



Catalog of State Actions Agriculture, Forestry, and Waste Management Working Group

A catalog of state-level, GHG-reducing actions and policy options based on actions undertaken or considered by state, local and private actors.

Key to Future Rankings of Options in the Tables that Follow:

Potential GHG Emission Reductions <u>1/</u>	Potential Cost or Cost Savings <u>1/ 2/</u>
High (H): At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO ₂ e) per year by 2020	High (H): \$50 per metric ton CO ₂ e (tCO ₂ e) or above
Medium (M): From 0.1 to 1.0 MMtCO ₂ e per year by 2020	Medium (M): \$5-50/tCO ₂ e
Low (L): Less than 0.1 MMtCO ₂ e per year by 2020, or 1 MMtCO ₂ e by 2050	Low (L): Less than \$5/tCO ₂ e
Uncertain (U): Not able to estimate at this time	Negative (Neg): Net cost savings
	Uncertain (U): Not able to estimate at this time
<p><u>1/</u> Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.</p> <p><u>2/</u> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.</p>	

Definition of “Priorities for Analysis”:

- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low:** Low priority options will be analyzed last, time and resources permitting.

Notation of Options:

* **Options marked in bold an asterisk (*)** indicate some of the related state actions that are approved or underway, as described further in the companion options description document. TWG members are encouraged to provide information on other relevant actions.

Agriculture, Forestry, and Waste Management (AFW)

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Potential Cost or Cost Savings	Ancillary Impacts, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in SC
AFW-1 PRODUCTION OF FUELS AND ELECTRICITY IN AGRICULTURE						
1.1	Expanded Use of Biomass Feedstocks for Electricity, Heat and Steam Production					
1.2	In-State Liquid Biofuels Production (Ethanol and Biodiesel; incentives for feedstocks and production plants)*					Biodiesel Production Tax Credits. Potential for a biodiesel plant in Aiken County. Ethanol plant in Batesburg – Leesville area pending Application for Ethanol plant in Dillon. Proposed legislation would provide tax credits for ethanol production.
1.3	Manure Digesters/Other Waste Energy Utilization*					
AFW-2 AGRICULTURE – LIVESTOCK						
2.1	Manure and Nutrient Management (handling and storage, improve efficiency and application methods)*					-Comprehensive Nutrient Management Plans are required and some have been submitted to the Department. -Manure is applied at agronomic rates and spreaders have to be calibrated. -Many farms have composters for dead bird disposal. Some manure is

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2.2	Changes in Animal Feed (optimize nitrogen for N ₂ O reduction and/or use supplements to reduce CH ₄ from enteric fermentation)*					
2.3	Rotational Grazing/Improve Grazing Crops and/or Management					
AFW-3	AGRICULTURE – CROP PRODUCTION					
3.1	Soil Carbon Management (Conservation Tillage, Reduce Summer Fallow, and Increase Winter Cover Crops)*					Many farmers are participating in the no-till program. Each farm eligible for up to \$40,000 in incentives for no-till farming.
3.2	Nutrient and Water Management					
AFW-4	AGRICULTURE – LAND USE MANAGEMENT					
4.1	Land Use Management that Promotes Grassland Cover (.e., convert cropland to grassland or prevent conversion of grassland to croplands)*					Cost-sharing programs available for landowners to manage forestland. These include the Forest Renewal Program, Stewardship Incentives Program, Conservation Reserve Program, Forest Land Enhancement Program, Wildlife Habitat Incentive Program, Environmental Quality

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						Incentive Program, and others. Through these programs landowners can receive advice from foresters, biologists, soil scientists, and other experts along with cost sharing that pays, on average, about 40% of the cost of site preparation, planting, soil stabilization, wildlife habitat improvement, and some intermediate management practices.
4.2	Preserve Open Space/Agricultural Land*					Conservation Land Bank (CLB) and various land trusts (100,000 acres protected through easements or purchase through CLB)
AFW-5	AGRICULTURE – FARMING PRACTICES					
5.1	Reductions In On-Farm Energy Use (Conversion from Diesel Farm Equipment to LNG/CNG or Hybrid technology)					
5.2	Organic Farming*					The South Carolina Organic Certification Assistance Program is a cost share program that assists the organic grower in the cost of becoming certified under the National Organic Program.
5.3	Programs to Support Local Farming/Buy Local*					-Seeds of Hope, a local farmers market program in Columbia, has weekly markets at 12+ sites during the growing season. 63 markets in the state listed by USDA. -SC Agribusiness Development Program is responsible for the development of new products that

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						add value to the state's agricultural products.
AFW-6	PRODUCTION OF FUELS AND ELECTRICITY IN FORESTRY					
6.1	Expanded Use of Biomass Feedstocks for Electricity, Heat and Steam Production					
6.2	In-State Liquid Biofuels Production					
6.3	Improved Energy Capture from Wood Waste Combustion					
6.4	Improved Commercialization of Biomass Gasification and Combined Cycle					
AFW-7	FORESTRY – BIOMASS PROTECTION AND MANAGEMENT					
7.1	Forest Protection – Reduced Clearing and Conversion to Nonforest Cover*					-A change in SC tax law is in place, only for land put into a conservation easement in 2006 and 2007, which lets the property owner offset half his tax liability for 15 years. -Forest Inventory data shows that the acreage of forestland in SC has been stable since 1947.
7.2	Urban Forestry*					Tree City USA: forty SC cities participating.
7.3	Afforestation/Restoration*					SC Forestry Commission uses several state and federal cost-share programs and technical assistance for landowners.
7.4	Forest Management for					Assistance available to pay partial

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	Carbon Sequestration (Waste Recycling, Density Management, Expand Use of Genetically Preferred Species, Modified Biomass Removal Practices, Fire Management)*					costs of prescribed burning, reforestation, stand improvement, and other practices. Some poultry litter and municipal sludge is utilized as forest fertilizer. 21,000 acres of forestland will be included in a program to restore the longleaf pine. SC will implement the use of improved seedlings for higher production. For example, Arborgen and Cellfor are developing tree varieties to capture more carbon. SC forestry commission offers assistance and guidance for those seeking to perform prescribed burns to mitigate wildfire risk. Programs such as “Firewise Communities” educate homeowners about wildfire prevention and provide wildfire hazard assessments.
AFW-8	FORESTRY - WOOD PRODUCTS AND WASTE					
8.1	Improved Mill Waste Recovery*					Almost all forest products mills use waste for steam or energy, or sell waste to mills that do, so all is utilized.
8.2	Improved Logging and Other Residue Recovery					
8.3	Expanded Use of Wood Products for Building Materials*					State and regional trade associations interested in promoting ‘Southern Yellow Pine’ over competitors.
AFW-9	WASTE MANAGEMENT – WASTE MANAGEMENT STRATEGIES					
9.1	Advanced Recycling and Composting					

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9.2	Promotion of Bioreactor Technology (Advanced Municipal Solid Waste Management Practices)					
9.3	Source Reduction Strategies					
9.4	Resource Management Contracting					
9.5	Waste Coal Recapture					
9.6	Prevent Landfilling of Unprocessed Organic Material					
AFW-10	WASTE MANAGEMENT – LANDFILL GAS STRATEGIES					
10.1	Flare Landfill Methane at non-NSPS (smaller) Sites*					Various local governments are running non-NSPS flares.
10.2	Methane & Biogas Energy Programs*					-SC Alternative Energy bills establish tax incentives for industrial purchase of equipment to use landfill gas. -Legislature passed S.1245, providing manufacturers with tax credits for 25% of cost of landfill gas energy equipment.
10.3	Landfill Methane Energy Programs*					SC has six existing landfill methane to energy facilities. One facility provides power directly for manufacturing processes. More are in the pipeline.
AFW-11	WASTE MANAGEMENT – WASTEWATER MANAGEMENT ACTIVITIES					
11.1	Energy Efficiency Improvements					
11.2	Programs to Lower Waste					

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	Water Processing Needs					
11.3	Install Digesters and Turbines or Fuel Cells					