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**Forestry, Agriculture, and Waste Management Technical Work Group
Summary List of Draft Priority Policy Options for Analysis**

Revised Option #	Draft Policy Option Name	Straw Proposal Volunteers
FAW-1	Forest Management Strategies for Carbon Sequestration	
FAW-2	Expanded Use of New, Used, & Recycled Wood Products for Building Materials	
FAW-3	Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production	
FAW-4	In-State Liquid Biofuels Production	
FAW-5	Advanced Waste Reduction and Recycling	

Sample Draft Policy Option Template

FAW-1 Forest Management for Carbon Sequestration

Policy Description

The “Policy Description” is a part of the Straw Proposal. CCS will provide sample text for volunteer sub-groups to work from. This section should provide a **brief** summary of the proposed policy option.

CCS default text:

Forest management activities that promote forest productivity and increase the rate of carbon dioxide sequestration in forest biomass and soils and in harvested wood products. Practices may include clearing and conversion of forest cover type to achieve higher sequestration levels, increased stocking of poorly stocked lands, age extension of managed stands, thinning and density management, fertilization and waste recycling, expansion of short-rotation woody crops (for fiber and energy), expanded use of genetically preferred species, modified biomass removal practices, fire management and risk reduction, and pest and disease management. Programs that reduce the potential for and severity of wildfires also reduce GHG emissions by lowering the forest carbon lost during the fire in addition to the subsequent losses of carbon sequestration potential in the area impacted by wildfire. Prescribed fires may increase carbon in soil. Mechanical removal of biomass may provide sources of biomass that can be used for conversion to energy. Adoption of water conservation, improved harvesting technology such as improved equipment, and other GHG-reducing agricultural practices that can be applied to silviculture.

Establish forests on land that has not historically been forested (e.g., agricultural land; “afforestation”). Promote forest cover and associated carbon stocks by regenerating or establishing forests in areas with little or no present forest cover (“reforestation”). In addition, implement practices such as soil preparation, erosion control, and stand stocking to ensure conditions that support forest growth.

Policy Design

The “Policy Design” is the other part of the Straw Proposal. The “Goals” represent the **numerical** targets that the TWG feels are attainable by the end of the policy period (2020), and will provide sufficient carbon benefits. The “Timing” bullet is a place for the TWG sub-group to insert an incremental target (2012), or multiple incremental targets. The “Parties Involved” bullet includes a list of organizations (specific or otherwise) that could be affected by this proposed option, or are parties to the implementation of the option. *Please see example below a Policy Design from the Michigan Process:*

Goals:

- Increase permanent forestland cover (including improved stocking of under-stocked stands) across the state on 1 million acres through afforestation and reforestation by 2025.

- Implement wildfire reduction Community Wide Protection Plans for 10-12 identified communities at risk by 2025.

Timing: See above

Parties Involved: Private landowners; Michigan Forestry Association; Michigan Departments of Agriculture, Conservation Districts; environmental/sustainability interests; Forest Industries; People and Land (a Kellogg Foundation funded organization which tracks progress on the 2003 Michigan Land Use Leadership Conference Report recommendations); The Global Observatory for Ecosystem Services; Michigan United Conservation Club; The Nature Conservancy, USFS State and Private Forests; Michigan State University Extension; Farm Bureau; Forest Industry; Carbon Traders.

Other: Note that plantations of native trees should be encouraged – not fast-growing trees from Southeast Asia.

Sample Draft Policy Option Template

FAW-2 Expanded Use of New, Used, & Recycled Wood Products for Building Materials

Policy Description

The “Policy Description” is a part of the Straw Proposal. CCS will provide sample text for volunteer sub-groups to work from. This section should provide a **brief** summary of the proposed policy option.

CCS default text: Increase the amount of renewable wood products used for residential and commercial building. Using wood products in place of other building materials can increase carbon sequestration in wood products and displace GHG emissions associated with processing high-energy input materials such as steel, plastic, and concrete. Reduction potential is enhanced by promoting the use of locally grown wood because it has lower transport-associated emissions. Promote utilization of recycled or reusable wood products to reduce wood waste. Encourage certification programs, such as Leadership in Energy and Environmental Design (LEED) to put wood on an equal footing with other materials.

Policy Design

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Goals: The CCAC recommends that Montana adopt programs to expand use of wood products by 5% over current baseline rates of use.

Timing: Increase usage by 2% by 2010 and 5% by 2020, above current trends.

Parties Involved: Building material suppliers, wood product industries, recycled building materials sellers, and others, UM School of Forestry and Conservation, all state agencies lead through example.

Other: Not applicable.

Sample Draft Policy Option Template

FAW-3 Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production

Policy Description

The “Policy Description” is a part of the Straw Proposal. CCS will provide sample text for volunteer sub-groups to work from. This section should provide a **brief** summary of the proposed policy option.

CCS default text: Increase the amount of biomass available from agriculture, forestry, and waste for generating electricity and displacing the use of fossil energy sources. Improve treatment and cleaning of waste materials from paper mills, which can then be reused to manufacture additional wood products. Ensure that sawmill by-products are recycled or beneficially used for energy. Use more efficient logging methods to fully utilize harvested trees, which will minimize carbon losses from wood damaged during harvesting and maximize the potential for carbon sequestration in harvested wood products. Process the logging remains efficiently.

Policy Design

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Goals:

- By 2020, increase production of electricity, steam, and heat generation to utilize 25% of the available wood and agriculture residue biomass.

Timing:

- By 2010, increase biomass electricity, steam, and heat generation to utilize an additional 10% of available resource.
- By 2012, utilize 14% of practical and available resource.
- By 2020, utilize 25% of practical and available resource.

Coverage of Parties: SCDA, SCFC, University of South Carolina, CU and extension agencies, South Carolina State University, SCEO, SC DHEC Air Quality Division, South Carolina

Biomass Council, South Carolina Forestry Association and SCFC, Palmetto Institute, South Carolina Institute for Energy Studies, South Carolina Public Service Commission (SC PSC), Office of Regulatory Staff, South Carolina Department of Revenue, electric utilities and rural electric cooperatives, livestock and poultry producers, crop producers, and timberland owners.

Other: Explore biomass production for utilization in electricity, steam, and heat generation using 100% biomass and/or co-firing with other feedstocks.

Sample Draft Policy Option Template

FAW-4 In-State Liquid Biofuels Production

Policy Description

The “Policy Description” is a part of the Straw Proposal. CCS will provide sample text for volunteer sub-groups to work from. This section should provide a **brief** summary of the proposed policy option.

CCS default text: Increase production of ethanol and/or biodiesel fuel from agriculture, forestry, and waste feedstocks (raw materials) to displace the use of fossil fuel. Promote the development of cellulosic ethanol technologies and ethanol production systems that use renewable fuels to improve the embedded energy content of ethanol. Increased production and consumption in-state give the highest benefits.

Policy Design

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Goals: Increase the production of liquid advanced biofuels in Arkansas, such that by 2025 the state utilizes approximately 10% of available biomass supply per year to produce advanced biofuels with significantly lower embedded GHG emissions compared to conventional fuel products (from a life-cycle perspective).

Timing: The above goal identifies a time frame to achieve the final utilization goal. However, the Governor’s Commission on Global Warming (GCGW) has suggested that the Agriculture, Forestry, and Waste Management (AFW) TWG investigate the level of development of relevant biofuel technologies. Using this information, the AFW TWG should determine an appropriate commercialization pathway for Arkansas, including identifying when the technology will most likely become commercially available.

Parties Involved: Agriculture land owners, forest owners and managers, biofuel producers and large fuel distributors, retailers, and users.

Other: The intent of this option is to focus on non-food biomass resources.

According to the U.S. Energy Independence and Security Act of 2007, advanced biofuel “means renewable fuel, other than ethanol derived from corn starch, that has lifecycle greenhouse gas emissions, as determined by the Administrator, after notice and opportunity for comment, that are at least 50 percent less than baseline lifecycle greenhouse gas emissions.” The bill stipulates that “the types of fuels eligible for consideration as ‘advanced biofuel’ may include any of the following:

“(I) Ethanol derived from cellulose, hemicellulose, or lignin.

“(II) Ethanol derived from sugar or starch (other than corn starch).

“(III) Ethanol derived from waste material, including crop residue, other vegetative waste material, animal waste, and food waste and yard waste.

“(IV) Biomass-based diesel.

“(V) Biogas (including landfill gas and sewage waste treatment gas) produced through the conversion of organic matter from renewable biomass.

“(VI) Butanol or other alcohols produced through the conversion of organic matter from renewable biomass.

“(VII) Other fuel derived from cellulosic biomass.”

Sample Draft Policy Option Template

FAW-5 Advanced Waste Reduction and Recycling

Policy Description

The “Policy Description” is a part of the Straw Proposal. CCS will provide sample text for volunteer sub-groups to work from. This section should provide a **brief** summary of the proposed policy option.

CCS default text: Increase recycling and reduce waste generation in order to limit GHG emissions associated with landfill methane generation and with the production of raw materials. Reduction of generation at the source reduces both landfill emissions and upstream production emissions. Increase recycling programs, create new recycling programs, provide incentives for the recycling of construction materials, develop markets for recycled materials, and increase average participation and recovery rates for all existing recycling programs. Reduce the use of plastic shopping and refuse bags.

Policy Design

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Goals: Waste stream, including diverted waste, will be reduced by 15% in 2012, 25% by 2015, and 35% by 2020. Recycling stream will increase by 10% by 2012, 20% by 2015, and 30% by 2020.

Timing: Startup in 2010 and ramp up to higher levels in 2012 and 2015, consistent with goals

Parties Involved: Manufacturers, relevant trade associations, consumer’s associations, all state and local agencies, consumers, retail outlets

Other: According to the “2006 Maryland Waste Diversion Activities Report,” which provides information on the state’s recycling and source reduction activities for the 2005 calendar year, Maryland achieved a recycling rate of 39.2% (including organics) and an overall diversion rate of 42.6%. This recycling rate includes composted organics. The overall diversion rate includes recycling, compostable organics, and source reduction credits. Source reduction credits are allocated by the Maryland Department of the Environment, based on approved source reduction

programs implemented by municipalities. It is assumed, therefore, that these programs reduce the overall amount of waste that must be managed.