



Catalog of State Actions

Residential, Commercial and Industrial

Draft Prepared for Climate, Energy, and Commerce Advisory Committee (CECAC)
Meeting #2 – June 27, 2007

A catalog of state-level, GHG-reducing actions and policy options prepared by the Center for Climate Strategies (CCS) and South Carolina Department of Health and Environmental Control (DHEC) based on actions undertaken or considered by South Carolina and other states, including regional, state, local and private actions.

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
<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.	
<u>2/</u> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

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.

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in SC
RCI-1	ENERGY EFFICIENCY PROGRAMS, FUNDS, AND GOALS					
1.1	Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)					Energy Efficiency Summit – planned for April 2007 – sponsored by Duke Power, Energy Office, DHEC and others Energy Office tracks utility programs.
1.1a	Residential Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)					
1.1b	Commercial Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)					
1.1c	Industrial Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)					
1.2	Demand-Side Management (DSM) Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil					See 1.1.

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1.3	Regional Market Transformation Alliance					
1.4	Energy Efficiency Financing (Loans)					<p>Progress Energy and Santee Cooper offer energy efficiency financing.</p> <p>Energy Office has ConserFund Revolving Loan program for public facilities and NGOs.</p> <p>State Treasurer's Office has Installment Purchase and Master Lease Purchase programs that state agencies can use to finance energy conservation projects</p>
1.5	Expanding the investment options for electric utilities to include efficiency investment (decoupling sales from revenues)					
1.6	Public Benefits Surcharge					
RCI-2	BUILDINGS					
2.1	Improved Building Codes for Energy Efficiency					SC has among the most stringent in the country.

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2.2	Promotion and Incentives for Improved Design and Construction (e.g. LEED, green buildings) in the Private Sector					<p>Ritchie, R-Spartanburg, introduced a bill in 2007 that would provide tax incentives and faster permitting for private developers to meet the LEED Silver standard.</p> <p>EarthCraft Partnership of SCEO, local homebuilders associations and Southface Energy Institute is piloting a EarthCraft house program for Charleston and Greenville – over 100 homes built.</p>

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2.3	Improved Design and Construction in new and existing state and local government buildings, "Government Lead-by-example"					<p>Ritchie, R-Spartanburg, introduced two bills in 2007 that would:</p> <ul style="list-style-type: none"> • Require state-funded buildings - either new construction or renovations - to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard for energy efficiency. • Require new or renovated public K-12 schools to meet the LEED Silver standard. <p>House bill 3034 (Brady) promotes LEED standard for state buildings. Passed House, in Senate committee.</p>
2.4	Support for Energy Efficient Communities Planning, "Smart Growth"					

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2.5	Increased Use of Blended Cement (substituting fly ash or other pozzolans for clinker reduces CO ₂ emissions)					
2.6	Reduction of Emissions from Diesel Engines Used in New Construction Developments					<p>DHEC participates in the Southeast Diesel collaborative, and promotes contract language to promote clean diesel technology for construction.</p> <p>York Tech has received a grant to retrofit nonroad diesel vehicles with diesel oxidation catalysts.</p> <p>DHEC promotes use of ULSD in nonroad equipment.</p>

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2.7	Training and Education for Builders and Contractors (e.g. HVAC ¹ sizing, duct sealing)					<p>York Tech is considering seeking HERS-certified instructors, incorporating energy efficiency and technologies such as solar hot water) into the regular curriculum and providing similar training for current professionals.</p> <p>Energy Office maintains membership on behalf of state government in the US Green Building Council. SC Chapter provides monthly education programs.</p>
2.8	Energy Management Training/Training of Building Operators					<p>The South Carolina Energy Office holds a preparation class for Energy Manager certification and other related training.</p>
2.9	Improve residential insulation building codes					
2.10	Energy Efficiency for Manufactured Housing					
2.11	Incentive for use of carbon-sequestering building materials					

¹ HVAC = Heating, Ventilation, and Air Conditioning

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RCI-3 APPLIANCE STANDARDS						
3.1	More Stringent Appliance/Equipment Efficiency Standards					
3.2	Support for Federal-level Appliance Efficiency Standards					Energy Star information available through SC Energy Office. DHEC encourages local governments to implement Energy Star.
3.3	Air conditioning and refrigeration standards					
RCI-4 EDUCATION AND OUTREACH						
4.1	Consumer Education Programs					
4.2	Energy Efficiency and Environmental Impacts Awareness in School Curricula					Santee Cooper's Solar Schools. Action for a Cleaner Tomorrow is an approved curriculum that includes material on efficiency, provided by the Energy Office. The Energy Office also participates in other school outreach activities.
4.3	Post-secondary Specialist Education and Certification for Building Energy Efficiency Experts and Related Trades					

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4.4	Post-secondary College and University Programs					
RCI-5	PRICING AND PURCHASING					
5.1	Green Power Purchasing for Consumers					Santee Cooper and the state electric co-ops offer Green Power purchasing options to residential and commercial customers.
5.2	Net-metering for Distributed Generation and Combined Heat and Power					The Public Service Commission, Santee Cooper and the electric cooperatives are considering net metering.
5.3	Rate structures and Technologies to Promote Reduced GHG Emissions (e.g., Time of Use [TOU] Rates)					Santee Cooper, Progress, Duke, SCE&G – TOU rates for non-residential customers. TOU rates are also available to residential customers, but these rates are not widely used. SCE&G Rate 6 program, Santee Cooper Good Cents program.
5.4	Bulk Purchasing Programs for Energy Efficiency or Other Equipment					

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RCI-6	CUSTOMER-SITED DISTRIBUTED ENERGY AND COMBINED HEAT AND POWER					
6.1a	Residential Incentives to Promote Implementation of Renewable Energy Systems					SC offers tax incentives for residential/business purchase of solar heating and cooling systems – tax credit of 25% of installation cost - \$3,500 annual tax credit limit (amounts over the cap can be rolled over to subsequent years)
6.1b	Commercial Incentives to Promote Implementation of Renewable Energy Systems					
6.1c	Industrial Incentives to Promote Implementation of Renewable Energy Systems					
6.2	Incentives and Resources to Promote Combined Heat and Power (CHP, or “cogeneration”)					SC has several CHP facilities powered by waste (Eastover and Charleston), wood (Georgetown, Florence and Charleston) and biomass (Spartanburg)
6.3	Incentives for industrial use of landfill gas					
RCI-7	GHG EMISSIONS-SPECIFIC GOALS AND POLICIES, INCLUDING PROCESS EMISSIONS					
7.1	GHG Cap and Trade Program (for RCI Sectors)					
7.2	GHG or Carbon Tax					

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7.3	Switching to Lower GHG Fuels					Biomass Council and Palmetto Clean Fuels Coalition support alternative fuels.
7.4	Policies and/or Programs Specifically Targeting Non-energy GHG Emissions					
7.5	Negotiated/Voluntary Emissions or Energy Savings Agreements					
RCI-8	TECHNOLOGY-SPECIFIC POLICIES					
8.1	White Roofs, Rooftop Gardens, and Landscaping (including Shade Tree Programs)					40 SC cities have the Tree City USA designation. Pilot program to plant trees to shade air conditioning units, Fountain Inn Elementary School.
8.1a	Reduction of heat-island effect for non-roof surfaces					
8.2	Focus on specific end-uses/technologies					SC Energy Office has Energy Briefs available on many of these topics.

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RCI-9	NON-ENERGY EMISSIONS (HFCS, PFCS, SF₆, CO₂ PROCESS EMISSIONS)					
9.1	Participation in Voluntary Industry-Government Partnerships					SC Environmental Excellence program administered by DHEC encourages and publicizes waste reduction and energy conservation efforts. EPA's performance Track Program
9.1a	<i>Incentives for</i> Participation in Voluntary Industry-Government Partnerships					
9.2	Process Changes/ Optimization					Many industries are using biomass energy resources (including landfill gas). SC Manufacturers Extension Partnership works with industries to optimize processes.
9.3	Leak Reduction /Capture, Recovery and Recycling of Process Gases					Licenses required for HVAC companies.

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9.4	Appliance Recycling/Pick-Up Programs					Disposal of appliances is regulated under the South Carolina Solid Waste Policy and Management Act. There are some local recycling and pick-up programs.
RCI-10	OTHER					
10.1	Focus on specific market segments: existing homes (weatherization), new construction, apartments, low income, etc.					Weatherization Assistance Program (DOE, administered by Governor's Office) provides weatherization assistance.
10.2	Municipal Energy Management					City of Columbia to contract an energy audit. Charleston completed audit in 2003.
10.2a	Statewide inventory by city and benchmarking					
10.3	Industrial ecology/ by-product synergy					SC Biomass Council considering issues related to this.
10.4	Industrial Audits					SC Energy Office and SC Manufacturers Extension Partnership offer industrial audits.