



**DRAFT TELECONFERENCE MEETING SUMMARY**  
**Residential, Commercial, and Industrial Policy Working Group**  
**Call #7, July 18, 2007**

**Members Attending:**

Susan Avery  
Dan Chiras  
Paul Ira  
Pat Keegan  
John Phelan

Jennifer Schenk  
Kurt Schlomberg  
Jim Schrack  
Fred Stoffel

**Governmental agency liaisons:** none

**Rocky Mountain Climate Organization:** Stephen Saunders, Tom Easley

**Center for Climate Strategies:** Ezra Hausman, Alice Napoleon, Kenji Takahashi,  
Jennifer Kallay

**Members of the Public:** none

**Agenda Item #1: Introductions and Roll Call**

**Agenda Item #2: Review & Approval of Draft Summaries for #5 and #6**

No objections to either.

**Agenda Item #3: Process & Objectives for Call**

- Discuss remaining I&F adjustments
- Present preliminary results of evaluations CO policy options
- Make sure everyone on the PWG understands our analytical approach and results.

It was noted that there are some changes in the draft policies text; some remaining issues are:

- Present value year (2005 in our analysis)
- Results for forecast year 2010 were posted for today, but the report to the CAP will include 2012 as the intermediate year.

PWG members were invited to send CCS additional comments by Sunday for inclusion in notes to the CAP. However, these would not be presented as the consensus of the group.

The issue of PWG recommendations was discussed—we are not voting on individual options for recommendation at this point. The CAP is the decisional body as far as what gets recommended for implementation. PWG members can note objections to individual options which will be included in the write-up for the CAP. The CAP will make some decisions on 8/1, but this is the last meeting before then. Our analyses do not constitute recommendations but just information.

#### **Agenda Item #4: Changes to the GHG Inventory and Forecast (I&F)**

Details on CCS' representation of the code upgrade bill (HB07-1146): 40% of new construction buildings are likely to be affected by this bill. In areas affected by the code upgrade, the average improvement (energy savings) for residential buildings will be 5%; for commercial, it will be 15%. This comes to 2% energy savings for all residential new construction, and 6% for all commercial new construction. The impact on the base forecast starts very low but grows to 1% in 2020.

Pat Keegan suggested that we run these figures by Howard Geller, who was very involved in bill and may have some estimates of likely impact. CCS had already contacted SWEEP, which suggested we contact BCAP; SWEEP has used BCAP estimates in their analysis. (CCS attempted to contact Geller once again since the meeting.)

There were no objections to the modifications to the forecast, which will be recommended to the CAP.

CCS is not recommending any changes to the I&F based on these bills:

- HB07-1169 (Cooperative Electric Association Net Metering)
  - No basis for estimates
- SB07-051 (High Performance State Buildings)
  - Small effect on statewide bases
- HB07-1037 (Gas DSM)
  - Small effect compared to RCI-1.; 0.5% for bill, RCI-1 much more.

A member noted that a 0.5% decrease in energy use (from HB07-1037) is not insignificant; however, CCS responded that the bill was very recent in addition to having a small effect (relative to the intrinsic error in the forecast.) Savings for HB07-1037 are mentioned in the policy description. Finally, as a member noted, the rules have not yet been written.

No objections were heard to not including these bills.

## **Agenda Item #5: Discussion of Preliminary Quantification of Impacts and Other Portions of the Policy Option Template**

CCS noted an assumption that was not documented in the policy option document but should have been: percent of commercial & industrial use that is related to buildings. This will be added to the list of assumptions.

### Overall Introduction & Comments

CCS noted that for RCI-6, there were inconsistencies between the policy description and the design. The design did not include residential, while the description seemed to include it. In this case the design was assumed to overrule the description. The proposed changes are redlined in the policy document.

A member suggested adding residential to this policy. CCS responded that this decision is already made and that the PWG is targeting residential in other policy options, specif. in RCI 1,4,3 and in renewable energy tax credits. Most members felt that if this policy were recommended for implementation, it should include residential as well. This will be noted in the policy template.

A member noted that the energy savings for RCI-6 looks extremely low: does the analysis assume a reach of just 5% of buildings by 2017 and 20% reduction in energy use? CCS confirmed that there is an error in the analysis in the interpretation of the policy design. This will be rectified in time for the CAP meeting.

### Notes on Methodology

RCI-1 change: HB07-1037 represents an uncertainty in the analysis because the rules are still to be established by the PUC.

In response to a request, CCS described the columns and headings in the summary table. GHG reductions/2010 means reductions in that year relative to the baseline on a million metric ton of carbon dioxide equivalent (MMTCO<sub>2</sub>e) basis. However, we did not take into account secondary effects such as the impact of reduced demand on decreasing pipeline CH<sub>4</sub> leakage.

Net present value (NPV) is reported in 2005 dollars, as of 2005. The NPV will be changed to 2007 (through 2020) for the CAP meeting. Negative values represent savings. Cost effectiveness is defined as dollars per metric ton CO<sub>2</sub>e. The NPV calculation uses a 5% real discount rate.

There was some discussion of whether the NPV shown represents the “total resource cost” test. It was concluded that we should avoid this term as it has various definitions, often including environmental and health effects, etc., that are not quantified in this analysis (and that would significantly increase many benefits.) These environmental and health benefits should be noted under additional benefits and costs. The costs considered do include costs to administrate, costs to consumers, etc. unless otherwise noted.

The purpose of the 5% discount rate was discussed. As this is the “real” discount rate, it does not include inflation—it is just a time preference rate. It can be seen as an interest rate minus inflation.

A number of parameters appear throughout the policy options, e.g. avoided cost of gas & electricity. The lifetime of efficiency options is 13 years, real discount rate of 5%, and the cost of saved electricity is constant.

### **RCI-1**

Important sources included the KEMA study, among others. CCS assumed an achievable energy efficiency (EE) potential of 1% savings per year. The sources noted show achievable EE savings of between 0.8% and 1% per year, so we think this is a fairly solid number. Same with achievable gas efficiency potential.

Some members noted that assuming 1% from start may be unrealistic, that there may be a ramp-up period. Example: Xcel has had good program in Minnesota for several years. Based on that experience, getting to 1% will take a lot of effort & time. One member suggested that four years would be a more reasonable assumption. A ramp in period will be added to the analysis.

CCS assumed 1% per year as written in the policy description. This is difficult to achieve without sufficient funds to support such programs; it may require 2-3% of revenues to achieve this.

The \$56/MWh blended retail cost was explained. This was based on an Xcel study – no profit margin, etc. The word “delivered” may be misleading. CCS will work on the wording of this.

### **RCI-2**

Energy efficiency in state and local government buildings was changed to include schools.

Changes to data sources: the analysis draws on the Commercial Buildings Energy Consumption Survey (CBECS) for a lot of the underlying data. It also uses AEO floorspace data for the mountain region; cost of saved electricity from WGA; and an assumption for the cost of saved NG consistent with RCI-1.

The analysis assumed interest-free funding (policy says low or zero).

This policy was modeled as a ramp-in to achieve goals in 2015. At that point the program costs are discontinued, but benefits continue at the same level through 2020 due to the long life of energy efficiency investments.

A key uncertainty is the square footage of govt. building space in CO. CCS had to use regional data for the analysis.

John Phelan noted that the 1<sup>st</sup> half or three-quarters of the policy description was put-offish, about how hard this is. John will re-write.

A recent executive order calls for 20% reduction in energy use over 5 years for all state buildings. Already proposing lots of money for this.

Members questioned why there were double the savings in RCI-2 vs. RCI-6. RCI-6 is all other square footage but came out much smaller. CCS noted that making the adjustment to 5% per year for RCI-6 will make a big difference.

Paul Ira noted that no one else has mandates to do anything about it. Government buildings have to make big changes. This doesn't make sense on a gut level.

CCS to review this and see if this is rectified by correcting interpretation of policy RCI-6.

The group agreed to remove the bill in US Congress from write-up.

### **RCI-3**

There are too many uncertainties to be able to quantify this policy, in which enforcement and training are not associated with a code change.

Respondents contacted feel that this is an important policy but needs to be part of a multi-pronged approach, and that there is a need for more leadership in code enforcement. CCS noted problems in terms of getting the cost to be equivalent across different jurisdictions. This makes it more difficult to analyze, and CCS recommended not doing so.

Members agreed that this should not be quantified. It may be important to link this to planning and design – goals for construction have to go with good enforcement.

CCS will insert a sentence in the policy description that this will play a critical role in the success of other policy options, for example RCI-4. However, it was noted that as RCI-4 involves LEED certification, it has built-in enforcement to achieve certification.

### **RCI-4**

Lots of assumptions were required to complete this analysis, because in part it was very hard to find specific quantitative interpretations of these standards. Also, not all LEED standards have to do with energy savings. CCS still has a call out to try to get better info on this program and we have placeholder in there. There are slightly better data for Energy Star high performing, including energy reduction and incremental cost. We have some data sources for LEED & a wide variety of examples. We are also drawing on CBECS.

CCS noted that the timing of costs, benefits and goals is similar to RCI-2 (see page 20).

A member asked if the policy involved a mandate, or just a goal? CCS noted that for analysis purposes, we assume that the goal is reached. This may be interpreted as more of

a mandate.

Stephen Saunders noted that the policy description and design are not consistent, and it was hard to divine what the group intended. Question of exactly what this policy is remains a fundamental question that the group has not grappled with, e.g., how would this be implemented? Would there be a mandate on state and local governments? As the state cannot mandate for local governments, this would be a local decision. Can this go to the CAP without some discussion of this? It needs to be flagged that the group has not yet fleshed this out.

A member explained that implementation for the government portion of the policy is easy, that these standards can be required. Energy Star is voluntary, but might reach 70% level. Commercial is more complex, but it could be implemented as an aggressive voluntary program to go way beyond code—not mandating, but aggressive voluntary. The group agreed to change the policy description to reflect this. However, the analysis does not assume any costs associated with administering an aggressive voluntary program.

A member noted that in Nevada, 70% of new residential construction is Energy Star. 70% of commercial by 2015 may not be realistic for a voluntary program—it is hard to imagine how we can get there. Could we analyze 50% instead of 70%? Stephen Saunders suggested that we flag that the group is not comfortable with whether the goal is achievable, for now resting in thin air. This will be noted as a feasibility consideration.

Additional cost to achieve LEED platinum was discussed. Some studies say between 30% and 50% incremental costs, while the analysis assumes 4%. However, much of the cost in the other studies may reflect non-energy aspects of the certification. John Phelan agreed that CCS' numbers are consistent with what they have seen for just energy efficiency. Paul Ira offered to do research on this. Also, the group agreed to use LEED platinum number as a surrogate for Architecture 2030.

CCS noted that the forecasted residential starts per year is not well-founded in the analysis.

### **RCI-5**

This policy involves inverted block rates with the revenues being used to support energy efficiency. The analysis required lots of cleverness and assumptions. Issues included elasticity of electricity—for now based on EIA numbers.

This policy goes beyond RCI-4 by providing funding for EE programs, but part of the point is to reduce consumption with a high marginal cost signal. This required some hand-waving because we don't know the distribution of usage levels in the state. Also, consistent with EIA's cross-price elasticities, a substitution effect (i.e., gas for electric heat) is assumed to be trivial.

CCS has found new elasticity numbers from RAND, and found that mountain region elasticity is lower than what is shown in our analysis. CCS also noted that the result showing costs instead of savings (compare to RCI-1) is clearly an error and we will rectify it.

Tom Easley noted that while this option shows great benefits, it poses a big political question. This may be a liability.

Discussion among PWG members focused on why inverted block rates are so controversial. The idea of tying them to an energy budget is unprecedented in Colorado. Having an inverted block rate design for cost recovery is OK...but a penalty on top of that for higher use not for cost recovery is far away from cost of service. Traditional utility ratemaking is cost of service based.

Could Xcel support any inverted block rate? Xcel said yes if structured in certain ways. It should not be part of utility ratemaking. You could add a BTU tax on top of rates, but this is conflating the two. Xcel has an additional cost for DSM, but it is so-specified on bills (i.e., not buried in the price of electricity.)

It was suggested that it may be better to have the additional charges be in fact cost-based (cost of service for energy efficiency programs.) Xcel develops basic rates on the basis of cost of service. Xcel remains on record as not supportive of this option as currently designed.

### **RCI-6**

This policy assumes 0% loans, even ramp-in, benefits continue after goal achieved, etc.

A member noted that in terms of cost effectiveness, this is the best one we've got going, with strong financial as well as GHG benefits.

Stephen Saunders asked if we could estimate the amount it would cost the state to loan out all of this money at 0%? How much money would the state have to set aside for this? CCS has a cost based on BTUs saved, but how much initial investment will be needed to set up such a loan fund? CCS can and will calculate this.

### **RCI-7**

The cost of smart meters & in-home displays is based on a number of studies, \$250 each. This is an installed cost. Feasibility issues include the high cost of setting this up, and as a result there may be resistance from consumer advocates, etc.

It was asked whether CCS is looking at this at the same time as the inverted block rates? CCS responded that it has not yet looked at the overlap between these but will do so. However, the two policies may be incompatible.

It was noted that the rates could be TOU or real-time. This would require changes in the rate schedule.

This policy would not be voluntary. The goal is 100% penetration by 2013. It should be made clear that this would be a requirement.

### **RCI-8**

CCS noted the difficulties of analyzing this policy option, because it involves many different renewable energy technologies. CCS is not prepared to present numbers yet.

Dan Chiras agreed that it is a significant challenge in making an estimate, extremely complex. It might be best to say just set up a \$100 million fund and do a crude analysis, using a range of estimates of energy savings. Due to the complications, the group agreed to leave this as a non-quantified option.

### **RCI-9**

Goal is very close to “technical potential”. CCS had to cut back on the goals of this policy because it did not seem to be feasible as-is. While this varies by state, on average the economic potential is about 30% of technical. Thus we reduced from 1,500 to 500 MW.

### **RCI-10**

CCS noted that there are issues translating Ft. Collins program to statewide. In Ft. Collins, data are inconsistent; it is a relatively new program, and things are changing over time. It also targets transportation, water, waste, renewable energy, etc. The benefits come from other options—this may be more of a marketing tool. As a result, CCS was not able to say what cost and benefits would be.

### **Wrap Up**

Comments or questions can be e-mailed and will be presented as such. Members were asked to send comments by Sunday, July 22.

### **Agenda Item #6: Agenda, Time, and Date for Next Call**

Next meeting: implementation mechanisms.  
The meeting following that: voting.

Time & Date:

August 15 9:00 a.m. – 12:00 noon

August 29 9:00 a.m. - 12:00 noon

### **Agenda Item #7: Public Input and Announcements**

None.