



**MEETING SUMMARY**  
**SOUTH CAROLINA CLIMATE, ENERGY AND COMMERCE ADVISORY**  
**COMMITTEE**  
**Agriculture, Forestry, and Waste Management Technical Work Group**  
**(AFW TWG)**

Call #9, January 22, 2008, 2:00–4:00 PM

**Attendance:**

1. Technical Work Group Members:
  - John Bonitz – Agriculture Energy Coordinator, Southern Alliance for Clean Energy
  - Stephen Henry – Natural Resource Conservation Center
  - Joe James – CEO, Corporation for Economic Opportunity
  - Bob King – Deputy Commissioner, South Carolina Environmental Council
  - Bob Perry – Wildlife Biologist, Environmental Programs Section, DNR
  - Mark L. Robertson – Executive Director, The Nature Conservancy of South Carolina
  - Guy Sabin – Environmental Management Section Chief, South Carolina Forestry Commission
  - Bob Scott – President, South Carolina Forestry Association
  - Daniel Tufford – University of South Carolina, Dept. of Biological Sciences
  - Johnny Williamson – CEO, South Carolina Soya, LLC
2. Center for Climate Strategies (CCS) Staff:
  - Gloria Flora – Co-facilitator
  - Brad Strode – Technical support
  - Rachel Anderson – Technical support
  - Joseph Pryor – Technical Support
3. South Carolina Department of Health and Environmental Control (SCDHEC):
  - Michael Juras – SCDHEC; Agency Liaison
4. Public Attendees:
5. Technical Work Group Members not attending:
  - Larry Boyleston – Director, Business and Government Relations, South Carolina Dept. of Agriculture
  - Art Braswell – Division Director, Mining and Solid Waste Management, South Carolina Department of Health and Environmental Control
  - Cary Chamblee – Legislative and Government Consultant for South Carolina Wildlife Federation and Sierra Club
  - Scott Fennell – Carolina Waste
  - Chris Fisher – Fisher Recycling

- Erika Hartwig – South Carolina Energy Office
- Edwin Lesley – President, Business Development Corporation of South Carolina
- Russell Ott – South Carolina Farm Bureau
- Carlton Owen – President/CEO, US Endowment for Forestry and Communities
- Danny Verdin – SC Senate

**Background documents:**

(all posted at [http://www.scclimatechange.us/Agriculture\\_Forestry.cfm](http://www.scclimatechange.us/Agriculture_Forestry.cfm))

1. Meeting Notice and Agenda
2. Summary of Call #8
3. PowerPoint for Teleconference.
4. AFW Draft Priority Policy Options for Analysis

**CCS contact list:**

Please direct off-line comments on specific options to the CCS staff member working on that option. The list below provides e-mail contact information and the options each CCS staff member is working on. If one has a question regarding the CCS process, please contact Steve Roe ([steve.roe@pechan.com](mailto:steve.roe@pechan.com)) or Gloria Flora ([gflora@s-o-solutions.org](mailto:gflora@s-o-solutions.org)).

- Brad Strobe ([brad.strobe@pechan.com](mailto:brad.strobe@pechan.com)) is the contact person for AFW-1, 3, 6a, 8, 9, and 10.
- Joe Pryor ([joseph.pryor@pechan.com](mailto:joseph.pryor@pechan.com)) is the contact person for AFW-2, 5, and 7a.
- Katie Bickel ([kbickel@gmail.com](mailto:kbickel@gmail.com)) is the contact person for AFW-6b and 7b.
- Rachel Anderson ([Rachel.anderson@pechan.com](mailto:Rachel.anderson@pechan.com)) is the contact person for AFW-4.

Please submit text updates for all options (Implementation Mechanisms, Related Policies and Programs in Place, Key Uncertainties, Additional Benefits and Costs, and Feasibility Issues.

**Discussion items and key issues:**

***Introductions and Review***

1. CCS called the teleconference meeting to order, completed the roll call and outlined the agenda.
2. CCS reviewed the draft summary of Call #8. No revisions or comments were offered by the TWG .
3. CCS announced that the TWG has reached Step 5 of the Stepwise Planning Process: Quantify GHG Reductions and costs/savings. This call will detail the work needed from the TWG to complete this step.
4. CCS also noted that while Step 5 is underway, TWG members should begin considering text that will work towards completing Step 6, “Evaluate Externalities, Feasibility Issues.” Text for the following sections should be included in the Policy Options Document for the document’s next iteration: Key Uncertainties, Additional Benefits and Costs, and Feasibility Issues.

***Discussion of CECAC Input and Policy Options Document***

1. General:
  - a. Net Present Value is defined as the cumulative cost of an option in 2005 dollars.

- b. For all options (in not done already) CCS requests that **text be submitted from the TWG for the Implementation Mechanisms and Related Policies and Programs in Place sections**. Please note that information provided in these sections is extremely crucial to the development of methods for the quantification of costs and benefits for each policy option.
  - c. A TWG member suggested changing the sequence of policy options, placing AFW 7 before AFW 6. This will be considered in the final drafting of the report.
2. AFW-1: *On-Farm Energy Efficiency*
- a. The baseline year by which the goals for this option are set is 2007. CCS stated that data is not yet available for 2007 for either diesel use or electricity expenditures (the metric used to estimate electricity consumption). Therefore, the TWG must decide whether to use the most recent year for which data is available as the baseline or project the fuel and electricity use to 2007, using this projection as the baseline.
  - b. CCS reviewed quantification mechanisms and data sources. No comments or changes to the methodology were offered by the TWG.
  - c. CCS requested information necessary to estimate the cost effectiveness of this option from the TWG. The TWG suggested that University Agriculture Extensions, NRCS energy audits, the University of Wisconsin, and the National Agricultural Statistics Service (NASS) are good places where data may be found. Specifically the cost of new equipment may be available from NASS, the cost of education and energy-efficiency marketing programs may be available through agriculture extensions. Additionally, there was a study from the NRCS in Maryland, which should not be significantly different from South Carolina.
  - d. It was noted that there are two methods for energy audits for farms. One is an labor-intensive on-farm energy audit, the other involves a professional engineer reviewing a data checklist and remotely assisting the farmer in completing the information. Costs would be very different depending on method recommended.
3. AFW-2: *On-Farm Waste Energy Recovery*
- a. CCS suggested that some of the text in the “Other” sub-section could be moved to the Implementation Mechanisms section. These notes could be expanded to explain the types of incentives and/or management methods that could be helpful in developing on-farm waste energy recovery programs.
  - b. CCS stated that real-life costs of on-farm anaerobic digestion facilities are difficult to come by as digesters are an emerging technology. A TWG member said that a recently published NRCS bulletin could help develop a cost estimate for AD. CCS is currently using – and will continue to use – this resource in its development of the cost effectiveness estimates for this option.
  - c. CCS said that the quantification methods relating to the portion of this option dealing with energy recovery on poultry farms are still in development.
  - d. A TWG member raised a caution about overlap with AFW 5. This TWG member suggested that the scope of this option be constricted to on-farm waste energy recovery applications (specifically, thermochemical conversion) while AFW 5 would focus on utility scale energy production from agricultural feedstocks
  - e. A discussion ensued regarding the legitimacy of the 75% collection efficiency assumption. This is based on assumptions used in previous states, and represents

the upper bound of methane collection from animal manure. The TWG approved the maximum collection efficiency of 75% for the purposes of this analysis.

4. AFW-3: *Expanded Use of Local Agricultural Products*

- a. CCS moved the text in the “Other” sub-section to the Implementation Mechanisms section. These notes should be expanded to explain the types of incentives that could be helpful in developing markets for local agricultural products.
- b. CCS completed a review of data sources and quantification methods that will be used to complete the quantitative analysis of this policy option. CCS noted that some more information might be needed to develop cost effectiveness estimates.
- c. A TWG member asked whether documents sent by e-mail were received and considered for the development of this option. CCS responded by stating that while these documents were received, they did not seem to provide specific information, rather general information on programs that promote increased consumption of local agricultural products.
- d. Another TWG member suggested that CCS investigate the “multiplier effect,” the application of which would capture the full effect of this option on the economy of South Carolina
- e. A TWG member noted that Iogen, a Canadian company, was in town reviewing options for locating a state-of-the-art cellulosic ethanol production plant in the area.

5. AFW-4: *In-State Liquid Biofuels Production*

- a. CCS noted that this option is similar to TLU options 6 and 12. The AFW option considers reductions above and beyond these options by focusing on the carbon benefit realized from the development of cellulosic ethanol from in-state feedstocks.
- b. CCS explained data sources and quantification methods for this option. Draft quantification has been completed. TWG members should review this option and send any comments to a CCS facilitator.
- c. CCS conducted a sensitivity analysis – as requested by the CECAC – to determine what the GHG benefit might be if the upper bound of in-state feedstock availability were used. CCS posed a question to the TWG regarding the percentage of corn that could potentially be used for fuel. It was decided that a maximum of 10% of corn produced in the state could be diverted to fuel without a strong adverse impact on South Carolina’s food supply and livestock feeding operations
- d. CCS is conducting quantitative assessments which include feedstocks such as cull sweet potatoes, sorghum and peanuts. Funded by a grant, 800 acres are being tested for commercial production of sweet potatoes for fuel.
- e. TWG member suggested that a more deliberate process might be prudent when determining the amount of feedstock allocated to ethanol production. CCS replied that it is important to understand the bounds of what can be achieved in South Carolina. By analyzing a scenario where a great deal of the agricultural products produced in SC are converted to fuel, the TWG is not necessarily suggesting that this is the recommended scenario. The potential impacts of increased ethanol production on the food supply are strong concerns of this TWG.
- f. It was noted that SC is already corn deficit, with poultry alone consuming 150% of in-state production.

- g. A TWG member noted an innovative crop with 4-5 times the fiber as switchgrass and suggested the policy design consider recommending testing commercial plantings of new feedstocks like this to help avoid food crops being diverted to fuel production.
  - h. TWG input suggested indicating a preference for cellulosic ethanol, emphasizing new technologies, as well as processing and storing innovations to support year-round production.
  - i. CCS will be sending an email to the TWG detailing feedstock assumptions that are to be made, including what percentage of various food sources can be used for fuel feedstock.
6. AFW-5: In the interest of allowing sufficient time to discuss the forestry options, discussion of this option was passed over.
  7. AFW-6a: In the interest of allowing sufficient time to discuss the forestry options, discussion of this option was passed over.
  8. AFW-6b:
    - a. CCS reviewed data sources and quantification methods for this option.
    - b. A TWG raised a question concerning the fact that only one type of forest (loblolly pine) was considered for the quantification. There are considerable interests in the role of hardwoods in SC CCS responded by stating that data availability is somewhat restricted to loblolly stands due to the commercial interest in this tree. Another TWG replied that “forest management” is strongly skewed towards pine forests, so therefore analysis will as well.
    - c. A TWG member stated that the management mentioned in this option seems focused on upland forests, rather than bottom-land sites. However, minimal managed forests lands are in hardwoods except in plantations. Conservation issues (AFW-7) may apply more equally between bottom-land and upland forests.
    - d. More information may be available through a study that Duke University and The Nature Conservancy are conducting on hardwood forests management potential.
    - e. In quantifying acreage of improved management it seems essential to know the percentage of landowners who have participated in improvement programs. Look at the Woodlands Owners Survey done in conjunction with the FIA.
    - f. Given the interest in feedstocks for biofuels, the TWG feels that consideration should be given to the interplay between these two types of lands. As land shifts out of agriculture, it is sometimes returned to forestland through natural regeneration, creating more biomass potentially for energy production.
    - g. Afforestation, where planting would occur on abandoned ag lands may conflict with a desire by landowners to start actively managing that land to grow feedstocks for bio-fuels and energy. Trade-offs between generating more carbon sinks vs. market forces for feedstocks should be discussed (outline form, not a full-blown analysis).
    - h. Related to g., it was noted that the mean age of agriculture operators was increasing suggesting that fewer people are entering farming, thus potentially supporting afforestation of ag lands.
  9. AFW-7a: In the interest of allowing sufficient time to discuss the forestry options, discussion of this option was passed over.
  10. AFW-7b:

- a. A TWG member made a recommendation for a state tax credit as an Implementation Mechanism, as the current federal tax credit reduces taxes paid to the state, and therefore does not help SC.
- b. A TWG member suggested increasing the cap for credits to \$350 to \$500/acre. Current credits are capped at \$250/acre.
- c. Many TWG members had problems with current goal. They stated that there has been a gradual increase in forest lands since 2000 and setting a goal to increase them more may not be realistic nor desirable. Given the forecast for strong population growth, increasing forest lands will force growth to ag lands. (CCS mentioned that TLU has an option considering smart growth).
- d. One suggestion from the TWG was to combine the agricultural and forestry lands into one goal. While this may be a viable option, it may also be backsliding as these options were once one. However, the TWG may want to consider looking at the combined acreage in total and setting protection goals. Additionally, the quantification of this goal requires that an assumption regarding the total lands from each cover type be known, as agricultural and forestry lands have different carbon sequestration potentials and different costs.
- e. Another proposal suggested that a possible goal could be no net loss in agriculture and forestry lands, with a provision that forest lands will increase over time.
- f. **The forestry group will come together and decide a final goal for this option by February 1.**

### *Inventory and Forecast*

1. CCS stated that while the AFW TWG has had an ample opportunity to suggest changes to the Draft Inventory and Forecast, the I&F is still up for discussion and review. However, CCS will not go through a thorough review of the I&F at this time.

### *Next Steps*

1. Input from the public was solicited. There were no members of the public in attendance.
2. **TWG members should work quickly to supply additional text to CCS no later than February 1.**

### *Agreements*

1. The next meeting of the AFW TWG will be held via teleconference on **March 6, 2008 (2:00 to 4:00 p.m.)**
2. The Call Summary for this meeting will include a current list of priorities and volunteer work group members to date. (See table below.)

<b>Revised Option #</b>	<b>Draft Policy Option Name</b>	<b>Straw Proposal Volunteers</b>
AFW-1	On-Farm Energy Efficiency	<i>Stephen Henry, John Bonitz, Russell Ott</i>
AFW-2	On-Farm Waste Energy Recovery	Stephen Henry, John Bonitz, Russell Ott
AFW-3	Expanded Use of Local Agricultural Products	Dan Tufford, Russell Ott

<b>Revised Option #</b>	<b>Draft Policy Option Name</b>	<b>Straw Proposal Volunteers</b>
AFW-4	In-State Liquid Biofuels Production	<i>Erika Hartwig, John Bonitz, Johnny Williamson</i>
AFW-5	Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production	Erika Hartwig, Bob Giangiorgi, John Bonitz, <b>Carlton Owen</b>
AFW-6	Terrestrial Carbon Sequestration	Bob Perry (f), Guy Sabin (f), John Bonitz (a), Erica Westbrook (a)
AFW-7	Conservation and Restoration of Forest and Agriculture Lands for Enhanced Carbon Sequestration	Guy Sabin, <b>Bob Perry</b> , Dan Tufford, Bob Scott
AFW-8	Advanced Recycling and Composting	<b>Bob Giangiorgi</b> , Scott Fennell
AFW-9	Waste-to-Energy Reclamation	Edwin Lesley, Scott Fennell
AFW-10	Water and Wastewater Energy Efficiency Improvements	<b>Venkat Lakshmi</b> , Dan Tufford