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MEETING SUMMARY
MINNESOTA CLIMATE ACTION PLAN TECHNICAL WORK GROUP

Energy Supply TWG In-Person Meeting #8, October 25, 2007, 8:00am - 12:00pm

Prepared by Prepared by Linda Limback and Bill Dougherty

The meeting was called to order by Bill Dougherty a few minutes after 8:00 am. In attendance were the following TWG Members:

- Barbara Freese - UCS
- John Wachtler – Barr Eng.
- J. Drake Hamilton - FE
- Bill Grant- IWL
- Bill Heaney- IBEW
- Robert Jagush- MoraPU
- Duke Bascom- GGE
- Mike Robertson- Chamber
- Brian Draxten - Ottertail
- Jim Turnure- Xcel Energy
- Steve Polasky- UofM (phoned in)
- Richard Stone – Excelsior Energy (phoned in)
- Jim Marchessault- Business Card (phoned in)
- Mike Cashin- AlleteMP (phoned in)
- Bob Ambrose- Great River Energy (phoned in)

From MN state staff, the following were in attendance:

- Linda Limback-DOC
- Rebecca Walters- PCA
- Marya White- DOC
- Peter Ciborowski- PCA
- Anne Caflin-
- David Thornton- PCA
- Edward Garvey- DOC

From the Public, the following were in attendance:

- Jerry Hinderman
- Doug Carnival
- Mike Diller
- Tony Hainault

From CCS staff, the following were in attendance:

- Bill Dougherty – Stockholm Environment Institute – US Center

TWG members not in attendance were:

- Eric Olsen – GRE (Bob Ambrose attending)
- Chuck MacFarlane – OTP (Brian Draxten attending)
- Will Steger – Ely
- Dave McMillan – AlleteMP – (Mike Cashin attending)
- David Sparby – Xcel- (Jim Turnure attending)
- Boise Jones - EJAM
- Rev. Leith Anderson - Wooddale Church
- Jerry Goodwald – Gerdau Ameristeel

The following background documents that were used as the basis for the discussions were posted on the website in advance of the meeting. These included the following documents:

- Overview of Issues and Assumptions for developing the MN ES GHG forecast
- Spreadsheet for Developing the MN ES GHG Forecast

The following background documents had been posted to the website in advance of the meeting. However, due to reasons still not well understood, they were not available at the time of the meeting. These included the following documents:

- Meeting Notice and Agenda
- PowerPoint Presentation for Meeting

Bill Dougherty had the documents available in electronic format on site for those attending the meeting in person to view. These documents were also sent out during the meeting via email to the TWG members who attended the meeting via phone conference. And finally, Bill Dougherty described the contents of the documents in detail during his presentation so that that the data was made orally available to phone conference attendees who did not have access to the documents,

The agenda for the meeting is as follows:

1. Call to order
2. Roll Call of TWG members and public
3. Review of MN CCAG Process and Expected Next Steps

4. Discussion of the revised energy supply GHG forecast
5. Discussion of initial analytical results of priority energy supply options
6. Proposed agenda, time and date for NEXT meeting
7. Public input and announcements

Bill Dougherty called the meeting to order and took the roll call (as summarized above). He reviewed the revised energy supply and GHG forecast slides, and facilitated a discussion regarding the status of analytical work done thus far on the priority energy supply mitigation options. Some of the key points that emerged from those discussions are summarized below for the revised GHG forecast for energy supply and the results of the analysis of mitigation options thus far.

REVISED GHG FORECAST FOR ENERGY SUPPLY

Bill Dougherty provided an overview of the results of the revised GHG forecast for energy supply. The following key points emerged from the discussion:

- MN energy efficiency legislation is very aggressive and has a large impact on forecast sales of electricity in MN. After discussion about the forecasted growth rate and the amount of efficiency that was already embedded in current forecasts, the ES TWG concluded that the forecast of net growth rate of energy sales in MN (i.e., after accounting for energy efficiency) be changed to 0.5%/year to reflect the impact of the recent efficiency legislation.
- The approach used in the revised GHG forecast to model the recent RPS legislation was for new renewable energy capacity to replace new fossil renewable capacity, consistent with the sales forecast constraint. With this assumption, the forecast shows that MN will not be able to reach its RPS goal of (i.e., renewable generation representing 25% of sales by 2025) and would need to meet the shortfall through purchase of out-of-state renewable energy. **The TWG agreed to develop the forecast by assuming a backing down of existing fossil generation in MN consistent with the pro rata share of in-state renewable generation target to total generation, and assuming even share of coal- and natural-fired generation on the margin.**

STATUS OF ENERGY SUPPLY MITIGATION OPTION ANALYSIS

Bill Dougherty provided an overview of the analytical results thus far of each of the priority energy supply options. The following summary provides an overview of the status of the analysis as well as key recommendations that emerged from the discussion for each priority option.

ES-1 – Generation Performance Standard

Status: *1st draft complete*

TWG agreed to revise the analysis to incorporate the following sensitivities and present to the MCCAG at the next meeting:

- 1) Determine the impact of a GPS assuming all power plants in the pipeline (i.e., IGCC power plants Big Stone (603 MW) and Mesaba (580 MW), both scheduled to come on line in 2013)

are not subject to the GPS and remain in the pipeline (i.e., capacity grandfathering scenario);

- 2) Determine the impact of a GPS assuming all power plants in the pipeline (i.e., IGCC power plants Big Stone (603 MW) and Mesaba (580 MW), both scheduled to come on line in 2013) **are subject** to the GPS;
- 3) Determine the impact of a GPS assuming all existing power purchase contracts **are not subject** to the GPS and remain operational (i.e., import grandfathering scenario);
- 4) Determine the impact of a GPS assuming all existing power purchase contracts **are subject** to the GPS and remain operational (i.e., import grandfathering scenario)

ES-2 – Improved GHG Profile of Biofuels and Fossil Fuels

Status: *Not applicable*

TWG agreed to not undertake an analysis of this option due to the fact that the MCCAG at the meeting held on 27 September 2007 had moved the analysis of the options to the Transportation and Land Use (TLU) TWG)

ES-3 – Efficiency improvements at existing power stations in MN

Status: *1st draft complete*

The current status of the analysis considers co-firing at existing coal stations only. The TWG had no recommendations for changes in methodology or assumptions thus far.

ES-4 – Upgrading of electric transmission and distribution system in MN

Status: *1st draft complete*

The current status of the analysis uses a placeholder for capital costs of T&D improvements.

ES-5 – Renewable energy portfolio standard

Status: *1st draft complete*

The TWG recommended that the analysis be revised and incorporate the assumption that existing fossil generation in MN would be backed down consistent with the pro rata share of in-state renewable generation target to total generation, and assuming even shares of coal- and natural-fired generation on the margin.

ES-6 – Nuclear Power and Support

Status: *1st draft pending*

The TWG recommended that, for the purposes of modeling only, the analysis incorporate an assumption that one (1) new nuclear plant will come on line in the state in 2020, with a unit size of 1,100 MW capacity. In-state coal generation will be assumed to be displaced. The costs for construction of a nuclear plant are uncertain and most current estimates seem low. Sources for more accurate cost estimates will be sought.

ES-7 – Advanced fossil fuel technology incentives, support, req.

Status: *1st draft pending*

The TWG clarified that the analysis should proceed with the assumption that IGCC represents the advanced fossil on which no carbon capture and storage technology is installed.

ES-8 – CCSR enabling policies

Status: *1st draft pending*

The TWG clarified that the analysis should proceed with the assumption that IGCC represents the advanced fossil on which carbon capture and storage technology is installed.

ES9 – Large-scale Combined Heat and Power (CHP)

Status: *Not applicable*

The TWG agreed to not undertake an analysis of this option due to the fact that the MCCAG at the meeting held on 27 September 2007 had moved the analysis of the options to the Residential, Commercial, and Industrial (RCI) TWG. The TWG further agreed to have the RCI TWG make some assumptions of some modest use of waste heat from power plants and possibly co-locating users with plants.

ES-10– Voluntary GHG targets

Status: *Not applicable*

The TWG clarified that this option should not be quantified.

ES-11– Carbon tax

Status: *Not applicable*

The TWG agreed to not undertake an analysis of this option due to the fact that the MCCAG at the meeting held on 27 September 2007 had moved the analysis of the options to the new Cap-and-Trade (C&T) TWG.

ES-12 – Distributed Renewable Energy Incentives

Status: *1st draft pending*

The TWG clarified that the analysis should proceed with the assumption that distributed renewable generation targets in MN would be modeled after the California initiative..

ES-13- Technology-based approaches

Status: *Not applicable*

Despite the challenges in assuming and quantifying the impact of new technologies, without quantification TWG members expressed concern that changes in technology will not be accounted for. There's a huge gap in utility R&D, despite reliance new technology to help reduce cost of carbon reduction. When TWG members were informed that the analysis of options incorporates technology learning effects, there was no objection to having this options characterized in qualitative rather than quantitative terms.

MISCELLANEOUS

An issue that came up is a new steel plant in MN that supposedly will be coal-fired. The issue was if how will this new use of coal affect the forecasts and if this facility will be grandfathered in.

SCHEDULE

- 1) The next MCCAG meeting is on 8 November 2007. The ES TWG will work with Bill via email to prepare their preliminary analytical results for presentation at that meeting. The aim is for these preliminary results to be posted in the website by 1 November 2007.
- 2) The next ES TWG Call #10 was scheduled for Nov. 16th from 8 – 10 AM Central

PUBLIC COMMENTS:

Public and TWG were in agreement over the need for more transparency. Related comment about PowerPoint presentations being made more readily available online, once technological issues are resolved. New working assumptions will be posted once the ES- TWG reaches consensus.

Concern was raised over the cost, and the costs, in particular of shutting down a coal plant for an IGCC and the full fuel cycle is done for the others.

ANNOUNCEMENTS

There were no announcements.