

The banner features a collage of North Carolina scenes: a waterfall, a river, a golf course, and a city skyline. The text "North Carolina" is in red script, and "Climate Action Plan Advisory Group" is in large blue block letters.

North Carolina Climate Action Plan Advisory Group

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To: Energy Supply Technical Working Group
From: Bill Dougherty, Sivan Kartha
CC: Kim Garnett, Jim Southerland, Tom Peterson
Date: 15 January 2007
RE: Overview of Issues and Assumptions for the Estimation of GHG Emission Reductions from Energy Supply Options ES-4 (Cap GHG and trade) and ES-5 (Aligning environmental and profit incentives)

This memo addresses the specific analytical issues associated with the remaining two options to be analyzed in advance of the upcoming CAPAG meeting on 24 January 2007. Any specific instructions received during the last CAPAG meeting held on 12 October 2006 will also be included.

ES-4: CO2 tax and/or cap-and-trade (including covering sources including fossil, renewable, and nuclear on life-cycle basis)

Comments from CAPAG meeting on 12 October 2006

Based on comments received at the 12 October CAPAG, the following will be considered in the analysis:

- ❑ Address electric sector first; in a second stage assess feasibility of an economy-wide system;
- ❑ Address agriculture and forestry in the cap and trade system.

Quantification Methods and Key Assumptions

- **Quantification Methods:** A parameterization approach will be used to assess this policy. This is due to the fact that the analysis of a cap and trade system in North Carolina would be highly complex involving sophisticated modeling techniques and difficult to do well given time and resource constraints. The parameterization techniques will involve the downscaling of results of the GHG cap-and-trade study done by the Energy Information Administration (EIA) in a Congressional Service Report from March 2006 entitled "*Energy Market Impacts of Alternative Greenhouse Gas Intensity Reduction Goals*" based on the use of the National Energy Modeling system model (NEMS) based on the Annual Energy Outlook of 2006. This is an updated analysis of an earlier EIA report entitled: "*Impacts of Modeled Recommendations of the National Commission on Energy Policy*" dated April 2005 which had been prepared by the EIA using the Annual Energy Outlook of 2005 in response to a request from Senator Jeff Bingaman, ranking Minority Member of the U.S. Senate

Committee on Energy and Natural Resources, to assess the impact of, among others, a GHG cap-and-trade policy for the USA.

- **Key Assumptions:** The EIA study is a national study, which can be downscaled for application to NC using parameterization techniques.
- **Action item:** TWG members are requested to submit any input/feedback to the CCS facilitators by 17 January 2007.

ES-5: Aligning Environmental and Profit Incentives through Electric Sector Regulatory/Rate Reform

Comments from CAPAG meeting on 12 October 2006

Based on comments received at the 12 October CAPAG, the following will be considered in the analysis:

- The TWG should make an effort to quantify this option using parameterization techniques.

Quantification Methods and Key Assumptions

- **Key Underling Issue to be Resolved:** Specific advice is needed from the TWG on the approach to quantify this option because the Catalog of Energy Supply options states that “...This mitigation option will *not* be quantified in the analysis phase, as it is too early in the process to assign goal levels. Instead, the emphasis during the analysis phase will be to define the details of a prospective rate reform program. After this process, it may be possible to assign goal levels in some future initiative...” [see <http://www.ncclimatechange.us/ewebeditpro/items/O120F9528.pdf>; *bolded italics, CCS*]

Hence, it appears that the aim of the CAPAG was for the TWG to undertake the analysis of this option without first assigning goal levels. On the other hand, it appears that the aim of the ES TWG is to forego analysis in lieu of defining the details of a prospective rate reform program for NC.

To resolve this apparent divergence in approach, some of the options that the ES TWG may wish to consider are outlined below:

- *Option #1:* Undertake an analysis of this option as per the direction provided by the CAPAG by assuming a range of goal levels for one or more of the measures for aligning environmental and profit incentives.
 - *Option #2:* Do not undertake an analysis of this option. Instead, focus on the development of a narrative description of a prospective rate reform program for NC.
 - *Option #3:* Do not undertake an analysis of this option. Instead, list the option as “non-quantifiable” but with a potentially large GHG reduction potential at this stage of the process.
- **Quantification Methods:** TBD.
 - **Key Assumptions:** TBD.

- **Action item:** Specific advice is needed from the TWG before proceeding. Given the need for discussion in order to come up with a range of goal levels (Option #1) and the non-quantified nature of a narrative description (Option #2), the proposed default is Option #3. TWG members are requested to submit their input to the CCS facilitators by 17 January 2007 if they wish other than the default be considered.