



WWW.MNCLIMATECHANGE.US

MEETING SUMMARY
MINNESOTA CLIMATE ACTION PLAN TECHNICAL WORK GROUP

Energy Supply TWG Meeting #10 Summary
November 28, 2007, 8:00am-12:00pm
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:

- Bob Ambrose- GRE
- David Sparby – Xcel – Jim Turnure
- Chuck MacFarlane – OTP and
- Bill Grant - IWL
- Boise Jones - EJAM
- Dave McMillan – AlleteMP – Mike Cashin
- Barbara Freese - UCS
- J. Drake Hamilton - FE
- Alexander "Duke" Bascom - Global Green Energy, LLC
- Mike Robertson - Chamber
- Robert Jagush – MoraPU- called in
- John Wachtler – Barr Eng.
- Richard Stone – Excelsior Energy

From MN state staff, the following were in attendance:

- Marya White-DOC
- Linda Limback - DOC
- David Thornton - PCA
- Peter Ciborowski- PCA
- Anne Caflin - PCA

From the Public, the following were in attendance:

- Jerry Hinderman
- Mary Jo Roth – Great River Energy
- Stacey Fudjii – Great River Energy
- Brian Draxter – Ottertail Power
- Doug Carnival
- Bill Black - MMUA

From CCS staff, the following were in attendance:

Minnesota PCA and DOC

- Bill Dougherty – Stockholm Environment Institute – US Center

TWG members not in attendance were:

- Will Steger – Ely
- Jim Marchessault - Business Card
- Rev. Leith Anderson - Wooddale Church
- Bill Heaney - IBEW
- Steve Polakxy – UofM
- Jerry Goodwald – Gerdau Ameristeel
- Eric Olsen – GRE – (Bob Ambrose attending)

The background documents that were used as the basis for the discussions were posted on the website in advance of the meeting. Unless otherwise noted, this includes the following documents:

- Meeting Notice and Agenda
- Draft summary of Meeting #9
- Powerpoint Presentation for meeting
- Analysis spreadsheets for each of the priority options (*note: not posted; these spreadsheets were distributed to TWG members individually*)

Bill Dougherty had the documents available in electronic format on site for those attending on the call to view. Bill Dougherty described the contents of the documents during his presentation so that the data was orally available to conference attendees without 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 latest analytical results for the energy supply GHG forecast and mitigation options
5. Proposed agenda, time and date for NEXT meeting
6. Public input and announcements

Bill Dougherty called the meeting to order and took the roll call (as summarized above). The notes from meeting summary #9 were accepted with no changes. He announced that the main objective of the meeting will be to zero in on key assumptions to present at the MCCAG meeting on December 5th.

Bill also raised the issue, suggested by Mike Cashin, about the role that the Nordhaus report on Global Warming and Economic Models could have in the discussion. The following are a few comments that came out of that discussion; the TWG ultimately decided to use the Nordhaus report as a point of information for comparison purposes only.

- The Nordhaus report provides a big picture perspective about carbon cost and how to model them against impacts.
- Nordhaus came through with a \$7 - \$9 / ton range for effectiveness, and starts with \$30/ton and escalates that up over time to about \$100/ton.

DISCUSSION OF THE LATEST ANALYTICAL RESULTS FOR THE ENERGY SUPPLY GHG FORECAST AND MITIGATION OPTIONS

Sales forecast and NERC:

A few members of the TWG suggest altering the current forecast growth rate of .5% in MN (with the embedded efficiency program) to reflect the findings of other studies, namely the NERC October 2007 report, which cites a 2.3%/yr regional energy consumption growth rate over the next ten years. The TWG figure could be too low, however, others argue the NERC study figure is too high given the state of the economy and because other states will be marking serious carbon reductions. There was additional concern that .3% for the utility side of system efficiency was not worked into math yet.

Given debate and stalemate over the extent to which the figure should change, the ES TWG will aim to bring results from 0.5%/yr growth (that is already built) in to MCCAG with the disclaimer that this may double.

MN Planned Nameplate Capacity Additions and Retirements (MW)

From EIA for 2006-2010:

- Assumed combustion turbines natural gas will be added; roughly 2229MW by 2010.
- The database does not specify the renewable resource but the default assumption is that capacity additions follow MAPP expansion characteristics: 4% MSW, 15% biomass, and 81% wind turbines.
- There will be no new retirements for 2006-2025.

Planned capacity additions during the period 2011-2025 are analyzed in the following scenarios:

Reference 1 - all planned coal additions, without new RES or new CIP

Reference 2 - All planned coal additions with new RES and new CIP

Reference 3 - No planned coal with new RES and new CIP.

(A scenario with and without new RES and CIP can be backed out by making sure the mitigation options are counted against Business As Usual (BAU) in MN, which already included an RES and CIP.)

TWG agreed to phase in Big Stone in previous meetings. Even though Big Stone is not in MN, the TWG decided that everything generated in MN stays in MN and new out-of-state power plants owned by MN utilities and that serve MN will have their emissions be allocated according to how much power went to the state. If MN produces low-carbon electricity and exports a portion of it, MN still claims carbon credits.

Reference 1 - all planned coal additions, without new RES or new CIP 2011-2025:

The scenario did not yet incorporate the fact that utilities were already on schedule to implement voluntary renewables before the RES went into effect. The TWG needs to see the value of the actions before the RES in order to identify the impact of the 2007 legislation. Given information provided in the meeting, CCS will take 10% renewables out to the year 2015 and then leave it flat after that.

Reference 2 - All planned coal additions with new RES and new CIP

There was some concern over the ability of MN to incorporate up to an additional 15.6 TWH of renewables in MN, but this figure is assuming the existing in-state:out-of-state split. (70%:30%) this may or may not make a difference, but for now remains as is for the presentation.

Rather than using wind capacity factor, it was suggested to use production, which is roughly, 10% additional capacity—if this is not factored in, the number will be lower than what is actually needed. Either way, it will affect cost more than emissions to meet the RES.

Reference 3 - No planned coal with new RES and new CIP.

No discussion as nothing was identified as an issue.

Avoided Costs

A few members of the TWG took issue with the figures in the analysis lack of reliable data was cited as one contributing factor to this disagreement. Additionally, the interest during construction varies by generation type so there's not a single cost for all technologies. TWG agreed to apply a 50% factor to overnight capital numbers (slide 70), with a 4% escalation rate.

ES6- Nuclear

MCCAG suggested that ES-TWG look at life extensions of their life as a mitigation cost. Current analysis assumes that the three nuclear units are relicensed which brings substantial emissions reductions. Relicensing has much more support than building new plants. TWG hopes for an answer from MCCAG about whether we should add in a nuclear plant, since in recent news articles it seems the legislature is re-thinking their stand on nuclear because of carbon.

Conclusion:

CCS will review current results in the powerpoint and convey the re-work due to what was discussed today to the MCCAG. CCS will also add up all of our options to see what cumulative emission reductions would be.

A comment was made about incorporating fuel costs into the analysis, since if there are carbon limitations, analysis may need to adjust for the fuel costs. The meeting ended before consensus could be reached.

SCHEDULE

- 1) The next TWG meeting is Thursday, December 6, from 10:00 am to 12:00 pm.
- 2) The next MCCAG meeting is December 5th, then for Jan 10 all day and Jan 24 all day

PUBLIC COMMENTS:

This is in regards to the nuclear issue. You had done an analysis that a new nuclear plant that would appear in 2020 and that analysis now looks to be gone. I would hope that you include a fair analysis of nuclear in the final report.

ANNOUNCEMENTS: There were no announcements.