

**NORTH CAROLINA CLIMATE PLAN -  
DRAFT CONSOLIDATED CAPAG OPTIONS**

<b>ACTION PLAN AREA</b>	<b>COMPONENT ACTIONS</b>	<b>ESTIMATED OUTCOMES</b>	<b>IMPLEMENTATION NOTES</b>
<b>1. Heat and Power</b> (Energy Supply and Demand in the Residential, Commercial, Industrial Sectors)			
<b>a. Energy Efficiency &amp; Conservation</b>	<ul style="list-style-type: none"> <li>• Demand-Side Management Programs for the Residential, Commercial and Industrial Sectors (RCI-1)</li> <li>• Expansion of Energy Efficiency Funds (RCI-2, ES-7)</li> <li>• Market Transformation and Technology Development Program (RCI-4)</li> <li>• Improved Appliance and Equipment Efficiency Standards (RCI-5)</li> </ul>	<ul style="list-style-type: none"> <li>• 23.5% of 2020 annual CAPAG reductions</li> <li>• -\$24/ton GHG removed</li> <li>• \$4.4 billion total NPV savings 2007-2020</li> <li>• Energy savings: Approximately 34,000 GWh per year and 59,000 Billion Btu of natural gas per year by 2020</li> </ul>	Legislative support is needed to offer incentives for investments—for example, through tax credits and/or loan guarantee programs--in energy efficiency and in customer-sited renewable energy, to support, and mandate where needed, updating appliance, equipment, and building energy codes, and to support aggressive and effective utility demand-side management programs.

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	<ul style="list-style-type: none"> <li>• Building Energy Codes (RCI-6)</li> <li>• “Beyond Code” Building Design Incentives and Targets, Incorporating Local Building Materials and Advanced Construction, and Bulk Purchasing Programs for Energy Efficiency or Other Equipment (RCI-7)</li> <li>• Residential, Commercial, and Industrial Energy and Emissions Technical Assistance and Recommended Measure Implementation (RCI-11)</li> </ul>		
<p><b>b. Clean and Renewable Energy Supply</b></p>	<ul style="list-style-type: none"> <li>• Incentives for centralized renewables (ES-1)</li> <li>• Environmental performance standard; renewable energy generation target only (ES-2b)</li> <li>• Cap-and-trade; electric</li> </ul>	<ul style="list-style-type: none"> <li>• 20.4 % of 2020 annual CAPAG reductions</li> <li>• \$19.5/ton GHG removed</li> <li>• \$3,263 million total NPV cost 2007-2020</li> <li>• Renewable energy: Approximately 20,709</li> </ul>	<p>Legislative support is needed to offer incentives to augment centralized renewable generation from utility/non-utility generators and procurement of greenpower; support for a transition in the way coal is used in NC for electric power production, and</p>

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	<p>sector only (ES-4a)</p> <ul style="list-style-type: none"> <li>• Aligning environmental and profit incentives (ES-5)</li> <li>• Integrated gasification combined cycle with/without carbon capture and storage - replacement of new 800 MW coal unit (ES-6a)</li> <li>• Waste to Energy (ES-8)</li> <li>• Green Power Purchasing (required for state facilities (RCI-9, ES-10)</li> <li>• Distributed Renewable and Clean Fossil Fuel Power Generation (RCI-10, ES-3, ES-9)</li> <li>• Expanded Use of Forest Biomass &amp; Better Forest Management (AFW-9&amp;10)</li> <li>• Ag Biomass Feedstocks for Electricity/Steam</li> </ul>	<p>GWh of incremental renewable generation by 2020</p>	<p>rules for a state-level cap-and-trade system.</p>

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	Production (AFW-5)		
<b>2. Transportation &amp; Land Use</b>  (Energy Supply, Demand and Other Actions in the Transport Sector)			
<b>a. Efficiency</b>	<u>Location efficiency</u> <ul style="list-style-type: none"> <li>• Land Development Planning (TLU-1a)</li> <li>• Surcharges to Raise Revenue (TLU-3a)</li> <li>• Rebates/ “Feebates” to Change Fleet Mix (TLU-3b)</li> <li>• Pay-As-You Drive Insurance (TLU-11)</li> <li>• Multi-Modal Transportation and Promotion (formerly TLU-2) (TLU-1b)</li> </ul> <u>Vehicle operations</u> <ul style="list-style-type: none"> <li>• Tailpipe GHG Standards</li> </ul>	<u>Location efficiency</u> <ul style="list-style-type: none"> <li>• 17.9% of 2020 CAPAG annual Reductions</li> <li>• Net savings/ton GHG removed</li> <li>• At least \$3,100 million NPV savings 2007-2020</li> </ul> <u>Vehicle operations improvements</u> <ul style="list-style-type: none"> <li>• 8.8% 2020 CAPAG annual Reductions</li> <li>• -\$38/ton GHG removed</li> <li>• \$-1,690 million NPV savings 2007-2020</li> </ul>	Tax: “Surcharges to Raise Revenue” funds a substantial Transportation Demand Management program, which in turn produces important emissions reductions and infrastructure savings. The surcharge is small but important.  Requirement: Local jurisdictions are required to plan. Outcome of planning is not set. Enforcement mechanism not identified.  Requirement: Tailpipe GHG standards.

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	(California Clean Car) (TLU-5) <ul style="list-style-type: none"> <li>• Idle Reduction, Elimination Policies (TLU-4, 8)</li> <li>• Truckstop Electrification (TLU-4)</li> <li>• Diesel Retrofits (TLU-9)</li> <li>• Advanced Technology Incentives (TLU-12)</li> </ul>		
<b>b. Clean &amp; Renewable Fuels</b>	<ul style="list-style-type: none"> <li>• Biofuels Bundle (TLU-6, 7, 13)</li> <li>• Procure Efficient Fleets (TLU-7)</li> <li>• Buses – Clean Fuels (TLU-13)</li> <li>• Biodiesel Production (AFW-2)</li> <li>• Ethanol Production (AFW-6)</li> </ul>	<ul style="list-style-type: none"> <li>• 10.2% of 2020 annual CAPAG Reductions</li> <li>• \$10/ton GHG removed.*</li> <li>• \$486 million total NPV cost 2007-2020.*</li> <li>• Net Energy Savings: Assumed zero net energy, as energy created displaces energy saved.</li> </ul> *Does not include TLU 6,7, 13.	Spending: Funding for state farmland preservation programs, Spending: Increase funding for Agricultural Development and Farmland Preservation Trust Fund. Requirement: Establish afforestation task force to advise NCDFR regarding enhanced FDP.
<b>3. Farm &amp; Forest Conservation</b>			

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<p><b>Land Protection &amp; Conservation Practices</b></p>	<ul style="list-style-type: none"> <li>• AFW-4a (Preservation of Ag Lands)</li> <li>• AFW-4b (Preservation of Forested Lands)</li> <li>• AFW-8 (Afforestation and/or Restoration of Nonforested Lands)</li> <li>• AFW-13 (Urban Forestry)</li> <li>• AFW-3 (Soil Carbon Management, including organic production methods incentives)</li> </ul>	<ul style="list-style-type: none"> <li>• 9.7% of 2020 annual CAPAG Reductions</li> <li>• \$2/ton GHG removed</li> <li>• \$138 million total NPV cost 2007-2020</li> <li>• Net Energy Savings: 34,274 billion BTU.*</li> </ul> <p>*Does not include AFW-3</p>	<p>Spending: Funding for state farmland preservation programs,</p> <p>Spending: Increase funding for Agricultural Development and Farmland Preservation Trust Fund.</p> <p>Requirement: Establish afforestation task force to advise NCDNR regarding enhanced FDP.</p>
<p><b>4. Waste Conservation</b></p>			
<p><b>Recovery &amp; Recycling</b></p>	<ul style="list-style-type: none"> <li>• Increased Recycling Infrastructure and Collection (AFW-12)</li> <li>• Manure Digesters &amp; Energy Utilization (AFW-1)</li> <li>• Landfill Methane &amp; Biogas Energy Programs (AFW-11)</li> </ul>	<ul style="list-style-type: none"> <li>• 3.5% of 2020 CAPAG annual 2020 reductions</li> <li>• \$9/ton GHG Removed</li> <li>• \$274 million total NPV cost 2007-2020</li> <li>• Energy Savings: 26,668 billion BTU</li> </ul>	

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<b>5. State &amp; Local Government</b>			
<b>a. Information, Education &amp; Outreach</b>	<ul style="list-style-type: none"> <li>• State Climate Public Education and Outreach (CC-4)</li> <li>• Education (Consumer, Primary/Secondary, Post-Secondary/ Specialist, College and University Programs) (RCI-8)</li> </ul>	<ul style="list-style-type: none"> <li>• Not quantified</li> </ul>	<p>CC-4: Additional staff and/or funding may be necessary depending on the extent of the public education and outreach effort.</p> <p>RCI-8: Legislative support needed to develop and provide consistent funding for education and professional training programs at all levels, as well as to set professional training requirements in key sectors.</p>
<b>b. Planning &amp; Capacity Building</b>	<ul style="list-style-type: none"> <li>• GHG Inventories and Forecasts (CC-1)</li> <li>• State Greenhouse Gas Reporting (CC-2)</li> <li>• State Greenhouse Gas Registry (CC-3)</li> <li>• GHG Goals or Targets (CC-6)</li> </ul>	<ul style="list-style-type: none"> <li>• Not quantified</li> </ul>	

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<b>6. Adaptation</b>			
<b>Planning &amp; Research</b>	<ul style="list-style-type: none"> <li>State Climate Change Adaptation Strategy (CC-5)</li> </ul>	<ul style="list-style-type: none"> <li>Not quantified</li> </ul>	Funding to support development, analysis and implementation of the Plan.