

MEMORANDUM

To: Regional Greenhouse Gas Initiative Agency Executives

From: Members of the Modeling Analysis Subgroup,
as Led by Representatives from New York

Date: January 16, 2004

Re: Update on Subgroup Activities and Next Steps

This memorandum describes the efforts of the Modeling Analysis Subgroup since the Subgroup was formed in November, 2003. Set out below first is the Subgroup's assigned task as established by the Staff Working Group. Second, we briefly describe the Subgroup's accomplishments to date. Lastly, we explain the Subgroups next steps.

The Task

The Staff Working Group tasked the Modeling Analysis Subgroup with designing and implementing a modeling plan to quantitatively estimate the incremental impacts of a regional carbon cap for the region within each state. Specifically, the subgroup will: (A) recommend an approach for conducting appropriate modeling and analysis; (B) implement that approach; and (C) report and interpret the results.

Accomplishments

The Subgroup has developed a set of requirements and critical outputs for the modeling exercises.¹ To meet these requirements, the Subgroup is presently evaluating a number of models for potential use in the modeling analysis.

¹The model requirements and critical outputs are attached, together with the model matrix developed by the Subgroup for evaluating the various available models.

Next Steps

The Subgroup will focus its future efforts on the following tasks:

1. Complete Modeling Plan. The Subgroup will complete a detailed modeling plan that: (a) establishes what model or models will be utilized; (b) how and by whom the modeling tasks will be accomplished; and (c) includes a schedule that yields first run outputs by August 31, 2004. The proposed modeling plan shall be completed by February 29, 2004.
2. Develop Model Inputs. The Subgroup will work closely with the Technical Data & Analysis Subgroup and the Staff Working Group to develop necessary model inputs, base case and potential caps for modeling. The Subgroup will also work with the Stakeholder Process Subgroup to ensure appropriate stakeholder input on the modeling effort.

Requirements for Modeling Analysis

Model Requirements. The chosen model or models should:

- (1) be able to produce a detailed analysis of electricity sector carbon cap;
- (2) have high credibility and acceptance;
- (3) be technically and politically defensible;
- (4) accurately simulate regional electricity system, including transmission constraint;
- (5) optimize new resources, retirements, re-powering, etc.;
- (6) analyze energy efficiency actions as an integrated resource;
- (7) incorporate a ready-to-use detailed data base of electricity system;
- (8) incorporate a detailed new technology data base;
- (9) be familiar to experienced users in Northeast states;
- (10) be reasonably priced;
- (11) require a reasonably short lead time to develop data base and capability;
- (12) pose reasonable burden on RGGI participants' staff;
- (13) include or be linked with a macroeconomic model; and
- (14) either model other sectors, or produce results that can be later integrated with another model.

Critical Model Outputs. Critical model outputs include the incremental impact on:

- (1) carbon emissions;
- (2) emission co-benefits;
- (3) wholesale electricity prices;
- (4) fuel use mix;
- (5) change in energy imports and exports;
- (6) costs of total energy resources (including energy efficiency actions);
- (7) costs to ratepayers;
- (8) impacts on generator owners;
- (9) reliability of electric system; and
- (10) change in disposable income due to energy price changes, energy savings, etc.