

Efforts Underway in N. C. to Deal with Climate Change

North Carolina Sustainable Energy Conference

Raleigh, North Carolina

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NORTH CAROLINA
DIVISION OF AIR QUALITY

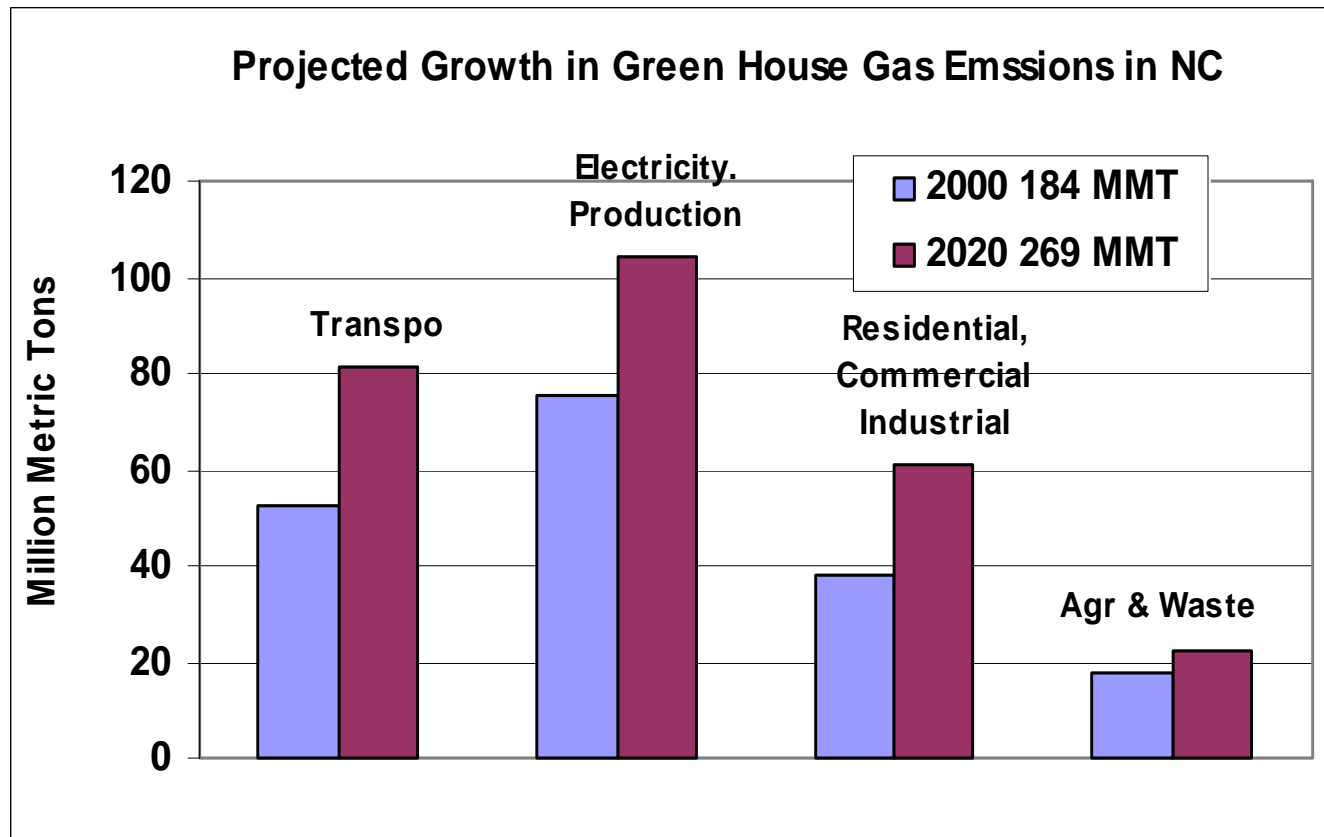


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Division of Air Quality

North Carolina has a significant Greenhouse Gas Signature

- **9+ Million Citizens (~13M in 2030)**
- **3.4 million Homes (~ 5 M in 2030)**
- **7 million Cars and Trucks (~10 M in 2030)**
- **Commercial, Industrial, and Institutional Heated and Cooled Spaces (Growing Daily)**
- **14 Coal Fired power Plants (today)**
- **40 Combustion Turbines (today)**
- **Growth increases Electricity Demands**

Green House Gas Emissions in North Carolina



Major Activities

- ***CAPAG – Climate Action Plan Advisory Group***
 - *DENR Initiated*
 - *Derived from Clean Smokestacks Act*
 - *Focus on Mitigation Options*
- ***LCGCC – Legislative Commission on Global Climate Change***
 - *Legislature Initiated 2005*
 - *Goal for Reduction in GHG*
 - *Mitigation Options*
- ***The Climate Registry***
 - *NC is “Charter” Member*
 - *DENR is a “Founding” Reporter*

Purpose & Goals of CAPAG

■ *Develop Climate Action Plan Recommendations*

- *Range of individual mitigation actions*
- *Benefits and Costs Analysis*
 - *GHG Emissions Reduced*
 - *Cost / Benefit Determined*
 - *Jobs Potential Estimated*
- *Consensus of Stakeholders*
- *Support Commission on Global Climate Change*

Background

- – **CSA CO₂ Reports – September 2005**
- **Science of Global Warming in CSA – Not an Issue to Decide; Look at Options to Reduce**
- **CO₂ Specified in CSA, but Assumed to be Inclusive of all GHG (Basically, Adds Methane, N₂O, and Other but “Less Common” Gases)**
- **CSA Directed Toward Coal-fired Power Plants, but Effort Conducted in Context of all Types and Sources of GHG – 6 Species / Stationary and Mobile**

How Does The CAPAG Effort Relate to the Legislative Climate Change Commission?

- **Complements and Supports Legislative Commission**
- **Technical Support and Knowledge on GHG Reductions to Include Costs and Benefits**
- **Several LCGCC members on CAPAG and Technical Workgroups (TWGs)**

Mitigation Option Sectors / TWGs

- **Agriculture, Forestry and Waste Management**
- **Energy Supply**
- **Residential, Commercial, Industrial Energy Use**
- **Transportation and Land Use**
- **Cross Cutting**

LCGCC

- *Established by Legislature in 2005*
- *Impacts of Climate Change on NC*
- *Need for Goal of GHG Reductions in NC?*
- *If Need Determined; What Should Goal Be?*
- *What Actions Should be Taken to Deal With Issue?*
- *34 Members; 18 Legislators – Others Broad Cross Section of Stakeholders*
- *Interim Report – Early 2007*
- *Final Report April 15, 2008*

CAPAG Recommendations

- **Residential, Commercial, Industrial (RCI):**
 - Demand Side Mgt. Programs – “Top-Ten states” EE Investment
 - Expand Energy Efficiency Funds
 - EE Requirements for Government Buildings
 - Market Transformation and Technology Development
 - Improved Appliance and Equipment Efficiency Standards
 - Building Energy Codes
 - “Beyond Code” Building Design Incentives and Targets
 - Education (Consumer, Primary/Secondary, Post-Secondary/Specialist, College and University Programs)
 - Green Power and Bulk Power Purchasing
 - Distributed Renewables and Clean Fossil Fuel Power Generation
 - Residential, Commercial and Industrial Energy and Emissions Technical assistance and Recommended Measure Implementation

CAPAG Recommendations

■ Energy Supply, (ES):

- Renewable energy Incentives
- REPS (In Principle)
- Removing Barriers to Combined Heat and Power (CHP) and Distributed Generation (DG)
- CO2 Tax and / or Cap and Trade
- Legislative Changes to Address Environmental and Other Factors
- Incentives for Advanced Coal
- Public Benefits Charge
- Waste to Energy
- Incentives for CHP and Clean DG
- NC Green Power Renewable Resources Program

CAPAG Recommendations

- **Transportation and Land Use (TLU)**
 - Land Development Planning
 - Multi-Modal Transportation and Promotion
 - Surcharges, Rebates / Feebates to Raise Revenue
 - Truck Anti-Idling
 - Tail Pipe Standards; e.g. “Pavley”
 - Increase use of Bio-Fuels
 - Procure Efficient Fleets
 - Diesel Retrofits
 - Pay as You Drive Insurance
 - Advanced Technology Incentives

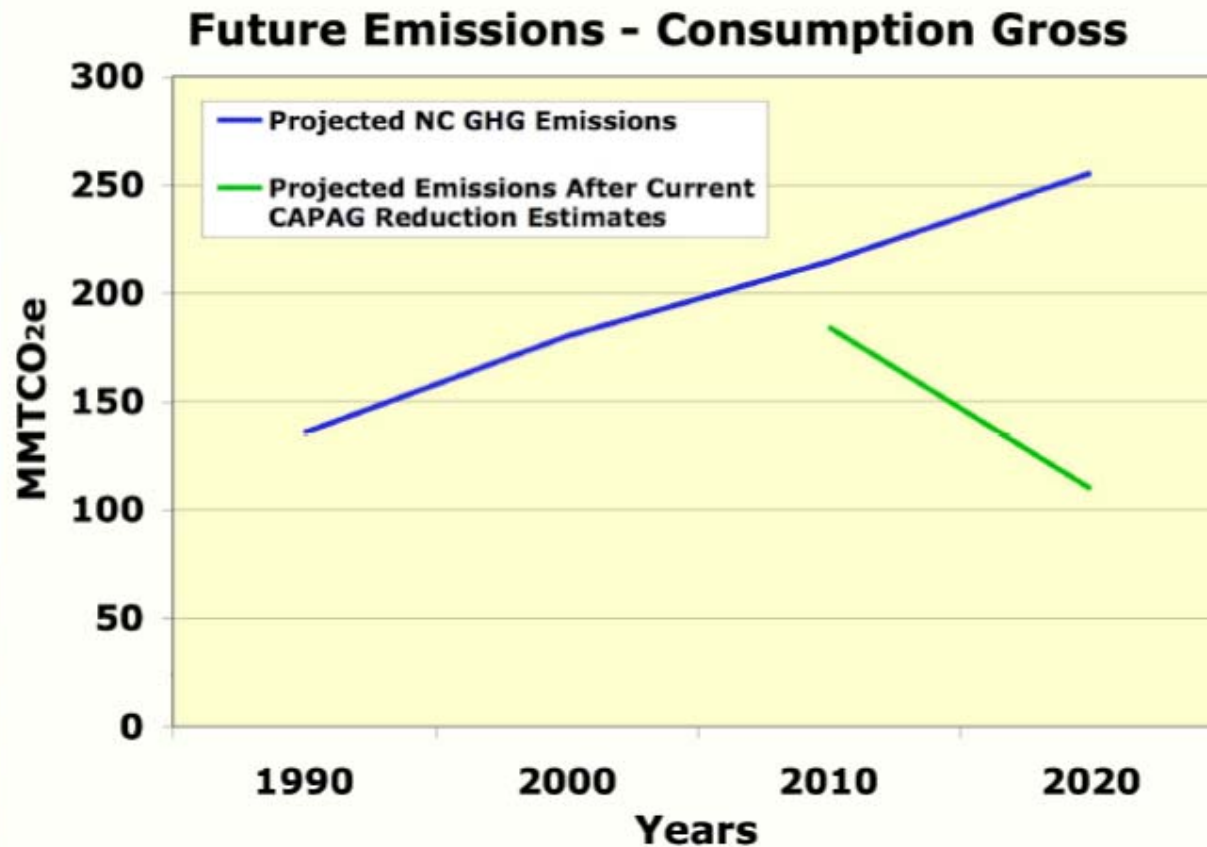
CAPAG Recommendations

- **Agriculture, Forestry and Waste Management**
 - Manure Digesters & Energy Utilization
 - Bio-diesel Production
 - Soil Carbon Management
 - Preservation of Working Land; Ag & Forestry
 - Landfill Methane and Biogas Energy
 - Ag Biomass Feed stocks for Electricity or Steam Production
 - Policies to Promote Ethanol Production
 - Afforestation or Restoration of Non-forested Land
 - Expanded Use of Forest Biomass & Better Forest Management
 - Landfill Methane and Biogas Energy Programs
 - Increase Recycling Infrastructure and Collection
 - Urban Forestry Measures

CAPAG Recommendations

- **Cross Cutting (CC):**
 - **GHG Inventories and Forecasts**
 - **GHG Reporting**
 - **GHG Registry**
 - **Public Education and Outreach**
 - **Adaptation**

Effect of Suite of CAPAG Mitigation Options



Legislation Related to CAPAG Options

- **SB 3 – REPS, Promote Renewable Energy / Energy Efficiency**
- **SB 567 – Allow distribution of E-Blended Fuels**
- **SB 1272 - Definition of Biodiesel**
- **SB 1277 – State Diesel Vehicles, warranties / B20 Fuel**
- **SB 1452 – Diesel School Buses to Use Minimum B20**
- **SB 668 – Energy Conservation in State Buildings**
- **SB 670 – Use of Solar Collectors on Detached Single Family Residences**

SB 3, Renewable / Energy Efficiency Portfolio Standard - REPS

- **10 % X '18**
 - 3 X '12
 - 6 X '15
 - 12.5 x '21 (RE min. stays at 7.5 %)
- **Up to 25% of RPS Requirement Can be Met by EE**
- **Min 0.2% by Solar**
- **Min 0.2% by Biomass Resources**
- **Poultry Waste - 900,00 MWhr by 2014**
- **BACT for Bio-Waste Sources**
- **Cost Recovery Provisions**
- **Cost Escape Provision - \$10 '08-'11 to \$34 '15+**
- **Utilities Commission Primary Implementing Agency**
- **Revised Process for Cost Recovery on Base Load**

What is a Renewable Resource in SB 3?

- *Solar*
- *Wind*
- *Hydropower*
- *Geothermal*
- *Ocean Current or Wave Energy Resource*
- *Biomass – Ag, Animal, Wood, Residues, Liquids, Gases, Energy Crops, Landfill Methane*
- *Waste Heat from Industrial Manufacturing*
- *Hydrogen Derived from a Renewable Energy Source*
- *“Renewable Energy Resource” Does NOT Include Fossil or Nuclear Energy*

The Climate Registry

- **The largest climate initiative in North America**
 - States representing over 80% of U.S. population involved, along with Canadian provinces, Mexican states and Indian tribes
- **Its about precise accurate emissions measurement / calculation and documentation**
- **Critical first step to address climate change**
 - European example-why this process is important
- **Organizations are being invited to participate in founding this important program**

■ = Registry member as of March 31, 2008



Background of the Climate Registry

- **Founded by discussions among states that had established or were interested in establishing state or regional GHG registries.**
- **States were considering a variety of policies to reduce GHG emissions and an effective mechanism to track was the first step.**
- **Incorporated in March 2007 in Washington, D.C. as a non-profit organization**
- **Currently seeking organizations to be founding reporters if submit “Statement of Intent” to report by May 1,**

Key Principles of the Climate Registry

- A common accounting standard and infrastructure to support state policies
- Policy neutral—leave policy to the states
- The recognized platform for credible and consistent GHG emissions reporting in North America across borders and industry sectors
- Independent third-party verification
- Public reporting while respecting business confidentiality

Benefits for organizations to report to the Climate Registry

- 1. A cost effective means to calculate / measure and document GHG emissions**
- 2. Document early actions for state or federal recognition**
- 3. Prepare for potential regulation**
- 4. Education for employees on GHG emissions**
- 5. Save money on energy**
- 6. Access to software and technical support**
- 7. Recognition as a global environmental leader**

Value to states / tribes / provinces

- **Create accounting infrastructure to support their GHG policies**
- **Cost effective—build on what is established**
- **Collaborate with other jurisdictions**
- **A voice in establishing national standards**
- **Help companies to establish a baseline and demonstrate reductions**

Three Step Process

1. Gather data annually, input into web-based software
 - All 6 Kyoto gases (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆)
 - Direct: stationary, mobile, process and fugitive
 - Indirect: electricity and steam
 - Tracking mostly through utility bills and vehicle fuel
2. Verify data using third-party verifiers
3. Report bottom line data publicly

Costs of Participation

**Annual Participation
Fee**

Annual Verification Fee

Staff time

How to participate

- **Submit signed Statement of Intent**
- **Pay fee when billed**
- **National recognition as a founding Reporter — if signed up by May 1, 2008**
- **Actual reporting does not start until 2008/09**

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