



**DRAFT MEETING SUMMARY
COLORADO CLIMATE ACTION PANEL
Meeting #3**

Golden, Colorado
May 3, 2007

Attendance:

Climate Action Panel (CAP) Members:

- Brad Udall (sub for Dr. Susan Avery)
- Dr. Joe Broz (Co-chair)
- Chris Crosby
- Judy Dorsey
- Michael Dowling
- Jack Ihle
- Frank Prager
- Eric Kuhn (Co-chair)
- Dr. Chuck Kutscher
- Brian Moeck
- John Nielsen
- Bruce Oreck
- Dianna Orf (alternate for Stuart Sanderson)
- Dan Grossman
- Nancy Sharpe
- Mike Bowman
- Randy Udall
- Chris Williams
- Dave Termin
- Stan Zemler

Governmental agency liaisons: Heidi VanGenderen (Governors' Climate Change Advisor)

Rocky Mountain Climate Organization: Stephen Saunders, Tom Easley

Center for Climate Strategies: Tom Peterson, Ken Colburn, Ezra Hausman, Alice Napoleon, Stephen Roe, Jeff-Ang-Olson, Tiffany Batac (in person).

Public: Calla Ostrander, Isaac Silverman, Ron Benioff

Background Documents: (all posted at www.coloradoclimate.org)

- Notice and Agenda
- CAP Meeting #2 Summary

- Power Point Presentation
- CCS Memo on Priorities for Analysis
- Policy Workgroup Straw Proposal Templates
 - Agriculture, Forestry, and Waste Management
 - Energy Supply
 - Residential, Commercial, and Industrial
 - Transportation and Land Use
 - Cross-Cutting Issues

Discussions and conclusions:

1. Welcome, Introductions, and Review of Agenda

- Stephen Saunders, President of the Rocky Mountain Climate Organization, called the meeting to order and welcomed the panel members and members of the public. .
- Midwest Research Institute, Joe Broz, provided an overview of MRI (a nonprofit) as the operator of NREL for 28 years. Research operations include Life Sciences, National Security & Defense, Laboratory Management, and Technology Commercialization.
- Ron Benioff of NREL provided an overview of NREL’s renewable energy and energy efficiency programs (DOE’s lead lab in these areas). These include work on wind, solar, biofuels, hydrogen and geothermal. Biofuels work includes emphasis on cellulosic ethanol production (enzyme production costs). Also working on implementation of biorefineries (six recent DOE project grants). Also, work in batteries, fuel cells, and vehicle efficiency. Renewable electricity work includes wind (e.g. new low speed turbines), solar photovoltaics, distributed generation, and energy efficient buildings. NREL conducts a lot of technology development work with industry to lower costs of getting these technologies to market. NREL is a carbon neutral entity, achieved through on-site generation, efficiency, and purchase of renewable energy certificates.
- Tom Peterson reviewed the agenda. The objective of today’s meeting is to review the list of priority policies for analysis. Stephen Saunders explained that State representatives will not become members of the CAP. He also described next steps in the process and that at the July CAP meeting, the goal will be to review the policy options developed by each PWG. There will also be an RMCO-led group which will be working on adaptation issues (especially water quality/quantity). Outside of water-related issues, the CC PWG will address other adaptation issues. This process will run parallel to the CAP process.
- Heidi VanGenderen introduced her new role as Climate Advisor to the governor. She looks forward to the results of the CAP process and feels that it will serve as valuable input to the state. She also mentioned a variety of new legislative efforts on renewable energy and efficiency in the State.

- Tom Peterson mentioned the five state initiative involving 5 west coast states (and recently British Columbia). This initiative to foster regional approaches to GHG mitigation has just begun. Other states have been invited to join as observers.

2. Project Schedule

Tom Peterson reviewed the 10-Step work plan and where the CAP process is in this plan (steps 4 and 5 on identifying priorities for analysis). At the May 22 CAP meeting, the CAP will review the PWG's straw proposals (policy descriptions and design goals). Following this meeting, the PWG's and CCS will complete the rest of the policy template, including estimated benefits and costs. The CAP will review these materials at the July meeting. Because the length of the process has been contracted, it will be important for CAP members to be prompt in their reviews of materials prepared by each PWG.

3. Review and Discussion of the Priority Policy Options for Analysis

A total of 54 priority options have been identified by the PWGs. The CAP was cautioned that the capacity of the process might not allow for many additions to these priorities (if some are added, others might need to be removed). A number of options are consolidations of individual options that appeared in the catalogs for each PWG.

- **Energy Supply:** Ezra Hausman provided an overview of the priority options selected by the ES PWG (a total of 14 options).
 - ES-2 could include both renewable energy and energy efficiency, while ES-1 just covers renewable energy. A discussion centered around whether or not these two options should be combined. No preference was provided by the CAP for combining the options.
 - Some CAP members mentioned a desire to have the results of the CAP process be a more broad-based (less detailed) vision of what the State of CO would look like in 2030 and 2040. A CAP member thought that an emphasis needs to be placed on how the information from this process would be packaged for public consumption. The discussion then moved into the issue of state GHG reduction goals. Stephen Saunders mentioned that after some analysis has been completed, a sense of realistic reductions will emerge that could form the basis of State goals. CCS suggested that CAP members review the plans that have been developed in other states (e.g. AZ and NM). A concern from the CAP was raised about the accuracy of the emission and emission reduction estimates (especially in the gas and oil sector). CCS responded that the CAP and PWGs have the authority to review the inventory and forecast and make revisions as needed.
 - ES-3, transmission for renewables, should be coordinated with existing transmission planning.

- ES-4 – The issue of pulling cap & trade and carbon tax in one proposal was discussed. A CAP member felt that a cap and trade policy should be analyzed on its own and not part of a policy combined with a carbon tax policy. CAP members felt that cap and trade needed to be evaluated at different geographic levels (state, region, nation), while a tax could be done at the state-level (hence, the need for separate analyses).
- ES-5 – no comments/questions.
- ES-6 – no comments/questions.
- ES-7 – It was discussed whether this should be consolidated with ES-10, but the CAP overall felt that these two should be kept separate. However, this was renamed “Carbon Transportation and Storage” infrastructure (instead of “Capture”) as the thrust of the proposal has more to do with transportation.
- ES-8 – no comments/questions. However, as there seems to be a significant overlap with RCI-7, these should be merged.
- ES-9 – There was some discussion of how this interacts with ES-1, which covers incentives for renewables including R&D. R&D was dropped from ES-1 as a result.
- ES-10 – no comments/questions.
- ES-11 – Other baseload renewables available (biomass, geo-thermal) in addition to small hydro that present a similar situation. Should these be included? Other CAP members mentioned that legislation had just passed in this area, requiring mapping of these resources. CAP members would like to know what the other resource potentials are. CAP recommends that the Governors’ Energy Office explore the resource potentials of these other renewable sources. NREL may have useful information in this area.
- ES-12 – CAP agreed that it should be left on the table. Estimates of cost and benefits will be difficult to obtain.
- ES-13 – Although this was originally conceived to include T&D efficiencies as well as generation, the PWG did not include T&D efficiency.
- ES-14 – no comments/questions other than difficulties the PWG has had in establishing initial goals.

CAP suggested that the ES options should look at GHG requirements for new generation facilities. This will be added as ES-15. Objections/Modifications to the initial list:

- ES-1 – none.
- ES-2 – none.
- ES-3 – none.
- ES-4 – none.
- ES-5 – none.
- ES-6 – none.
- ES-7 – none/change to “Carbon Capture, Transportation & Storage”.
- ES-8 – merge with RCI-7; remove from ES.

- ES-9 – none.
 - ES-10 – none.
 - ES-11 – none.
 - ES-12 – none.
 - ES-13 – none.
 - ES-14 – none.
 - ES-15 – Emission Performance Standard for Existing & New Generation (4 objections from the CAP to adding this option; some CAP members thought that since the technologies were not available that the analysis could not be conducted; others thought a mandatory approach was too burdensome for the utility industry).
- **Residential, Commercial & Industrial:** Ezra Hausman provided an overview of these priorities (10 options). Comments and questions from the CAP were:
 - RCI-2 – CAP asked for details on what areas would be targeted for energy efficiency. This was left for the PWG to detail in the proposal.
 - RCI-3 – A bill was signed this session (The Levy Bill) mandating that all municipalities without an energy code establish one. It is not clear what the enforcement provisions in this bill are, however. CAP member suggested that building codes achieve a “neutral cost point” for achieving energy reductions over the life (or mortgage) of a building. Timing of technology availability needs to be considered in the development of policy goals, since this will affect home buyers. It was noted that 70% of energy use is in buildings, lending opportunities in this area additional significance.
 - RCI-8 – This option really refers more broadly to passive renewable energy systems, not just solar. CAP questioned whether active solar (e.g. photovoltaics) was included. CCS responded that it is not. PWG will assess where there is a role for active solar. NREL could help in estimating reductions for solar hot water heaters in CO based on recent work at the national level.
 - RCI-10 – the cap and trade element should be considered along with the ES cap and trade option (ES-4). CAP discussed methods for packaging many small businesses to achieve reductions in cost. Clarification was asked on the element covering the skiing industry (it was noted that this industry is particularly vulnerable to climate change.) Some CAP members felt that the ski industry should not be singled out for assistance, and that it should be broadened to other vulnerable industry segments. In general, this proposal needs to be pared down so a single, well-defined proposal.

Objections/Modifications:

- RCI-1: none.
- RCI-2: none.
- RCI-3: none.
- RCI-4: none.

- RCI-5: none.
 - RCI-6: none.
 - RCI-7: none.
 - RCI-8: modified to “Renewable Energy Systems”.
 - RCI-9: none.
 - RCI-10: Cap and Trade element included with ES-4; the rest of the elements - small source aggregation element; industrial ecology element; industry technical support element to be recast as “Statewide Replication of Climate Wise Program”.
- **Transportation & Land Use:** Jeff Ang-Olson provided an overview of these priorities (11 options). Comments and questions on these were:
 - TLU-1: CAP asked how analysis would be done. CCS explained the benefit is typically based on light-duty VMT reductions achieved, as quantified in the literature. CAP was concerned that the term Smart-Growth be defined appropriately, since some development projects label them selves “smart growth” but may not actually reduce VMT. CAP asked if CCS will look at specific demographic issues like number of children. CCS responded that quantification of impacts will start with a baseline forecast of population and VMT, and will not get into the details of the population forecast.
 - TLU-2: CAP asked whether standards existed for the HOV lane use incentive, and suggested that this policy in Colorado not allow HOW lane use for hybrid SUVs or other vehicles that are not more efficient than average. CCS mentioned that for HOV use, California sets minimum emissions standards for vehicle that qualify. CAP asked if feebates would be regressive if they target older used vehicles? CCS responded no, because feebates would only apply to new vehicles.
 - TLU-3: CCS mentioned that this would cover school buses in addition to other heavy-duty vehicles. CCS clarified that “LVD” includes all passenger vehicles, including SUVs.
 - TLU-4: CAP requested that this option also look at school bus fleet in the state. CAP asked if they option would provide large benefits. CCS responded that this would not produce large emission reductions, but could be very cost effective.
 - TLU-5: CAP asked whether this could be a low carbon fuel standard. CCS responded that the policy could be structured this way.
 - TLU-8: Should be considered either as a VMT, fuel or CO₂ tax. CAP mentioned that the Governor has crated a panel to look at the problem of future transportation revenue shortfalls, and one of the options on the table is a gas tax increase. CAP noted that those revenues would go toward road building, which might be at cross-purposes with a GHG emission reduction strategy. CAP asked about the extent to which increasing the gas tax will actually reduce travel. CCS noted that there is literature on this (price elasticity), but much of it is dated. A

CAP member noted that any tax scheme should not result in lower overall tax revenue to local governments.

- TLU-11: CAP asked whether this overlaps with the CC policy on public education. CCS responded there may be overlap, and the TLU facilitators will work with the CC TWG to ensure coordination.

CAP asked about opportunities to reduce aircraft emissions, and whether the TWG include any strategies for this source. CCS responded that no such strategies were recommended for priority, and the state has few options for reducing emissions from aircraft.

Objections/Modifications:

- TLU-1: none.
 - TLU-2: none.
 - TLU-3: none.
 - TLU-4: none.
 - TLU-5: none.
 - TLU-6: none.
 - TLU-7: none.
 - TLU-8: none.
 - TLU-9: none.
 - TLU-10: none.
 - TLU-11: none.
- **Agriculture, Forestry & Waste Management:** Stephen Roe provided an overview of these priorities (10 options). Comments and questions from the CAP were:
 - AFW-1: CAP mentioned that there was a need to consider how this might impact CRP lands and associated revenues. Programs are needed to maintain CRP acres in a non-cultivated state in order to maintain the soil carbon that has been built up. A robust carbon market (and credit for sequestration on agricultural lands) could help keep this land in place. CRP is big (~2 million acres in Colorado) with a large number of acres expiring in coming years. These acres haven't been planted/managed to maximize sequestration potential. Need also to think about the conflict of pushing biofuels (which use cropland) vs. wanting to keep CRP lands in place. Much land could come out of CRP starting in 2008.
 - AFW-4: Recent report indicates that fuel standards for biodiesel are very weak, or not well enforced. CCS indicated that the issue of fuel standards covering biofuels for the State will be taken up either in this option or more likely in the TLU renewable fuels option.
 - AFW-7: The CAP asked whether biomass co-firing included. CCS responded that this option focuses on biomass supply; however, if there is no significant call for biomass from ES and RCI options (along with any other options requiring biomass, such as ethanol production); then the PWG will need to factor the need

for additional biomass demand in this option. CCS will confer among the PWG facilitators to determine whether there is a need for this in the straw proposal to be developed. CCS was also asked about switchgrass (number of cuttings, etc.). CCS responded that while it could not offer a response on this at the meeting; these issues will be addressed if the PWG implementation of this policy calls for switchgrass production.

- AFW-8: The CAP asked whether CCS will look into albedo effects when considering the net benefits of forestry options. CCS agreed that this was an important issue to address; but that it was not clear that this option would result in a significant gain in forested acres (or a measurable change in albedo on existing forested acres). CCS was asked whether the risks of fire were evaluated as part of this option. CCS responded the fire risk reduction programs were one example of the types of programs that are to be addressed in this option (e.g. thinning and density management will likely be a management method within the policy design). The CAP also asked the PWG to consider adding an urban forestry component to this option (urban tree planting programs).
- AFW-9: The CAP asked the PWG to add something on solid waste reduction & recycling. Not doing much recycling in Colorado now, so it's a low-hanging fruit item with considerable potential for GHG reductions.

Objections and modifications from the CAP:

- AFW-1: none.
 - AFW-2: none.
 - AFW-3: none.
 - AFW-4: none.
 - AFW-5: none.
 - AFW-6: none.
 - AFW-7: none.
 - AFW-8: none/PWG should consider an urban tree program element.
 - AFW-9: none/PWG should broaden the option to include source reduction and recycling.
 - AFW-10: none.
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- **Cross-Cutting Issues:** Ken Colburn provided an overview of these priorities (10 options). Comments and questions from the CAP were:
 - CC-1: CAP asked whether the January 2007 CO Inventory & Forecast was the latest. CCS responded that this is the latest draft.
 - CC-5: CAP asked that this policy be extended to local governments.
 - CC-7: Education should be comprehensive in terms of coverage of the public (e.g. driver education for reducing GHG emissions).

- CC-8: CAP suggested that this be dropped, since it is being covered in ES and RCI. CCS explained that it could include assessment of Colorado joining other cap and trade programs (e.g. 5-State Initiative).
- CC-9: CAP mentioned that federal funding programs be included.

Objections and modifications from the CAP:

- CC-1: none.
- CC-2: none.
- CC-3: none.
- CC-4: none.
- CC-5: none/add “Local Governments”.
- CC-6: none.
- CC-7: none.
- CC-8: Should be eliminated.
- CC-9: none.
- CC-10: none.

4. Next Steps PWGs – Straw Policy Design Proposals

Tom Peterson covered the next steps that the PWGs will take to develop the mitigation option description and design. These should be completed by May 11, so that the CAP can review these on May 22.

5. Review and Approval of CAP Meeting #2 Summary

Comments on this meeting summary should be sent to Stephen Saunders by May 9.

6. Agenda, Time and Date for Next Meeting

The agenda for the next CAP meeting will be for the CAP to review (1) review the PWGs’ straw proposals (policy descriptions and designs); (2) prepare for quantification of draft options; and (3) review status of inventory and forecast.

CAP members were reminded that the next meeting will be held on May 22, 2007. RMCO staff will inform the CAP members of the time and location of the next meeting.

7. Public Input and Announcements.

Members of the public were invited to make comments and raise questions, but there were none.

The meeting was adjourned.