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MEETING SUMMARY
MINNESOTA CLIMATE CHANGE ADVISORY GROUP
Agriculture, Forestry, and Waste Management Technical Work Group
(AFW TWG)
Meeting/Call #3, June 29, 2007, 8:30am – 12:30pm

Attendance:

1. Technical Working Group members: Stan Ellison, Will Anthony, Bill Hunt, Joe Maher, Andy Hart, Greg Miller (for David Berg), Dave Zumeta, Dave Tillman, Shalini Gupta, Jim Klienschmidt, Julie Ketchum, Chris Radatz (for Staci Bohlen), Cheryl Miller, Steve Raukar (also with Ted Troolin)

2. Center for Climate Strategies (CCS) staff:
   Stephen Roe, Brad Strode

3. Minnesota Department of Commerce (DOC) and Pollution Control Agency (PCA) Liaisons and Attendees:
   Liaison - David Richfield (MPCA) and Ed Garvey (DOC)
4. Other State Agency Staff: MPCA: Anne Clafin, Rebecca Walter, Al Dotson, Lisa Herschberger; Agriculture: Paul Burns, Michael Yost; DNR: Clarence Turner; MCES: Rebecca Flood; Minnesota House of Representatives staff: Kirk Koudelka, Joanna Dornfeld, Andy Pomroy
5. Public attendees: Don Arnostis, IATP; Trudy Richter, David Wellington of RRA; Doug Carnival, National Solid Waste Management Association; Ginny Black, Audubon Society.

Background documents:

(all posted at http://www.mnclimatechange.us/Agriculture_Forestry.cfm**)**

1. Summary of Call #2
2. Meeting Notice and Agenda
3. PowerPoint for Teleconference.
4. AFW Draft Catalog of State Actions.
5. AFW State Actions Descriptions.

Discussion items and key issues:

1. This meeting was held at the Minnesota Pollution Control Agency in St. Paul, Minnesota. TWG members not able to attend in person called in via teleconference.
2. CCS conducted the roll call and reviewed the Agenda for the call. Although the Agenda states that the first order of business after the review of the summary for Call #2 was to be a discussion of the Catalog of State Actions, CCS planned to begin with a discussion of the inventory and forecast. This was done to provide additional context (GHG reductions) for the discussion on policy actions.
3. CCS reviewed the summary of Call #2. A TWG member commented that sub-section k. on the summary did not accurately reflect the conversation during the last call; the TWG member would like the summary and catalog to reflect not only new waste energy technologies, but existing best-available technologies. No other changes were suggested by the TWG. [Note that this issue was also brought up later in the meeting to note a change needed in the policy actions catalog; the TWG agreed to add existing technologies to the catalog].
4. CCS reviewed the ground rules for TWG meetings. It was noted that TWG meetings are intended to facilitate discussion amongst TWG members. Other participants wishing to comment on topics of discussion during the meeting should wait until the call moderator opens the discussion up to input from the public and state agencies. State staff with information requiring urgent input should consult with the State liaison (Dave Richfield), before intervening in TWG discussions.
5. CCS identified the current steps in the process that are being addressed. This meeting was intended to cover steps 1 and 3, reviewing the Draft Inventory and Forecast (I&F) and identifying initial priorities for analysis.
6. The next order of business was to conduct a thorough review of the MN Draft I&F. CCS is working on extending the I&F to 2025 to match the time horizon of the MN Next Generation Energy Act.
    a. CCS noted that units used on the Draft I&F were million metric tons carbon dioxide equivalent ($MMtCO_2e$). Methane and nitrous oxide emissions were multiplied by conversion factors that take into account differences in global warming potential of these gases in relation to CO_2. Discussion ensued concerning the differences in greenhouse gases (GHGs) and the conceptualization of an "$MMtCO_2e$."
    b. The results of the Agriculture Draft I&F were reviewed. Each major contributing source of GHGs is listed and a graphical display shows the historic and projected emissions from each source in the agriculture sector.
    c. CCS agreed to provide a summary table that numerically displays the results of the Draft I&F.
    d. The data sources, methods, key assumptions, and key uncertainties used in development of the Agriculture Draft I&F were listed by CCS.

e. The Waste Management Draft I&F was reviewed. CCS noted that the one potential source that was not included in the Draft I&F was industrial wastewater. CCS cited lack of data as the principle reason for the exclusion of industrial wastewater in the draft I&F. The TWG made it known that a study had recently been completed that reported the phosphorus content of industrial wastewater. It was suggested that data used in this study might help CCS complete the industrial wastewater analysis as a part of the Waste Management Draft I&F.

f. CCS discussed the point that harvested wood products and wood products in landfills are accounted for in the Forestry Draft I&F and show a net sequestration of CO_2.

g. The topic of geographic boundaries to the Draft I&F analysis was discussed throughout the meeting. For this and other State-level inventories, CCS recommends using State boundaries in the inventory. So for biogenic waste generated outside of the State, but landfilled in State, CCS has not included carbon sequestration (that would be included in the inventories of those States; carbon in MN forestry waste, even that landfilled in other States, is included in the MN totals).

h. CCS segued from the Waste Management Draft I&F to the Forestry Draft I&F. The first table examined displayed historical data from the USFS stock change from 1990-2003. It was noted that the result for soil organic carbon is highly uncertain, and based on input from the USFS, CCS recommends excluding it from the totals reported for forestry carbon pool. The results from 1990-2003 showed that the Forestry sector was responsible for a net emission of CO_2, which is uncommon in the U.S. (for the U.S. as a whole, the forestry sector is a net sink of carbon).

i. A concern was raised by a TWG member that the I&F process may not have accurately captured the terrestrial sequestration in high-carbon soils such as peatlands, of which Minnesota has the second most in the US (Alaska is first). CCS noted that the Forestry I&F is currently in the Draft phase, and the TWG has the ability to disregard or amend any part of the I&F they feel is not accurate or is too uncertain to consider as the process continues. CCS will, to the best of their ability, provide the TWG with documentation of how the Forestry I&F model was developed. This documentation will include providing a link to the FORCARB model used by CCS to develop this Draft I&F. The TWG recommended reconsidering the presentation of the forestry results (in particular, the table summarizing the forest carbon pool and flux calculation results). CCS requests input from the TWG on how this table could be made easier to understand. CCS noted that future additional off-line discussion is encouraged among interested TWG members to work out issues with the Forestry I&F.

7. CCS proposed extending the time of calls to 2 hours. This was agreed upon, but it was also suggested that public and agency comment be solicited after each section of the call, rather than waiting for the end of the call. CCS replied that the flow of the call is important and that it is best to wait until the end of the call to include comments from non-TWG members.

8. The most recent Catalog of State Actions and corresponding Descriptions document (distributed by e-mail shortly prior to the call) were discussed after a short break to collect the documents. The input to the catalog from the MCCAG was reported (found on slides 5 and 6 of the PowerPoint for the call.

9. CCS stated that the purpose of the remainder of the call was to add nominal ratings and additional notes to the catalog. CCS will develop and distribute ballots via e-mail to TWG members to select the 10 options that they consider to be high priorities for analysis. The balloting method was further described by CCS. CCS will tally the ballots and review the results during the next TWG call. MCCAG will review and approve the TWG priorities, and then the TWG will develop straw proposals for policy design.

    a. AFW-1: It was suggested that the note in "other considerations" for 1.2 is entered in the same column for 1.1 as well. CCS also noted that while consolidation of options is possible, there is a level at which a large amount of consolidation of options can stall the process and make the analysis extremely difficult.

    b. AFW-2: The potential cost of 2.1.1 – unknown by CCS – is likely to be small, according to a TWG member. An idea was raised by a TWG member that another option might be needed to increase manure production in MN. However, the MCCAG has recently approved the current catalog, making additions difficult at this time. This suggestion, however, may be implemented under other options when the time comes for policy design (e.g. livestock manure management). A TWG member suggested that the GHG reduction rating for option 2.2 could be higher. Current research has shown that changes in feed can dramatically reduce the harvest time of livestock, thereby reducing total enteric fermentation and GHG releases. For option 2.3, the potential GHG emissions reduction was agreed to be ranked as low.

    c. AFW-3: It was suggested by the TWG that water management be broken off of option 3.2 and created as its own option, 3.4. Another option, 3.5 – Drainage management is suggested. The cost of 3.1 was changed from Neg-L to L.

    d. AFW-4: A note was made regarding costs of option 4.2 – implementation mechanisms can have an effect on the cost of this policy. Rather than the purchasing of easements, addressing conservation via land use policy may be more cost-effective. Another comment was registered that the term "herbaceous cover" in 4.1 should be amended to read "perennial herbaceous cover" in order to be more specific. Additionally, it was suggested that the GHG reduction potential for 4.1 be changed to H.

    e. AFW-5: CCS disclosed that a recent study completed in the UK has raised significant uncertainty regarding the efficacy of organic farming as a general mechanism to reduce GHG emissions. CCS recommends that the TWG consider specific cropping systems, rather than a broad application of organic farming. It is proposed that the option require specific changes in farming practices that reduce GHGs, rather than a broad label of "organic farming."

    f. AFW-6: A document prepared by TWG members providing additional information regarding the forestry options will be distributed after the call. A

TWG member brought to attention the fact that MN currently uses 100% of fuel-grade wood fiber to produce energy. Therefore, proposing an option that increases the amount of forest residue used for energy is a difficult proposition. CCS notes that the option could also address whether additional forest residues could be generated (e.g. via enhancement of forest health risk or fire reduction programs).

g. AFW-7: It was suggested by a TWG member that the ratings for 7.1 and 7.3 of M-H be changed to H to be consisted with current research. CCS says that analysis in other states have not shown these options to warrant a "high" rating. The rating was changed to H for 7.1 and 7.3. A comment was made that a note should be added to the "other considerations" comment for option 7.5 that additional benefits for wildlife and biodiversity should be considered. Also suggested was a re-naming of 7.5. Any change should reflect the magnitude of carbon emitted from landscape-scale wildfires and suggest a significant reduction in understory fuel available for wildfires.

h. ***Time prohibitions require that CCS solicit public comments before continuing the discussion of options. These comments are listed below.***

i. AFW-8: CCS explained the basis for the low and uncertain ratings of the options in this section. A discussion ensued over option 8.3. The expansion of engineered wood products in the Minnesota building sector may necessitate an "M" rating for potential GHG reductions.

j. AFW-9: A suggestion was made to combine the organic composting portion of 9.1 with 9.6. It was suggested that the GHG potential reduction rating change to "L." Due to disagreement regarding the GHG reduction potential of 9.5, the nominal rating will not change. The title of 9.6 was changed to "Enhanced Management of Organic Waste" and 9.1 will be amended to remove organic composting. The potential GHG reduction of 9.2 was changed to "H" and the cost was changed to "L."

k. AFW-10: A question was raised regarding the difference between 10.2 and 10.3. CCS explained that 10.2 addressed organic wastes outside of the typical municipal solid waste stream (e.g. industrial wastes, food processing, etc.). It was suggested that the GHG reduction potential of 10.3 be changed to "H."

l. AFW-11: The costs on 11.3 were changed from "L" to "M-H."

m. AFW-12: These options have not been raised in the past, so there were no ratings available at the time of this meeting. However, it is possible that these options might yield significant reductions. It was suggested that the "Conservation and/or expansion of peatlands" be changed to "Conservation of Peatlands." It was said that the cost of conserving wetlands can be quite variable, depending on whether it is necessary to build new wetlands (relatively expensive) or establish an easement on current wetlands (relatively cheap).

n. AFW-13: This option was added by the Cross-Cutting Issues TWG. This option is related to the development of a terrestrial carbon sequestration market in Minnesota. It was unknown whether this option incorporates issues of waste or renewable energy that will cause overlaps with other TWGs. After additional

discussion, the TWG felt that the option should not be incorporated into the AFW catalog. However, the TWG welcomed the opportunity to contribute to the development of applicable carbon market policy, if and when this is brought forward by other TWGs.

10. Comment from the public was solicited by CCS. One member of the public requested that Option 9.7 "Promotion of New Technologies for Waste Energy Conversion" also include existing technologies for waste conversion (e.g. refuse to energy plants). The TWG agreed to edit the title of 9.7 to also include the consideration of existing technologies.

    Another member of the public had several comments. These included the belief that the AFW group was too diverse and should be broken up into multiple groups. Also, in the forestry I&F appendix, the table showing carbon pools should be deleted due to it being confusing. Also, the member of the public wanted to see additional details on the USFS modeling that was done to establish the forest carbon flux. CCS agreed to review the forestry appendix to assure that links to all of the pertinent modeling were cited. For the summary table on forest carbon pools and flux, CCS requests input from the TWG or members of the public on how these data could be displayed to allow for easier understanding. While CCS agrees that there is a lot of diversity in the AFW group, there is also a lot of overlap as the group will see as the process moves further into policy analysis (e.g. all three sectors can contribute feedstock for renewable energy production, wastes from each sector can be managed together in some cases, etc.).

Next steps and agreements:

1. The next TWG meeting will be held on July 19, from 3:00 – 5:00 pm. Prior to this meeting, CCS will revise and distribute new policy catalog and descriptions documents. CCS will also distribute a ballot for TWG members to select their top 10 priorities for analysis. Further instructions will be supplied with the ballot.
2. Remaining TWG meetings are August 16, September 6, October 4, October 25, November 29, and December 20.
3. CCS will summarize the results of balloting, and the results will be reported during the next TWG conference call.