



**MARYLAND COMMISSION ON CLIMATE CHANGE:
GREENHOUSE GAS AND CARBON MITIGATION WORK GROUP
Energy Supply Technical Work Group
Summary of Teleconference Meeting, Call #10
February 5, 2008**

Attendance List:

MD MIT Energy Supply TWG Members:

Frank Heintz, Eric Coffman, Brad Heavner, Misty Allen, Lise Van Susteren

State of Maryland:

Elizabeth Entwisle

CCS:

Jeff Wennberg, Donna Boysen, Bill Dougherty, John Warmerdam, Adam Rose, Dan Wei

Public:

Jeff King, Jonathan Kapiloff

Jeff Wennberg called the meeting to order and called the roll.

The Call #9 summary was approved.

Donna Boysen began the review of the quantification of policy options 1,4,7,8, and 10. Donna explained that originally ES-5 was assumed to be analyzed in the RCI TWG, but that base on a call held yesterday the analysis will now be done in ES. This work will have to be performed and brought to the committee in a future call.

John Warmerdam offered a summary of the analysis to date. He said the biggest reductions were in ES-7, the Renewable Portfolio Standard, and ES-8, Repowering Plants. Together they reduced 150 million tons by 2025 (cumulative). As a rule the other options are less dramatic and more costly.

ES-1

Brad Heavner asked for a discussion about ES-1. John said that the Tier 1 renewable production was increased at 0.1% per year, with all increased generation assumed to be replacing coal. The renewable mix assumptions are found on lines 18-22 of the ES-1 spreadsheet. He said that there were likely to be overlaps in the analysis and that these would be scrubbed out in the next step.

Brad asked about the value of each strategy and the source of assumptions regarding offshore wind costs. John said it was the EIS database. Brad recommended that John look at data from Delaware concerning Blue Water Wind. He recommended that Bill Dougherty and John check with them, and gave them a name and contact number.

ES-7

John then went to ES-7, the RPS. He said he had used a \$3.40 Mbtu/ton cost assumption for biomass co firing of coal plants. He indicated that the constraint was the supply of biomass and said there was enough for one or two 600 MW coal plants. He said that relative to the other options this was the greatest reduction at the lowest cost.

There was a discussion about the hydro assumptions in ES-7. John explained that the hydro in the RPS did not include the existing plants, only new. He said that small hydro did not amount to very much at all. Brad questioned what the total contribution was in the end and John said 20%. Frank Heintz said he doubted that there was a great deal of potential for new hydro and suggested that John's assumptions were realistic. Brad expressed concern that the MEA is seeking to remove existing hydro and perhaps this was a good way to keep it. Brad said he would double check the law and the MEA proposal to confirm that they were consistent with the assumptions and forward that to John.

ES-8

John said ES-8 was split into two components; biomass and repowering. Biomass is the lower benefit but at very low cost. Repowering coal plants with natural gas is very expensive. Biomass co firing was assumed to be at 8%, applied to 80% of the plants, while the remaining 20% were assumed to be repowered. Frank asked about the supply constraint on biomass. John indicated that it was supply that was driving the assumption of 8%. Eric Coffman urged the use of conservative assumptions on biomass availability. He asked about the cost of transport. John said that the report from which he was getting his data assumed a 25-mile radius around each plant as the limit of cost-effective transport.

ES-4

John indicated that this option (CCSR – Carbon Capture, Storage and Reuse) could have a very large reduction but at a very high cost. Technology was 'on the way' but with large uncertainty, which has produced a price range of \$40 - \$72 /ton.

ES-10

The Generation Portfolio Standard is designed in such a way (at 1700 lbs CO₂ per MW-hour) that the current generation mix achieves the standard. As a result, no reductions can be assumed. Brad said he thought this was a defensive policy, that is, it would serve as a backstop against backsliding. He mentioned the concern for large imports from West Virginia. John stated that even with large imports in the future the standard would be met. Brad suggested it could be redesigned to apply to any increase in imports and new in-state generation would have to meet the 1700 lbs/MWh. Frank asked for information about what percent of new units would find 1700 pounds as a challenge.

C&T Modeling

Jeff rechecked attendance and introduced Adam Rose and Dan Wei who then walked through the cap and trade modeling. Adam gave an overview of the history of the model and its recent use in RGGI and individual states and other regions. He explained that the cap and trade approach typically saved 10-15% of the overall cost of compliance compared to a traditional source-by-source approach. He explained the marginal cost curves and described the variables the committee could manipulate to refine their policy design. Adam showed several slides from Minnesota to illustrate the model outputs.

Public Comment

Jonathan Kapiloff restated his support for high altitude wind technology and repeated his email for committee members to contact him with questions.

Next Steps

Jeff summed up the next steps:

- Donna's team needed to work on ES-5
- They needed to send out an update of ES-8
- The summary table needed to be completed
- A review of the Inventory and Forecast was needed

Jeff said the next two calls were scheduled for February 26 and March 11, both from 11:00 – 12:30AM Eastern.

There being no further business the call was ended.