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Memo

To: South Carolina Climate, Energy and Commerce Advisory Committee

From: The Center for Climate Strategies

CC: Executive Office of South Carolina Governor Mark Sanford
Chairman, the Honorable Representative Ben Hagood, South Carolina Senate
South Carolina Department of Health and Environmental Control; South Carolina
Department of Natural Resources

Subject: Preparation for the Fifth Meeting of the South Carolina Climate, Energy and
Commerce Advisory Committee

Date: February 22, 2008

At our fifth meeting of the South Carolina Climate, Energy and Commerce Advisory Committee (CECAC) on Friday, February 22, 2008, we will begin review and approval of draft pending policy options. During the CECAC meeting members of Technical Work Groups (TWGs) will be invited to participate in the background discussion of draft policy options, but only CECAC members will make decisions regarding approval and or modifications for further development of draft policy options by the TWGs. We also will review and approve progress and recommended updates to the statewide inventory and forecast of emissions. Based on this discussion and any adjustments made by the CECAC, the TWGs will continue to quantify and further develop policy options and updates to the inventory and forecast. Additional consideration and approval of draft policy options not approved at the fifth meeting on February 22, 2008 will continue at the next CECAC meeting proposed to be held on Friday, April 4, 2008, and the final CECAC meeting proposed to be held on Friday, May 16, 2008.

Note that we are recommending the addition of a CECAC meeting for April 4 and considering adjusting the date for the CECAC's final meeting from May 9 to May 16 to ensure that we have adequate time to fully consider and deliberate the quantification results of our pending priority policy options. We will discuss approval of these dates during our meeting on February 22.

As preparation for our fifth meeting, please review the attached lists of TWG suggested draft policy options and other background documents posted to the project website at:
www.scclimatechange.us.

In terms of overall progress, the CECAC has completed key milestones since its launch, including:

- Identification of a full range of potential South Carolina options for mitigation of GHG emissions, including over 250 possible state actions.
- TWG identification, by informal balloting, of 52 initial priorities for analysis of draft policy options.
- Completion of the initial statewide inventory and forecast of GHG emissions and start of the review process.
- Approval of a full range of draft initial priorities for analysis of policy options.
- CECAC approval of TWG suggested “straw proposals” for the design of initial draft policy options.
- Completion of the first round of economic analysis of most draft policy options by CCS, and identification of early consensus recommendations at our fifth meeting.
- Review and revision of policy option design, analysis, and draft options as needed during TWG calls and meetings.

The next stages of the CECAC process will include completion of the following milestones:

- Additional updates to the design and quantification of draft policy options and the inventory and forecast, as needed.
- Final approval of remaining CECAC policy option recommendations at our sixth and seventh meetings.
- Final approval of the statewide inventory and forecast of GHG emissions by the final meeting.

Summary of CECAC Progress and Next Steps:

Status of Draft Policy Options	
Original Number of Potential Options Presented to the CECAC from the CCS Catalog of State Actions	208
Updated Number of Potential Options on the CCS Catalog of States Actions, Including CECAC Additions	254
Current Number of Draft Potential Priority Policy Options for Analysis	48
• Residential, Commercial, and Industrial	9
• Energy Supply	8
• Transportation and Land Use	14
• Agriculture, Forestry and Waste	10
• Cross Cutting Issues	7
Next Steps	
Present First Round of Analysis of Draft Policy Options and Approve Initial Consensus Recommendations	CECAC Meeting #5
Present Updated Draft Policy Options and Approve Additional Consensus Recommendations	CECAC Meeting #6
Approve Final CECAC Policy Option Recommendations	CECAC Meeting #7

Table 1.
Residential, Commercial, and Industrial Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Option No.	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2012	2020	Total 2008–2020			
RCI -1	Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Electricity (Including Expansion of Same) (Residential, Commercial, and Industrial)	1.5	8.2	43.0	–\$1,127	–\$26	Pending
RCI -2	Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil	0.1	0.7	3.7	–\$256	–\$70	Pending
RCI -3	Incentives and Regulatory Reform To Promote Implementation of Renewable Energy Systems, Including Solar Hot Water (Residential, Commercial, and Industrial)	TBD	TBD	TBD	TBD	TBD	Pending
RCI -4	Energy Management Training/Training of Building Operators	<i>Not quantified</i>					Pending
RCI -5	Incentives, Resources, and Regulatory Reform To Promote Energy Recycling, Including Combined Heat and Power	1.0	8.2	39.5	–\$251	–\$6	Pending
RCI -6	Incentives and Policies for Improving Building Efficiency, Including Building Energy Codes	0.9	2.4	16.6	TBD	TBD	Pending
RCI -7	Improved Design and Construction in New and Existing State and Local Government Buildings, “Government Lead by Example”	0.6	5.3	26.9	–\$505*	–\$19*	Pending
RCI -8	Participation in Voluntary Industry-Government Partnerships (Including Incentives)	0.0	0.0	0.1	N/A	N/A	Pending
RCI -9	Incentives and Policies for Improving Appliance Efficiency, Including Appliance Standards	0.3	0.9	5.6	–\$90	–\$16	Pending
Sector Total After Adjusting for Overlaps		TBD	TBD	TBD	TBD	TBD	
Reductions From Recent Actions		TBD	TBD	TBD	TBD	TBD	
Sector Total Plus Recent Actions		TBD	TBD	TBD	TBD	TBD	

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent; TBD = to be determined.

Negative values in the Net Present Value and the Cost-Effectiveness columns represent net cost savings.

* Includes audits costs only; retrofit and efficiency improvement costs to be determined (TBD).

Table 2.
Energy Supply Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Option No.	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$) ¹	Cost-Effectiveness (\$/tCO ₂ e) ¹	Level of Support
		2012	2020	Total 2008–2020			
ES-1*	A thorough study of energy options for portfolio standards, including renewables, energy efficiency, nuclear power, waste to energy, landfill gas, offshore wind, and hydro	<i>(Portfolio composition TBD)</i>					Pending
ES-1a: Renewable Only, No PV	All GDS/La Capra “practical” renewable potential	1.2	3.0	21.0	\$232	\$11	Pending
ES-1b: Renewable With PV	ES-1a plus 100 MW PV, ½ utility & ½ distributed	1.2	3.1	21.9	\$356	\$16	Pending
ES-1c: Offshore Wind Only	500 MW in 2013, 500 MW in 2016	0.0	2.0	14.1	\$447	\$32	Pending
ES-1d: Nuclear Only	1,000 MW in 2017, 1,000 MW in 2019	0.0	10.6	32.7	\$884	\$27	Pending
ES-1e: Energy Efficiency	Same as RCI-1; 1%/yr by 2015, 1.5% by 2020	1.5	8.2	43.0	–\$1,127	–\$26	Pending
ES-2	Technology research and development, including state funding	<i>Not quantified</i>					Pending
ES-3	Renewable energy (full range) financing, tax incentives, loans <i>Note: Only PV, small hydro, and distributed wind analyzed thus far</i>	0.03	0.11	0.66	\$116	\$177	Pending
ES-4	Regulatory model to equalize utility earnings on energy efficiency with earnings on traditional power supply to allow investment in energy efficiency and renewable technologies to be considered in part with investment in new conventional capacity.	TBD	TBD	TBD	TBD	TBD	Pending
ES-4a	Assuming utility gets 10% of avoided costs	1.5	8.2	43.0	–\$916	–\$21	Pending
ES-4b	Assuming utility gets 90% of avoided costs	1.5	8.2	43.0	776	18	Pending
ES-5	New nuclear power, including reprocessing	TBD	TBD	TBD	TBD	TBD	Pending
ES-6	Green power purchases and marketing, 1% participation by 2012	0.2	0.2	1.7	\$46	\$27	Pending
ES-7	Attract renewable energy technology businesses to South Carolina	<i>Not quantified</i>					Pending
ES-8	Distributed renewable energy incentives and/or barrier removal (Including Interconnection Rules)	TBD	TBD	TBD	TBD	TBD	Pending
	Sector Total After Adjusting for Overlaps	TBD	TBD	TBD	TBD	TBD	
	Reductions From Recent Actions	TBD	TBD	TBD	TBD	TBD	
	Sector Total Plus Recent Actions	TBD	TBD	TBD	TBD	TBD	

Notes for Table 2:

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent; TBD = to be determined.

Negative values in the Net Present Value and the Cost-Effectiveness columns represent net cost savings.

* ES-1 overlaps with AFW-5.

Note: General definition: For the purposes of the ES policy options, and unless otherwise noted, “renewable energy” is defined as follows: A renewable energy resource includes solar; wind; small hydroelectric geothermal; ocean current or wave energy; biomass resources, including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, and landfill methane; waste heat derived from a renewable energy resource and used to produce electricity; and hydrogen derived from a renewable energy resource.

Table 3.
Transportation and Land Use Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Option No.	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2012	2020	Total 2008–2020			
TLU-1	Adopt California Clean Car Standards	0.21	1.14	7.04	TBD	TBD	Pending
TLU-2	Transportation System Management	0.01	0.02	0.14	TBD	TBD	Pending
TLU-3	Tax Credits for Efficient Vehicles	TBD	TBD	TBD	TBD	TBD	Pending
TLU-4	Improve Development Patterns	0.35	2.10	12.47	TBD	TBD	Pending
TLU-5	Transit & Bike-Pedestrian	<i>Quantified as part of TLU-4</i>					Pending
TLU-6	Alternative Fuel Infrastructure	<i>Quantified as part of TLU-12</i>					Pending
TLU-7	Diesel Engine Emission Reductions and Fuel Efficiency Improvements	TBD	TBD	TBD	TBD	TBD	Pending
TLU-8	Stricter Enforcement of Speed Limits	0.05	0.06	0.63	TBD	TBD	Pending
TLU-9	Make Full Use of CMAQ funds	<i>Not quantified</i>					Pending
TLU-10	Commuter Choice	0.11	0.43	2.51	TBD	TBD	Pending
TLU-11	Explore Available Resources for Funding Road Maintenance and Mass Transportation	0.06	0.34	1.82	TBD	TBD	Pending
TLU-12*	Low-GHG Fuel Standard	0.35	3.57	17.07	TBD	TBD	Pending
TLU-13	Freight Vehicle Technology Improvements	<i>Quantified as part of TLU-7</i>					Pending
TLU-14	Rail	TBD			TBD	TBD	Pending
	Sector Total After Adjusting for Overlaps	TBD	TBD	TBD	TBD	TBD	
	Reductions From Recent Actions	TBD	TBD	TBD	TBD	TBD	
	Sector Total Plus Recent Actions	TBD	TBD	TBD	TBD	TBD	

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent; TBD = to be determined.

* Note: TLU-12 overlaps with AFW-4.

Table 4.
Agriculture, Forestry, and Waste Management Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Option No.	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$)	Cost-Effectiveness (\$/MtCO ₂ e)	Level of Support
		2012	2020	Total 2008–2020			
AFW-1	On-Farm Energy Efficiency	0.05	0.2	1	–\$43	–\$41	Pending
AFW-2	Farm By-products Energy Recovery						Pending
	Swine and Dairy Manure	0.01	0.02	0.1	\$0.6	\$5	
	Poultry Litter	0.01	0.03	0.2	\$3	\$15	
AFW-3	Expanded Use of Local Agricultural Products	0.01	0.03	0.2	TBD	TBD	Pending
AFW-4*	In-State Liquid Biofuels Production						Pending
	Biodiesel–based on in-state feedstock supply	0.1	0.1	1.5	\$26	\$17	
	Ethanol–lower-limit production goal	0.9	1.5	13	\$281	\$22	
AFW-5*	Expanded Production of In-State Biomass for Electricity, Heat, or Steam Production	2.7	4.9	41	\$737	\$18	Pending
AFW-6	Terrestrial Carbon Sequestration						Pending
	(a) Agriculture	TBD	TBD	TBD	TBD	TBD	
	(b) Forestry						
	Forest Management	0.3	0.8	6	\$53	\$9	
	Afforestation / Reforestation	0.8	2.4	16	\$158	\$10	
	Urban Forestry	TBD	TBD	TBD	TBD	TBD	
AFW-7	Conservation and Restoration of Forest and Agricultural Lands for Enhanced Carbon Sequestration						Pending
	(a) Agriculture	0.1	0.2	1.5	\$54	\$37	
	(b) Forestry	0.4	3.1	16	104	6	
AFW-8	Advanced Recycling and Composting	1.2	3.0	20	–\$44	–\$2	Pending
AFW-9	Organics Management for Energy Recovery	0.4	1.0	7	0	0	Pending
AFW-10	Water and Wastewater Energy Efficiency Improvements	0.2	0.2	1.6	–\$33	–\$21	Pending
	Sector Total After Adjusting for Overlaps	TBD	TBD	TBD	TBD	TBD	
	Reductions From Recent Actions	TBD	TBD	TBD	TBD	TBD	
	Sector Total Plus Recent Actions	TBD	TBD	TBD	TBD	TBD	

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent; TBD = to be determined.

Negative values in the Net Present Value and the Cost-Effectiveness columns represent net cost savings.

* Note: AFW-4 overlaps with TLU-12, and AFW-5 overlaps with ES-1.

**Table 5.
 Cross-Cutting Issues Technical Work Group
 Summary List of Recommended Priority Policy Options for Analysis**

Option No.	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2012	2020	Total 2008–2020			
CC -1	Inventories and Forecasting	<i>Not quantified</i>					Pending
CC -2	GHG Reporting and Registry	<i>Not quantified</i>					Pending
CC -3	Statewide GHG Reduction Goals and Targets	<i>Not quantified</i>					Pending
CC -4	State Government GHG Emissions (Lead-by-Example)	<i>Not quantified</i>					Pending
CC -5	Comprehensive Local Government Climate Action Plans (Counties, Cities, etc.)	<i>Not quantified</i>					Pending
CC -6	Public Education and Outreach	<i>Not quantified</i>					Pending
CC -8	Adaptation & Vulnerability	<i>Not quantified</i>					Pending
	Sector Total After Adjusting for Overlaps	<i>Not quantified</i>					
	Reductions From Recent Actions	<i>Not quantified</i>					
	Sector Total Plus Recent Actions	<i>Not quantified</i>					

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent.