



**MEETING SUMMARY**  
**IOWA CLIMATE CHANGE ADVISORY COUNCIL**  
**Agriculture, Forestry and Waste Subcommittee**  
Call #7, May 1, 2008

**Attendance:**

*Subcommittee members:* Richard Cruse, Duane Sand, Dawn Snyder, Dean Lemke.

*Center for Climate Strategies:* Steve Roe, Joe Pryor, Erin Quigley, Brad Strode, Peter Kuch.

*Iowa Department of Natural Resources:* Marnie Stein

*Public Attendees:* None

**Background Documents:** ([http://www.iaclimatechange.us/Agriculture\\_Forestry.cfm](http://www.iaclimatechange.us/Agriculture_Forestry.cfm))

1. Meeting Notice and Agenda
2. PowerPoint for Teleconference
3. Summary of Call #6
4. Policy Options Document

**Discussion and Key Items:**

1. Call to order and roll call
2. Review and approve prior call summary
3. Review Results from April 11 ICCAC Meeting
4. Discuss Development of Policy Options
5. Next Steps for AFW subcommittee
6. Public Input and Announcements
7. Agenda, Time and Date for Next Meetings

*Call to order and roll call – CCS Introductions*

Peter Kuch, a CCS affiliate with expertise in the Agriculture economics field offered observations on the IA AFW POD. His observations are outlined below.

*AFW-1 Nutrient Management*

There is already an interest in efficient use of fertilizer. Economic incentives are currently present (in the form of high input prices) and the emphasis of this policy should be on providing the tools to achieve the efficiency gains. The state could encourage using

manure over manufactured fertilizer and manure testing, drying and treatment to aid in distribution.

Winter Cover crops could be considered in seasonably flooded areas. Nutrient management plans are currently required for livestock but are not required for other farming activities. Another aspect to consider could be the best vehicle to bring in outside expertise that may not be available otherwise (e.g. NRCS). Additionally, Insurance incentives could be used as a vehicle for under-application of nitrogen (e.g. Agriculture Watershed Institute in Illinois – contact Steve Johns).

#### AFW-2 Wetlands Protection and Drainage Management

The main issue is how to encourage constructed wetland to denitrify drainage water. Government mandates may be the best option. Subcommittee members noted that the Conservation Reserve Program (CRP) is currently attempting to address this with 30 year easements. All agreed that significantly more wetlands will not be formed without legislation or heavy subsidization. It was identified that there may be insufficient funding available to meet implementation goals.

The subcommittee noted that the market is driven by positive economics at the farm level, primarily in terms of water quality but also regarding GHG benefits. Drainage mains need to be upsized to meet the requirements of agriculture practices today. Another key to implementation is the education of farmers about the key benefits of improved drainage and management.

A side point from the subcommittee was that there is often an incorrect assumption that CRP is idle land waiting for better use. However, it is noted that the CRP is a public investment in ecosystem services and that this land is currently serving a function and additional functions such as the removal of biomass from the CRP will not be straightforward or perhaps the optimal outcome.

AFW-3 Expanded Use of Agriculture and Forestry Biomass Feedstocks for Electricity, Heat or Steam Production. It is difficult to separate supply from demand on this issue. Long term contracts with biomass owners are required with the need to offer long-term prices. Additionally, incentives are required for electricity generated from methane or biomass.

Subcommittee note: This week the Utilities Board approved a coal plant in IA contingent on burning 10% biomass. Additionally, it is unlikely that energy crops will be grown on high quality agriculture crop land and it is more likely to be marginal land or pasture land.

#### AFW-4 Encourage Large-Scale Manure Management/Methane Capture & Utilization

Is it cheaper to move methane, manure or electricity? Perhaps on-farm methane generation or electricity generation and sell the surplus onto grid is the best option.

Additional opportunities for manure digestion slurry: Growing algae in slurry which can be used for biodiesel (Peter Kuch to provide more information on this). Another option is to grow red worms that can be fed to poultry as a protein supplement.

#### AFW-5 Land Management to Promote Sequestration Benefits

No till incentives are strong because of the costs involved with the number of passes; this type of action could already be saturated. The promotion of rotational grazing is another difficult question. Experimentation with CCX buying credits for carbon sequestration benefits could be one option for incentivizing action. This could be the incentive to promote different sequestration benefits (e.g. shifting to no-till). An additional thought is that composted manure could enhance soil carbon and soil till.

#### AFW-6 Cellulosic Fuel Incentives

This option will likely require some industrial scale processors that demand biomass. It may be difficult for IA to act alone here. This could be an opportunity for the digester slurry algae discussed earlier. CCS noted that demand side issues are usually taken up by the TLU subcommittee.

#### AFW-7 Improved On-Farm Energy Use and Efficiency

Incentives could already be available in the form of cost reduction. The subcommittee needs to consider what barriers to prevent further gains? Are there steps being taken to increase efficiencies?

#### AFW-8 Front End Waste Management Technologies

This option may need to be driven by regulatory requirements or through economic incentives. Biodegradable plastic based on corn starch could be an upstream solution. However, this may be difficult given current corn prices and demand.

#### AFW-9 Landfill Methane Energy Programs

The subcommittee could investigate methane uses other than electricity. There may be a need to co-locate facilities near landfills.

#### *Review and approve prior call summary*

No Comments or Revisions. Prior call summary approved.

#### *Review Results from April 11 ICCAC Meeting*

- All straw proposals accepted
- ICCAC requested that all Subcommittees (particularly AFW) review the aggressiveness of goals.

*Discuss Development of Policy Options*

**CCS Technical Lead**

Jackson Schreiber ([jackson.schreiber@pechan.com](mailto:jackson.schreiber@pechan.com)): AFW-1, AFW-7.

Erin Quigley ([erin.quigley@carbodynamicsllc.com](mailto:erin.quigley@carbodynamicsllc.com)): AFW-5 (forestry components).

Joseph Pryor ([joseph.pryor@pechan.com](mailto:joseph.pryor@pechan.com)): AFW-2, AFW-3, AFW-4, and AFW-5 (Agriculture components).

Rachel Anderson ([rachel.anderson@pechan.com](mailto:rachel.anderson@pechan.com)): AFW-6.

Brad Strode ([brad.strode@pechan.com](mailto:brad.strode@pechan.com)): AFW-8 and AFW-9.

For all of the quantification of all options, implementation mechanisms are key, particularly for determining the costs involved in implementation (e.g. incentives versus regulatory etc).

**1. AFW 1 – Nutrient Management**

- a. Rick Cruse would like to see the county level fertilizer sales data from the University of Kentucky used in the IA Inventory and Forecast. CCS will forward the data extracted from the Inventory and Forecast.
- b. Subcommittee emphasized the need for the efficiency metric to include crop output.
- c. Need to make sure it is consistent with I&F and if not need to adjust the I&F appropriately.
- d. Important consideration also needs to be given to reduction in crop / soil carbon.
- e. A recent study from the National Soil Turf Laboratory in Iowa showed that nitrogen applied and N<sub>2</sub>O emissions are not directly related.
- f. Fuel reductions in terms of application should be included. But it is unlikely to result in a lot of gains.
- g. Reductions in manufacturing emissions (e.g embedded energy) should be included in this policy option.
- h. There has not been sufficient study on the issue of seasonably flooded areas and their GHG footprint. .
- i. Nutrient distribution will need more input from the subcommittee in order to proceed with quantification.

**2. AFW 2 – Wetlands Protection and Drainage Management**

- a. Recent research can provide some insights, into the potential GHG benefits of wetlands, but more information is required.
- b. Mass load reductions from this option need to be considered.
- c. There may be sufficient information to move forward with this option in a quantified fashion but more investigation of recent publications on the subject is required.
- d. The subcommittee noted the need for confidence intervals in the analysis and suggested that language be included about the uncertainty of some information and/or quantification.

- e. Some direction may be available in terms of the magnitude of reductions and costs.
- 3. AFW 3 - Expanded Use of Agriculture and Forestry Biomass Feedstocks for Electricity, Heat or Steam Production**
- a. This option was not discussed but will be discussed further offline.
- 4. AFW 4 – Encourage Large Scale Manure Management/Methane Capture & Utilization**
- a. This option was not discussed but will be discussed further offline.
- 5. AFW 5 – Land Management to Promote Sequestration Benefits**
- a. Reforestation and Afforestation.
    - i. There is no change in soil carbon as a result of reforestation but there is a slight increase/decrease from afforestation. The subcommittee was asked if changes to soil carbon should be included.
    - ii. The I&F indicates soil carbon sequestration in Iowa but these estimates are uncertain according to the US Forestry Service.
    - iii. Suggested that the analysis remain consistent with draft I&F where soil carbon is not included unless subcommittee members believe otherwise.
    - iv. CCS will be seeking input from the subcommittee on the costs of implementation.
  - b. Urban Forestry
    - i. Need to convert canopy cover to number of trees.
    - ii. Data sources for costs such as data tree planting will be required.
    - iii. The goal could specify where the trees are located either explicitly or as an implicit assumption, because costs are sensitive to location.
    - iv. Sensitivity also surrounds the maintenance costs of the urban trees. This is another area where subcommittee input would be helpful.
  - c. Other components were not discussed but will be discussed further offline.
- 6. AFW 6 – Cellulosic Fuel Incentives**
- a. This option was not discussed but will be discussed further offline.
- 7. AFW 7 – Improved On-Farm Energy Use and Efficiency**
- a. This option was not discussed but will be discussed further offline.
- 8. AFW 8 – Front End Waste Management Technologies**
- a. Assess GHG benefits of option by using Waste Reduction Model (WARM). This analysis will consider both the BAU scenario and the policy scenario (based on goals assumption provided by subcommittee). WARM provides GHG life cycle emissions (i.e. includes production emissions).

- b. Cost is the net cost of additional tipping fee (could be cost savings) and also considers additional collection and maintenance costs.
- c. Help from the subcommittee will be required on cost effectiveness. E.g. IA specific tipping fee, typical fee for recycling facility, compost cost. Information is also needed on cost of education to public and/or cost of enforcement.
- d. Extended producer responsibility goal seems unquantifiable. If subcommittee members know of additional information please forward this information to CCS.
- e. Dawn Snyder will provide follow up information on some of these questions.

### **9. AFW 9 - Landfill Methane Energy Programs**

- a. This option needs a quantifiable/numerical goal.
- b. The GHG benefits of this option are two fold – reduction in methane, and displacement of fossil fuels.
- c. Case study cost information will be used if available but otherwise quantification will use the Landfill Gas (LFG) cost model.
- d. Use of methane is important – e.g. steam versus electricity or others. Could use assumptions from subcommittee or look at average usage across U.S. (this has been done in other states). The end-use mix helps determine costs of implementation.

#### *Next Steps for AFW subcommittee*

We will continue to work on the options up until the next ICCAC meeting. CCS will contact subcommittee members off line to seek input on information sources and assumptions to be used in the quantification process.

#### *Public Input and Announcements*

None

#### *Agenda, Time and Date for Next Meetings*

The next Subcommittee Meeting (call #8) will be on May 15, 2008. Subcommittee Meeting #9 will be May 27, 2008 (changed from May 29). The next ICCAC meeting will be held on June 12, 2008. CCS will email the meeting dates for the remaining AFW subcommittee meetings, proposed dates are:

- IA AFW Call #8 Thursday May 15, 9:00-10:30 CT
- IA AFW Call #9 **Tuesday** May 27, 9:00-10:30 CT
- IA AFW Call #10 Thursday June 26, 9:00-10:30 CT
- IA AFW Call #11 Thursday July 24, 9:00-10:30 CT
- IA AFW Call #12 Thursday August 14, 9:00-10:30 CT
- IA AFW Call #13 Thursday September 18, 9:00-10:30 CT
- IA AFW Call #14 Thursday October 16, 9:00-10:30 CT

Thank you to everyone who participated on the call and contributed to the discussion of these issues.