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MEETING SUMMARY
MINNESOTA CLIMATE CHANGE ADVISORY GROUP
Agriculture, Forestry, and Waste Management Technical Work Group
(AFW TWG)

Meeting/Call #8, November 1, 2007, 2pm – 4pm

Attendance:

1. Technical Working Group members: Andy Hart, Greg Miller, Dave Zumeta, Clarence Lehman (for Dave Tillman), Shalini Gupta, Julie Ketchum, Cheryl Miller, Stacie Bohlen, Tim Gieseke, Julie Ketchum, Jim Kleinschmidt, Don Arnostis (substitute for Jim Kleinschmidt for future meetings), Bill Lee, Ted Troolin
2. Minnesota Department of Commerce (DOC) and Pollution Control Agency (PCA) Liaisons and Attendees: Liaison - David Richfield; Rebecca Walter; Anne Claflin; Peter Ciborowski; Jim Chiles; DOC: Bill Sierks
3. Other State Agency Staff: DNR: Clarence Turner MDA: Michael Yost
4. Public attendees: Micheal Juras (South Carolina DHEC); Darwin Schultz (Hennepin County)
5. Center for Climate Strategies (CCS) staff: Stephen Roe, Glora Flora, Jennifer Jenkins and Joe Pryor

Background documents:

(all posted at [http://www.mnclimatechange.us/Agriculture Forestry.cfm](http://www.mnclimatechange.us/Agriculture_Forestry.cfm))

1. Summary of Call #7
2. Meeting Notice and Agenda
3. PowerPoint for Teleconference
4. Policy Options Document
5. MPCA Solid Waste Policy Report Presentation

Discussion items and key issues:

1. Call #7 summary reviewed and accepted. CCS thanked everyone for their hard work since the last call.
2. Report on Off-line Waste Management and Forestry Meetings (AFW 7&8).
 - Waste Management offline meeting addressed per capita goals for AFW-7 and added 35% landfill organic waste reduction goal to AFW-8.
 - Forestry (AFW 5&6)
 - Interim (2015) goal for AFW-5 now provided as half of 2025

3. Final Review of Minnesota Draft Emissions Inventory & Forecast

- Last opportunity for changes on AFW sectors
 - No comments or questions.

4. Discussion of quantification methods and preliminary results

Overall Direction

- TWG identified the need to be consistent with the use of measurements between American and metric units
 - TWG suggested to use American units (eg Acres and gallons).
 - Also suggested that including metric units in brackets afterwards would be very helpful.
- Footnotes need to be more exact and references need to be provided in final.
- Sub-groups need to focus on Implementation Mechanisms, ensure completeness as that will help substantially in quantifications and cost/benefit calculations.
- Most recent baseline data will be used, if you know of more recent data or research, notify CCS coordinator.
- CCS Coordinator for quantification is in parentheses after AFW option.

AFW-1 (Joe)

- Soil carbon calculations will be based on acres = soil carbon stored, plus reductions in fossil fuel use.
- Nutrient calculations will look at Business As Usual (BAU) as baseline

AFW-2 (Joe)

- CCS requested additional information on RIM CE.
 - TWG advised that the program is in the very early stages and very little official info available.
 - Don Arnosti can provide data information on the conversion of agriculture land.
- Question raised about how many acres would be coming out of the Conservation Reserve Program (CRP) over time. Tim Gieseke can provide an NRCS contact.
- CCS requested additional information on the cost of conservation easements over the past 5 to 10 years.
 - TWG suggested Kevin Lines within Minnesota Board of Water and Soil Resources as a potential contact.
- Clarence Lehman suggested that while the Peatlands/wetlands option may not be quantified, there is a need to change the language to recognize that this is a significant sequestration resource. For example:
 - Significant resources for Minnesota (1/10th of Minnesota is peatland/wetland).
 - Peatland sequestration opportunities will not be saturated for a long period of time (5,000 – 10,000 years)
 - New peatlands are still being created.
 - Peer-reviewed paper will be published next month with more specifics on role of peatlands in carbon cycle.
 - Damage to peatlands creates two problems, loss of sequestration and release of stored CO₂.

AFW -3 (Joe)

- TWG suggested that the term ‘carbon content’ in relation to biofuels be expanded upon to allow members of the public to better understand the meaning.
 - TWG suggested carbon footprint be used rather than “content” since content references entire life-cycle from well to exhaust.
- TWG identified the need to use an electricity coefficient rather than coal as the alternative fuel source being offset.
 - Could use national average but Minnesota specific information would be better.
 - TWG highlighted that ethanol production is largely coal thermal but most recent production has been natural gas based (wet mills and most old dry mills are coal but moving towards gas).
- TWG noted a preference to focus on energy content rather than volume (gallons) as this is a more useful metric.
- CCS highlighted that the coefficients and emission factors for ethanol calculations will be obtained directly from GREET methodology and the projections are based on Minnesota Inventory and Forecast assumptions and calculations, and the incorporation of additional new measures. The approach for diesel is similar but the sources for emission factors are different.
- Amount of carbon off-set will be looked at for both starch-based and cellulosic ethanol.
- CCS requested information from TWG members specifically on:
 - Best feedstocks available in Minnesota.
 - For example soy versus canola (which provides more oil per acre).
 - Availability of animal oils.
 - Are there any available studies on the availability of in-state vegetable oils?
 - Types of Minnesota crops that can be used for feedstocks?

AFW-4 (Joe)

- TWG recommended that for the policy design, a BTU goal would be better than a percentage level.
 - CCS agreed to liaise with Policy Option volunteers on refinement of this option.
 - Clarence Lehman would like to be included on this sub-group email list.
- Quantification of biomass utilization.
 - CCS also agreed to discuss the appropriateness of offsetting coal versus gas with this policy option.
- The TWG discussed the definition of the Energy Crop production goal.
 - This component is **in addition** to any other existing program.
 - CCS agreed that there is a need to note the potential overlap with crop production and existing programs and offsets calculated for those.

AFW-5 (Jen)

- CCS sought clarification on the reforestation component of this option.
 - It was confirmed that this option relates to planting trees where trees previously existed but has since been converted to other land use (e.g. agriculture). This is reforestation, not afforestation.

- Quantification will be done for four of the five aspects of this option, Forest Health will not be quantified.
- Urban Forestry was defined as having two types of GHG benefits.
 - Carbon sequestration
 - Offset from reduced fuel from shade –heating cooling physical properties.
- CCS requested information on the acres in Minnesota that is at risk to wildfire. Dave Zumeta can provide some sources.
- CCS identified that the most practical way of calculating the costs and GHG benefits of restocking of under-stocked lands is to assuming harvesting and restocking using the correct stocking practices.
 - TWG identified that while some land would be appropriate for this methodology a large proportion would require a different methodology as it is currently covered with shrub/brush. Material could not be harvested in the same sense as a forest (e.g. Land preparation may not necessarily be harvesting). These ecosystems may be “healthy” but are not maximizing carbon sequestration benefits.
 - CCS suggested two separate categories.
 - Under-stocked forest.
 - Brushlands.
 - Dave Zumeta could have inventory information regarding this.
 - CCS to discuss offline.
 - Clarence Turner at DNR would also be a good contact.

AFW-6 (Jen)

- No net loss goal by 2012 has been quantified. CCS identified the need to change to 2015 from 2012.
- This goal will be realized in two ways:
 - a) Through avoided clearing
 - b) And through additional cumulative sequestration on protected areas.
 - CCS assumed that 53% of vegetation would be lost following clearing – included above and below ground.
 - 35% of soil carbon would be lost on land conversion.
 - Steve Roe identified the need to provide estimates without soil carbon because the Forestry Service’s preferences and the inherent uncertainty associated with calculating soil carbon.
- It was noted that old growth (+200 yrs.) no longer sequesters much carbon however the amount of old growth left in state is miniscule but provides many ancillary benefits. It will not be a factor in quantification.
- CCS requested information regarding the cost of implementing this policy. In particular, the historical easements costs. Latest easement:
 - 51,237 acres \$12 million which is 10 times larger than previous largest

AFW-7 (Steve)

- 3 goals (See Tables 7-2 and 7-3 in straw proposal for programs):
 - a) source reduction
 - b) increasing recycling
 - c) increase composting

- Currently missing information on the composition of residual waste output once processed through the three goals above.
- EPA's Waste Reduction scenarios will provide basis for quantification.
- BAU adjusted for policy benefits will yield amount of waste saved from landfills.
- Cost component is largely drawn from previous assessment in other states, MN specific information would be helpful.
- The avoidance of producing material (eg packaging) is included in the carbon benefits but is not included in the cost estimates.
 - This will be noted as an additional cost savings by manufacturing and upstream sectors and reduction in embodied energy.
- Some members of the TWG thought that the goals timing seemed inappropriately long and the targets didn't go far enough.
 - This discussion will continue offline but it was noted that there were a number of factors beyond state control and there is a real need to be aggressive but realistic given the expectation of continued growth in waste outputs.
 - PCA Strategic Planning goals, on which these are based were essentially guesses.

AFW-8 (Steve)

- CCS noted that this is not as developed as AFW-7 (mainly because builds on AFW-7).
- Organics recovery and waste-to-energy.
- Landfill methane.
- Waste to energy.
 - This component requires the most input from TWG members.

Other Inputs

- Shalini will have replacement for the next few weeks. She also expressed concerns on AFW-8 second goal through email earlier.
- Dave Zumeta requested that Jen call him.

Next steps and agreements:

1. The next TWG meeting will be held on **November 29 from 1:00 p.m. to 3:00 p.m**
2. CCS will contact Policy Option volunteers to progress policy quantification. Their contact details are:
 - a. Joe Pryor (AFW 1, 2, 3 and 4): joseph.pryor@pechan.com
 - b. Jen Jenkins (AFW 5 and 6): j.jenkins@carbodynamicsllc.com
 - c. Steve Roe (AFW 7 and 8): steve.roe@pechan.com
3. MCCAG is meeting on November 9.

Next Steps for the AFW TWG

- Review comments from MCCAG meeting (November 9)
- Finalize quantification of policy options at next meeting
- Provide input on the remaining sections of the policy options document:

- Implementation Mechanism section.
- Other areas like Feasibility and Additional Benefits (externalities).