

SOUTH CAROLINA CLIMATE, ENERGY AND COMMERCE ADVISORY COMMITTEE

PRESENTER: CHAIRMAN, REPRESENTATIVE BEN A. HAGOOD, JR.

Introduction

On February 16, 2007, South Carolina Governor Mark Sanford issued Executive Order No. 2007-04 establishing the Governor's Climate, Energy, and Commerce Advisory Committee ("Committee") with the following charges:

1. The Committee shall consider the potential benefits, costs, savings, and feasibility of furthering building and infrastructure efficiency, and of carbon dioxide mitigation options and related energy policy and economic opportunities, and develop specific recommended actions.
2. The Committee shall not exceed 30 members appointed by the Governor, including representatives from some or all of the following sectors: Tourism and Recreation, Agriculture and Forestry, Renewable Energy, Transportation, Insurance, Banking and Finance, Manufacturing, Electric Power Generation, Advanced Technology, Construction and Building, Small Business, Public Health, Conservation Organizations, State and Local Government, Educational Institutions, and the General Public.
3. The Committee shall be authorized to hold public meetings and take such actions as it deems necessary and advisable to achieve its purpose.
4. The Committee shall meet as needed and submit a Climate, Energy, and Commerce Action Plan to the Governor by June 2008.
5. The Committee may receive support from the Departments of Natural Resources and Health and Environmental Control in achieving its mission.

CECAC Members

- ❑ Rep. Ben Hagood: South Carolina House of Representatives / Chairman
- ❑ Dana Beach: Executive Director, South Carolina Coastal Conservation League
- ❑ Crandall Close Bowles: Chairman, Springs Industries, Inc.
- ❑ Jim Byrd: Deputy Director, Market Services Division, South Carolina Department of Insurance
- ❑ Lonnie Carter: President and CEO, Santee Cooper
- ❑ John Clark: Director, South Carolina Energy Office
- ❑ Barry Falin: Vice President and General Manager of Carolina Operations, Voridian
- ❑ Bob Fledderman: Manager, Environment and Regulatory Assurance, MeadWestvaco
- ❑ John Frampton: Director, South Carolina Dept. of Natural Resources
- ❑ Reggie Gallant: Vice President, Southern Zone, State Farm
- ❑ Dr. Paul Gayes: Director, Center for Marine and Wetlands Studies, Coastal Carolina University
- ❑ Emerson Gower: VP, Southern Region, Progress Energy Carolinas
- ❑ Ladd Hall: Vice President and General Manager, Nucor Steel
- ❑ Joe James: CEO, Corporation for Economic Opportunity
- ❑ Bob King: Deputy Commissioner, South Carolina Department of Health and Environmental Control
- ❑ Kevin Marsh: President, South Carolina Electric & Gas
- ❑ E. Bruce Morgan: Mayor, City of Union
- ❑ Dr. Marcus Newberry: Former Dean, MUSC College of Medicine
- ❑ Mike Olbrich: Plant Manager, BP Chemical
- ❑ James E. Rogers: Chairman, President and CEO, Duke Energy Corporation
- ❑ Bob Scott: President, South Carolina Forestry Association
- ❑ Lanneau H. Siegling: Past Chairman, Hospitality Association of South Carolina
- ❑ David Smalls: President, Walterboro-Colleton Chamber of Commerce
- ❑ Steve Smith: Executive Director, Southern Alliance for Clean Energy
- ❑ John Tiencken: Former CEO, Santee Cooper
- ❑ Sen. Danny Verdin: South Carolina Senate
- ❑ Hugh Weathers: Commissioner, Department of Agriculture
- ❑ Johnny Williamson: CEO, South Carolina Soya, LLC
- ❑ Brad Wyche: Executive Director, Upstate Forever

Development of a CECAC Action Plan

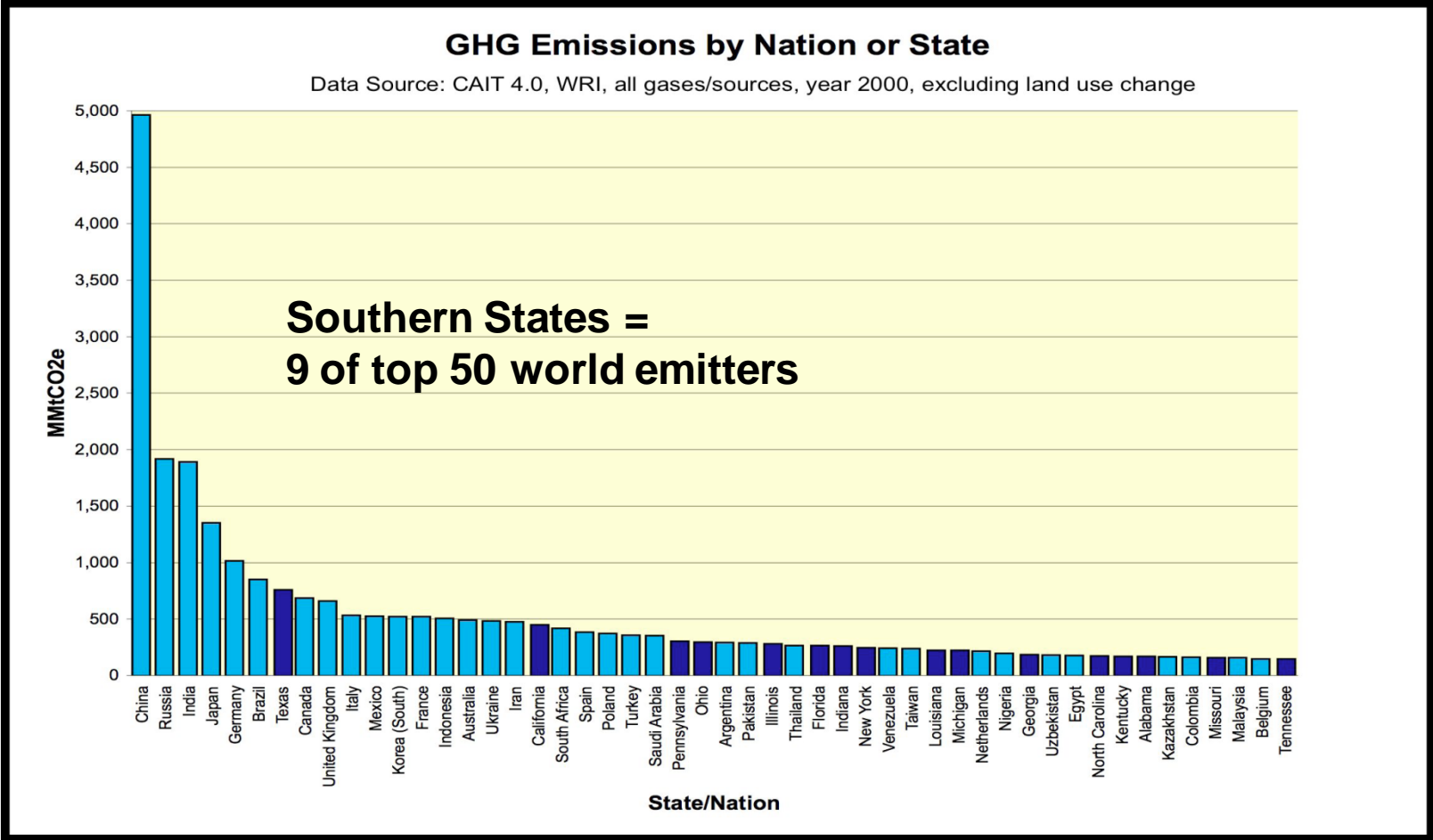
To develop a Climate, Energy, and Commerce Action Plan (Action Plan) as directed by the Governor's Executive Order, the Committee is tasked with completion of the following specific planning recommendations:

1. Review and approval of a current and comprehensive inventory and forecast of greenhouse gas (GHG) emissions in South Carolina from 1990 to 2020;
2. Development and recommendation of a comprehensive set of specific policy recommendations and associated analyses to reduce GHG emissions and enhance energy and economic policy in South Carolina by 2020 and beyond;
3. Development and recommendation of a set of recommended statewide GHG reduction goals and targets for implementation of these actions; and
4. Issuance of recommendations in the form of a final report to the Governor by June 2008. The Governor has asked the Center for Climate Strategies (CCS) to work in partnership with his office and agencies of the state to provide facilitation and technical support for a process to complete these tasks through joint activities of the Committee, a set of Technical Work Groups (TWGs), state agencies, and members of the public.

CECAC Process

- ❑ The process follows the format of several state climate action planning processes conducted by CCS (www.climatestrategies.us).
- ❑ Integrates group decisions and technical analysis through decision making by the Committee, with the support of TWGs. Activities of the Committee are transparent, inclusive, stepwise, fact-based, and consensus driven.
- ❑ The process will *seek but not mandate consensus on individual policy option* recommendations.
- ❑ The process relies on intensive use of information and interaction between facilitators, participants, and technical analysts.
- ❑ Public website for all information: www.scclimatechange.us
- ❑ Develop inventory and forecast of emissions
- ❑ Identify a full range of possible actions
- ❑ Identify initial priorities for analysis
- ❑ Develop straw proposals
- ❑ Quantify GHG reductions and costs/savings
- ❑ Evaluate externalities, feasibility issues
- ❑ Develop alternatives to address barriers
- ❑ Aggregate results
- ❑ Iterate to final agreements
- ❑ Finalize and report recommendations

Inventory and Forecast



Inventory and Forecast

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- ❑ The Center for Climate Strategies (CCS), with assistance from several South Carolina State agencies, prepared a report for CECAC, which presents a preliminary assessment of the State's greenhouse gas (GHG) emissions from 1990 to 2020.
- ❑ South Carolina's anthropogenic GHG emissions and anthropogenic sinks (carbon storage) were estimated for the period from 1990 to 2020.
- ❑ Preliminary analyses suggest that in 2005, activities in South Carolina accounted for approximately 93 million metric tons (MMt) of CO₂e emissions, an amount equal to about 1.3% of total US GHG emissions (based on 2004 US emissions).
- ❑ South Carolina's gross GHG emissions are rising faster than those of the nation as a whole (gross emissions exclude carbon sinks, such as forests).
- ❑ South Carolina's gross GHG emissions increased 39% from 1990 to 2005, while national emissions rose by only 16% from 1990 to 2004.

Inventory and Forecast

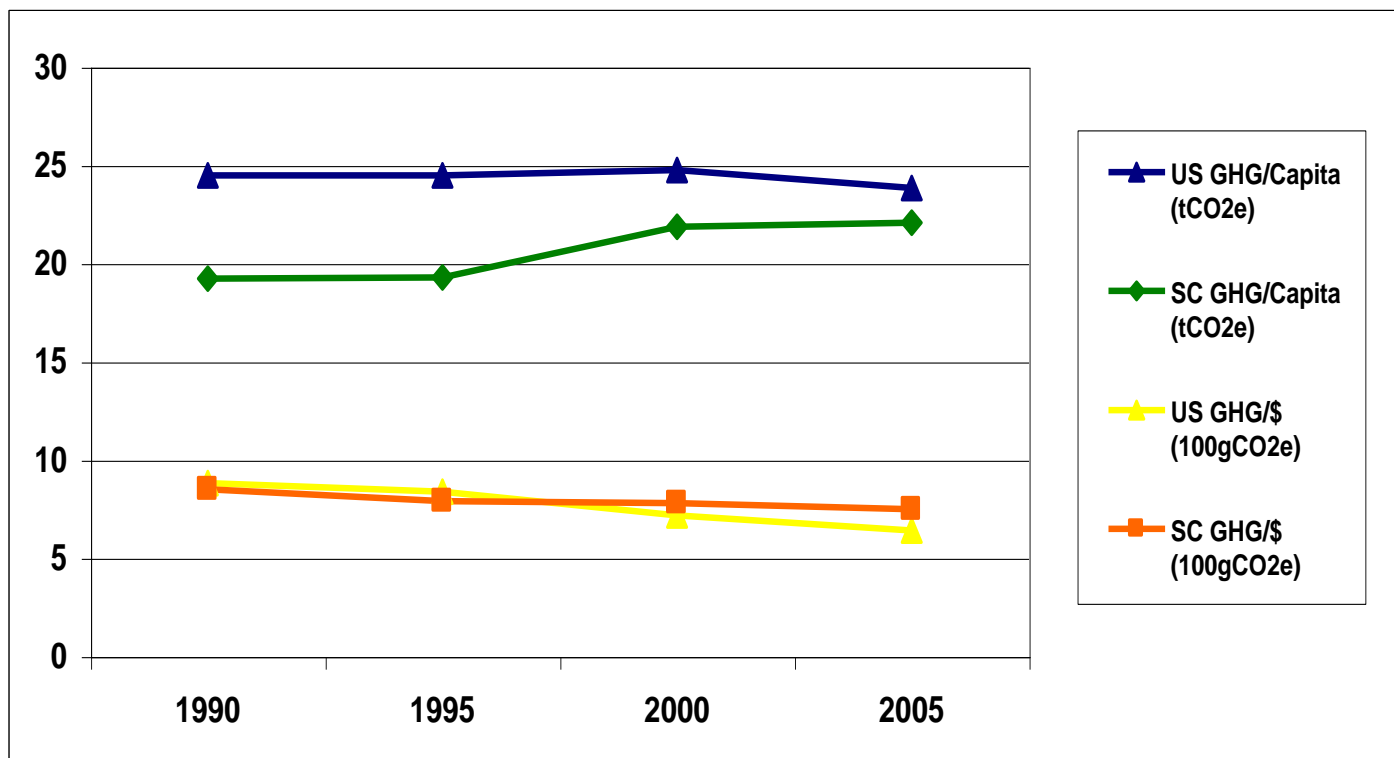
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- ❑ On a per capita basis, South Carolinians emitted about 19 metric tons (Mt) of CO₂e annually from 1990 through 1995, lower than the national average of 25 MtCO₂e/yr (see Figure 1).
 - ❑ Per capita emissions increased to about 22 MtCO₂e/yr by 2005, while the per capita emissions for the US have remained constant at 25 MtCO₂e/yr.
 - ❑ Economic growth, throughout the nation, exceeded emissions growth throughout the 1990-2005 period (leading to declining estimates of GHG emissions per unit of state product). During the 1990s, emissions per unit of gross product dropped by 27% nationally, and by 12% in South Carolina.

Inventory and Forecast

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Figure 1. Historical South Carolina and US Gross GHG Emissions, Per Capita and Per Unit Gross Product



Inventory and Forecast

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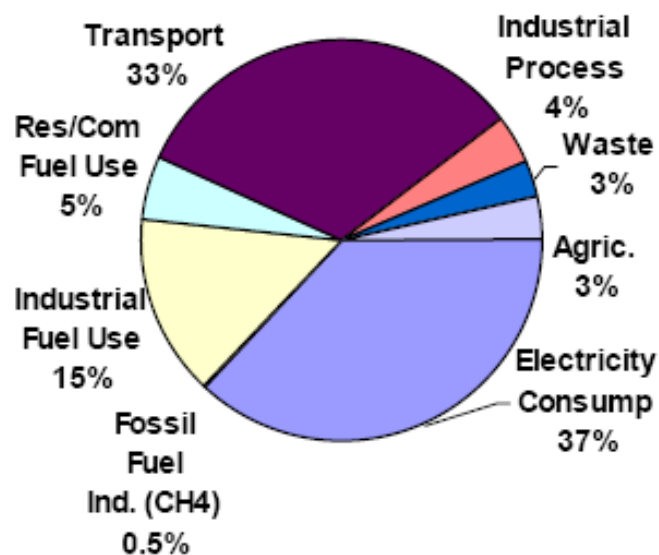
- ❑ Principle sources of South Carolina's GHG emissions are (2000 estimates) (see Figure 2):
 - ❑ Electricity consumption accounting for 37%
 - ❑ Transportation accounting for 33%
 - ❑ Residential, Commercial, and Industrial (RCI) fuel use sector, accounting for 20%
 - ❑ Waste management and agriculture sectors each contribute 3%
 - ❑ Industrial process emissions comprised 4%

Inventory and Forecast

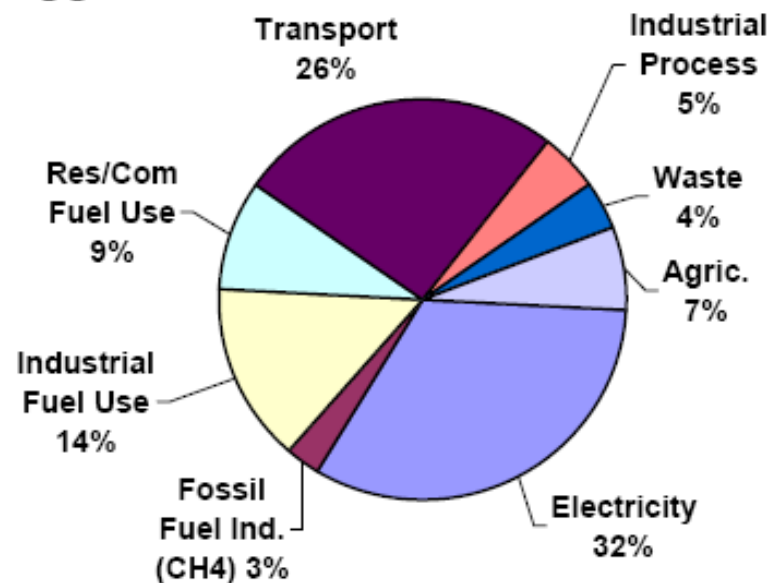
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Figure 2. Gross GHG Emissions by Sector, 2000, South Carolina and US

South Carolina



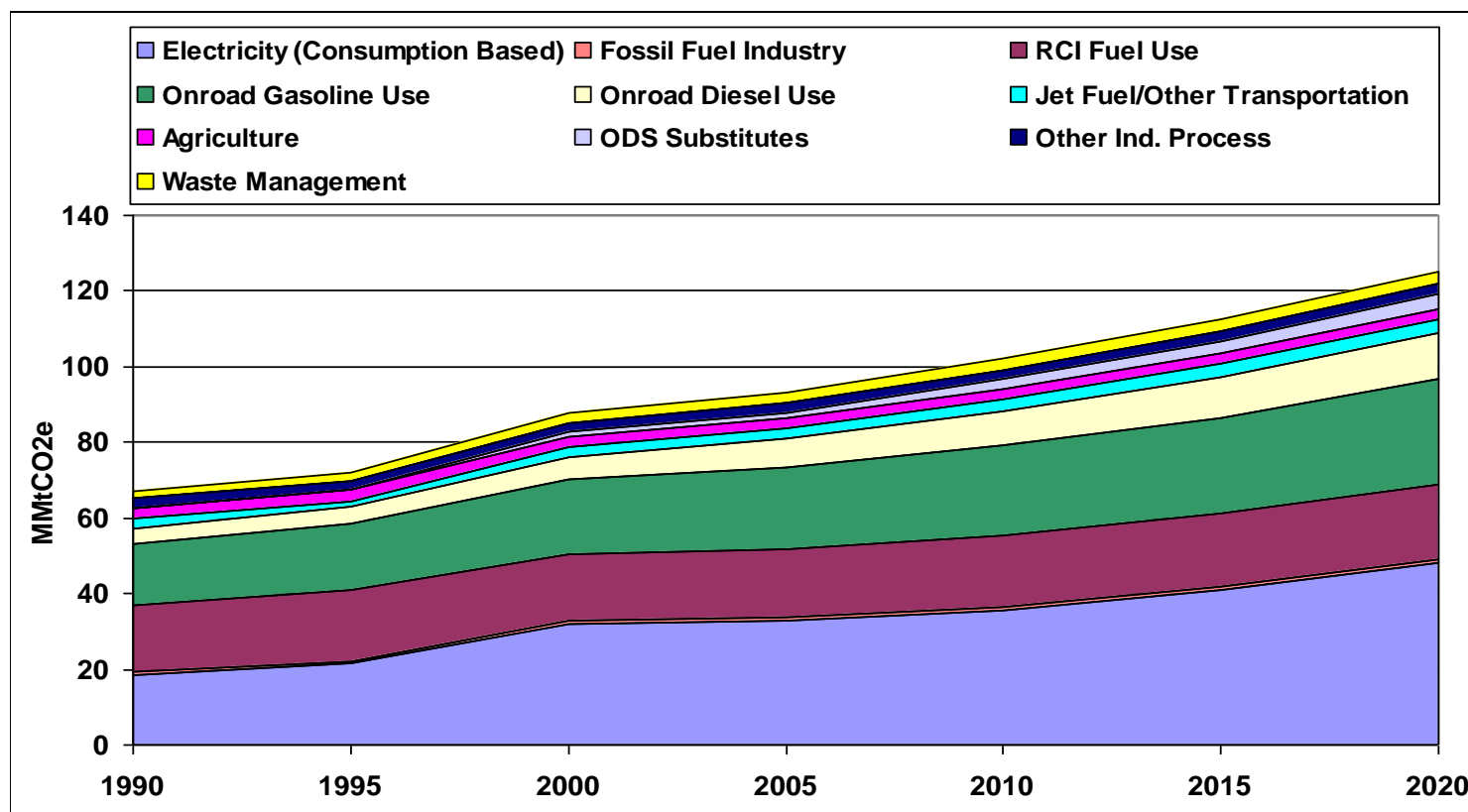
US



Inventory and Forecast

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Figure 3. South Carolina Gross GHG Emissions by Sector, 1990-2020: Historical and Projected



RCI – direct fuel use in residential, commercial, and industrial sectors. ODS – ozone depleting substance.

State Actions to Close the Jaws



Technical Work Groups

Energy Supply

- heat and power generation

Residential, Commercial and Industrial

- energy efficiency & conservation, industrial process, waste management

Transportation and Land Use

- including vehicle efficiency, alternative fuels & demand reduction programs

Agriculture, Forestry and Waste Management

- land protection, forest restoration, sustainable forest management, bioenergy, sustainable wood products, waste reduction, recycling

Cross Cutting Issues

- reporting, registries, public education, adaptation, goals

Agriculture, Forestry & Waste Management

- AFW-1: On-Farm Energy Efficiency
- AFW-2: Farm By-products Energy Recovery
- AFW-3: Expanded Use of Local Agricultural Products
- AFW-4: In-State Liquid Biofuels Production
- AFW-5: Expanded Production of In-State Biomass for Electricity, Heat, or Steam Production
- AFW-6: Terrestrial Carbon Sequestration
- AFW-7: Conservation and Restoration of Forest and Agriculture Lands for Enhanced Carbon Sequestration
- AFW-8: Advanced Recycling and Composting
- AFW-9: Organics Management for Energy Recovery
- AFW-10: Water and Wastewater Energy Efficiency Improvements

Energy Supply

- ❑ 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
- ❑ ES-2: Technology Research and Development, including state funding
- ❑ ES-3: Renewable Energy (full range) financing, tax incentives, loans
- ❑ 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
- ❑ ES-5: New Nuclear Power, including reprocessing
- ❑ ES-6: Green power purchases and marketing, 1% participation by 2012
- ❑ ES-7: Attract renewable energy technology businesses to South Carolina
- ❑ ES-8: Distributed renewable energy incentives and/or barrier removal (Including Interconnection Rules)

Residential, Commercial & Industrial

- ❑ RCI-1: Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)(Residential, Commercial, and Industrial)
- ❑ RCI-2: Demand-Side Management Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil
- ❑ RCI-3: Incentives and Regulatory Reform To Promote Implementation of Renewable Energy Systems, Including Solar Hot Water (Residential, Commercial, and Industrial)
- ❑ RCI-4: Energy Management Training/Training of Building Operators
- ❑ RCI-5: Incentives, Resources, and Regulatory Reform To Promote Energy Recycling, Including Combined Heat and Power
- ❑ RCI-6: Incentives and Policies for Improving Building and Appliance Efficiency, Including Building Energy Codes
- ❑ RCI-7: Improved Design and Construction in New and Existing State and Local Government Buildings, “Government Lead by Example”
- ❑ RCI-8: Participation in Voluntary Industry-Government Partnerships (Including Incentives)
- ❑ RCI-9: Incentives and Policies for Improving Appliance Efficiency, Including Appliance Standards

Transportation & Land Use

- ❑ TLU-1: Adopt California Clean Car Standards
- ❑ TLU-2: Transportation System Management
- ❑ TLU-3: Tax Credits for Efficient Vehicles
- ❑ TLU-4: Improve Development Patterns
- ❑ TLU-5: Transit & Bike-Pedestrian
- ❑ TLU-6: Alternative Fuel Infrastructure
- ❑ TLU-7: Diesel Engine Emission Reductions and Fuel Efficiency Improvements
- ❑ TLU-8: Stricter Enforcement of Speed Limits
- ❑ TLU-9: Make Full Use of CMAQ Funds
- ❑ TLU-10: Commuter Choice
- ❑ TLU-11: Explore Available Resources for Funding Road Maintenance and Mass Transportation
- ❑ TLU-12: Low-GHG Fuel Standard
- ❑ TLU-13: Freight Vehicle Technology Improvements
- ❑ TLU-14: Rail

Cross-Cutting Issues

- ❑ CC-1: Inventories and Forecasting
- ❑ CC-2: GHG Reporting and Registry
- ❑ CC-3: Statewide GHG Reduction Goals and Targets
- ❑ CC-4: State Government GHG Emissions (Lead-by-Example)
- ❑ CC-5: Comprehensive Local Government Climate Action Plans (Counties, Cities, etc.)
- ❑ CC-6: Public Education and Outreach
- ❑ CC-8: Adaptation & Vulnerability

CECAC Actions

Draft Cumulative Results

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Sector	2012 MMtCO₂e	2020 MMtCO₂e	2008-2020 MMtCO₂e	Million\$ NPV 2008-2020	\$/MTCO₂e
RCI (Fuels; Non-Electric)	4.8	28.7	149.5	-\$2,610	-\$17
ES (Includes Adjustments for Overlaps with RCI)	1.4	21.3	89.3	\$3,595	\$40
TLU	0.86	5.95	27.20	-\$520	-\$19
AFW	8.75	20.07	146.75	\$5,108	\$35
CC					
Total	15.9	76.0	412.7	\$5,573	\$14

Negative values in the Net Present Value (NPV) and the Cost-Effectiveness (\$/MTCO₂e) columns represent net cost savings.

CECAC Actions

Draft Results – Gross Emissions

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Consumption Basis - Gross Emissions								
	1990	1995	2000	2005	2010	2012	2015	2020
Projected GHG Emissions	67.0	72.1	87.7	93.3	102.1	106.8	112.4	125.3
Reductions from Existing Actions				0.0	0.2	0.6	1.3	3.5
Projected GHG Emissions After Existing Actions				93.3	101.9	106.2	111.1	121.7
Total GHG Reductions from CECAC Policies						15.9	38.4	76.0
Projected Emissions After Quantified CECAC Reductions						90.9	75.3	49.2
Production Basis - Gross Emissions								
	1990	1995	2000	2005	2010	2012	2015	2020
Projected GHG Emissions	63.7	69.0	83.3	88.3	97.6	101.3	107.5	118.9
Reductions from Existing Actions				0.0	0.2	0.6	1.3	3.5
Projected GHG Emissions After Existing Actions				88.3	97.4	100.6	106.2	115.4
Total GHG Reductions from CECAC Policies						15.9	38.4	76.0
Projected Emissions After Quantified CECAC Reductions						85.4	69.5	42.9

Next Steps

- Final CECAC meetings : April 4 and May 9
- Issue report in June 2008.
- Presentations to Governor, Legislature and the public.
- Implementation.
- Interface with new federal policy?

Other South Carolina Initiatives

- ❑ The cities of Columbia, Charleston, Greenville, Sumter, Rock Hill and Clemson have signed the *U.S. Mayors' Climate Protection Agreement*.
- ❑ All participating cities have made a commitment to reduce greenhouse gases by developing and implementing climate action plans and smart energy solutions to save money and build a cleaner, safer future.

Other South Carolina Initiatives

❑ State Green House Gas Reporting and Registry

❑ Renewable Energy

- ❑ Green power purchases and marketing
 - Santee Cooper Green Power
 - Palmetto Clean Energy (PaCE) for investor owned utilities
- ❑ Renewable Energy Grants and Loans
- ❑ Solar Incentives
- ❑ In-State Liquid Biofuels Production
- ❑ In-State Biomass for Electricity, Heat, or Steam Production
- ❑ Research and Development

Other South Carolina Initiatives

❑ **Utility Interconnection and Net Metering**

- ❑ Interconnection
- ❑ Net Metering

❑ **Green Building Initiatives**

- ❑ Green Building Programs
- ❑ Legislative Initiatives

❑ **Other Energy Efficiency Activities**

- ❑ Energy Efficiency Initiatives - Utilities
- ❑ Energy Efficiency Legislation
- ❑ Participation in Voluntary Industry–Government Partnerships
- ❑ Performance Contracting

Other South Carolina Initiatives

❑ **Transportation**

- ❑ Tax Credits for Efficient Vehicles
- ❑ Truck-Stop Electrification
- ❑ Anti-Idling Legislation

❑ **Land Conservation and Management**

- ❑ Soil Carbon Management (Agriculture)
- ❑ Truck-Stop Electrification

❑ **Land Conservation and Management**

- ❑ Soil Carbon Management (Agriculture)
- ❑ Forest Management
- ❑ Land Conservation

❑ **Land Use Issues**

- ❑ Priority Investment Act (“PIA”) - S266 became law on May 23, 2007

Conclusion

- ❑ CECAC is a diverse group of stakeholders charged with balancing goals of reductions in greenhouse gas emissions, economic growth and sound energy policy.
- ❑ Benefits of the recommendations should include energy cost savings across all sectors, greater energy independence, economic growth, and contribution to the worldwide effort to reduce greenhouse gas emissions.
- ❑ Local governments are also developing climate action plans.
- ❑ Next challenge will be implementation at state and local level.

The End.

