Public Comments

Comment - If ancillary benefits are included in the analysis, the ancillary costs associated with, for example, converting coal to natural gas, costs to consumers, and costs to our food supply from non-cellulosic ethanol should also be included.

Comment - To make a fair judgment on nuclear, costs should go out to 2050, not just to 2020. The public member noted that it is not likely that advanced, clean-coal technology in MN is unlikely and that costs of these technologies should be evaluated independently. I don't think we're going to be getting advanced coal technology and I noticed that carbon offsets are being counted right away.

Question – Has the analysis included the curtailment of fossil fuel with replacement by renewables?

Answer – No, we haven't gotten to the point of identifying this. This issue will be addressed. Thus far in analysis, it is not included.

Comment – The utilities need to look at the assumptions of the models used for the analyses and check the contingency factors. The member of the public felt that the contingency factors used in the analysis are high. If the Energy Information Administration (EIA) has shown that costs are low, then we need to source the data we're using.

Comment – Was a .35 capacity factor for wind used? If so this is high. It is not just about a capacity factor.

David Thornton closed the meeting by thanking the MCCAG members for their time and talents.

Attachment

Members of the Public Attending MCCAG Meeting #5
 St. Paul, Minnesota
 November 8, 2007

Name	Company
Bailly, John	GMHF
Birgen, Deborah	Missouri River Energy
Black, William	MMUA
Blankenship, Jeanette	Minnesota Housing
Carnival, Doug	D. Carnival
Chilseth, Andrew	
Dotson, Allen	MPCA
Fujii, Stacey	GRE
Gerber, Darrell	Clean Water Action
Fujii, Stacey	Great River Energy
Gregerson, Mike	Great Plains Institute
Grooms, Lloyd	
Hamlin, Jake	Cargill
Hinderman, Jerry	
Hortman, Melissa	MN House
Jorovsky, Don	Sen Ellen Anderson's Office
Juras, Michael	SC DHEC
Kowdelka, Kirk	MN House
Kuhczyk, Mike	
Lemke, Matthew	Winthrop & Weinstine
Linde, Robin	Governor's Office
MacLaury, Kyle	MN CEE
McAuliffe, Bill	Star Tribune
Myers, Jenny	MN Senate
Newmark, Richard	Audubon
Pasko, Brian	Sierra Club
Patton, Robert	MN Dept. of Agriculture
Pierson, Christine	MN Rural Electric Association
Pomroy, Andy	MN House
Poster, Charlie	Sen. Klobuchar's Office
Roth, Mary Jo	Great River Energy
Sayler, Bruce	Connexus Energy
Shoemaker, Doug	MN Renewable Energy Society
Silesky, Nancy	Chestnut & Cambronne, P. A,
Smith, Brett	Sierra Club
Sundberg, Lee	MN Rural Electric Association
Turner, Ben	Travelers
Turnure, Jim	Xcel Energy