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**MEETING SUMMARY**  
**SOUTH CAROLINA CLIMATE, ENERGY AND COMMERCE ADVISORY**  
**COMMITTEE**

**Residential, Commercial, and Industrial (RCI) Technical Work Group (TWG)**

Teleconference meeting #12, March 27, 2008

**Attendance:**

**1. Technical Work Group Members:**

- Ben Moore (for Dana Beach - Coastal Conservation League)
- Shelie Miller – Clemson University
- Mitch Perkins – SC Energy Office
- Paul Wojoski (for Myra Reese - South Carolina DHEC)
- David Wach – Roche Carolina, Inc.
- Jim Witkowski – International Paper

**2. Center for Climate Strategies (CCS) Staff:**

- Alice Napoleon – Lead facilitator
- Kenji Takahashi
- Jennifer Kallay
- Ezra Hausman

**3. South Carolina Department of Health and Environmental Control (DHEC):**

- Michael Juras – Agency Liaison

**4. Public Attendees:**

- none

**5. Technical Work Group Members not attending:**

- Crandall Bowles – Spring Mills
- Giff Daughtridg - Nucor Steel
- Barry Falin –Voridian
- Reggie Gallant – State Farm
- Stephen Holt – GCHI
- Larry Landry - Ameresco
- Mike Olbrich – BP America, Inc.
- Keith Sanders – CDA Architects
- Andy Walker – Bollin Ligon Walker Realtors
- John Wilson – Southern Alliance for Clean Energy

**6. Background documents:**

(posted at [http://www.scclimatechange.us/Residential\\_Commercial\\_Industrial.cfm](http://www.scclimatechange.us/Residential_Commercial_Industrial.cfm))

1. Meeting Notice and Agenda
2. Draft Summary of Meeting #11
3. PowerPoint for Teleconference
4. Policy Option Document
5. Cumulative Impacts Table
6. Example of a Clean Energy Standard Offer Program from Recycled Energy Development

## **7. Discussion items and key issues:**

This was the twelfth meeting of the RCI TWG of the South Carolina CECAC.

## **8. Prior call summary**

- Review of draft summary of meeting #11
  - o Summary approved without comment or objection.

## **9. Policy Option Document**

- **RCI-1**
  - o CCS reorganized the text in implementation mechanisms and added a discussion of GDS Associates' study for Central Electric Power Cooperative. A comparison of Massachusetts IOU report and the GDS study is on page 7 of the policy option document.
    - The focus of GDS's study is on potential, whereas the MA IOU report focused on avoided cost. This is not entirely an apples-to-apples comparison. Also, the two reports use different definitions of categories for efficiency measures.
    - Also, there is a difference in that the MA IOU programs are tried & true, whereas GDS's report is an estimate of economic potential. Utility programs may include measures that are less cost-effective, for example with market transformation or other measures where the effects are mostly in the long run.
    - It was asked whether the goal for RCI-1 is roughly equivalent to 50% market penetration in GDS study? Alice answered yes.  
[CORRECTION: RCI-1 goals are closer to the 20% penetration level.] She noted that it is also useful to look at how the portfolio changes with penetration level. CCS considered between 20% and 50%.
  - o At the last TWG meeting, there were comments that the avoided cost did not reflect full forward-going costs if new generation is nuclear. Alice pointed out language on page 12 and noted that she may make a small change to this language, i.e. \$100/MWh. This language appears throughout the document
  - o Also, the TWG indicated that the policy document should discuss DSM's impact on wholesale cost of electricity, and that reduced costs from electricity savings can have macroeconomic benefits. Both of these points are now discussed here, and throughout the document.
  - o No objections to moving policy forward with tweaks as noted.
- **RCI-2**

- CCS has quantified the benefits and costs of propane and fuel oil DSM. Cost effectiveness highly negative in \$/avoided ton. GHG reductions are not large, but these highly negative costs have an impact on the cost-effectiveness of the policy in aggregate: -\$85/ton.
- CCS noted that there are some analytical leaps here due to lack of data on the cost of saved propane and fuel oil. CCS used the cost of saved natural gas instead. The cost/ton CO<sub>2</sub>e for natural gas DSM is -\$70/ton; propane and fuel oil much more negative, at least partly due to the much higher cost of these fuels. It was noted that propane and fuel oil may be most cost-effective, but there's not a lot of potential.
- CCS noted additional changes in "additional costs and benefits" here, and throughout the document.
- No objections to moving this forward to CECAC for consideration.
- **RCI-3**
  - RCI-3 is partially done, as shown in the policy option document. CCS is behind on solar hot water (SHW) due to some counterintuitive results and is refining the analysis. CCS still needs to work on the industrial SHW component, and commercial and industrial solar cooling.
  - CCS noted that the goal for solar cooling requires more discussion. The goal says "A portion of solar hot water installations should also have cooling" instead of focusing on the most cost-effective cooling load opportunities, causing this policy to look expensive. It was suggested that CCS could talk to a contractor involved in installing these technologies for guidance on how to refine the goal.
  - CCS lays out some of the assumptions for the analysis of solar cooling:
    - 30% of businesses that install SHW will adopt chillers
    - Solar cooling customers will size systems based on cooling loads.
    - 100% of energy captured is converted to cooling when chiller is installed.
    - All of these assumptions will be discussed with David Odell (of the ES TWG) & David Wach.
  - Solar Hot Water
    - CCS got feedback from the SC Solar Council on the cost of SHW. CCS suggests a mid point: \$6500 for 80 gal/day capacity.
    - It assumed that the cost will decrease by 20% between 2012 and 2020, consistent with EIA AEO cost projections.
    - Federal tax credits for installations were deflated this based on the possibility that the credits will go away.
    - The cost of commercial systems were based on residential, but with 20% reduction for economies of scale. The cost for businesses is \$40,000 on average.
    - Industrial SHW will look a lot like commercial.
  - No other questions, comments or objections on RCI-3.
- **RCI-4** – completed and accepted by CECAC.
- **RCI-5**

- CCS made minor cost-effectiveness adjustments (to the avoided cost of electricity).
- Before the meeting Alice circulated to the TWG the model Clean Energy Standard Offer Program draft provided to the CECAC by Steve Smith, in response to a comment at the last CECAC meeting. CCS proposed some language on a standard offer program, which would establish a clear set of rules that all parties can follow and provides contract certainty, and possibly long term contracts that would encourage investment (e.g., a 20-year contract). This language is shown on page 31, end of fifth bullet, and also on page 32, third bullet, second sentence.
- No questions, comments or objections on RCI-5.
- **RCI-6**
  - The changes to GHG reductions are based on a correction to the analysis. There had been an overlap among components—manufactured housing was in two categories. The result was a slight decline in benefits.
  - CCS indicated that this policy option has been copy-edited.
  - LPG was not modeled even though it represents 9% of energy use for manufactured homes.
  - No questions, comments, objections.
- **RCI-7**
  - Some copy-editing was done.
  - No questions or comments.
- **RCI-8**
  - GHG emissions reductions have been quantified, although they are hard to ground-truth; CCS has made no progress on costs due to lack of data. The plan is to present the cumulative sector total for GHG reductions, which will include this, but also a total for just cost-quantified policies, which will not. We would present this with an acknowledgement that it does not have particularly firm analysis.
  - Concern was expressed about whether RCI-8 would not be approved because its costs have not been quantified. It is important to encourage voluntary programs. The TWG member agreed that we should just do our best and acknowledge limitations, but also requested a footnote next to “not quantified” in front table with an explanation, referring back to discussion of the individual policy.
  - CCS made no changes to RCI-8.
  - No objections or comments.
- **RCI-9**
  - A tweak was made to the spreadsheet (avoided cost of electricity).
  - No questions, comments, or objections to moving forward to CECAC.

## 10. Cumulative impacts analysis

- CCS circulated a qualitative description, in table form, of the approach to the cumulative impacts analysis. Only major thing pending is RCI-3, the industrial SHW component, which will affect the results. Solar cooling may overlap with

efficiency measures in other policies, but solar hot water will not. Aggregate with overlaps will be about 90% of the sum of stand-alone policies.

- RCI-1 will overlap with other manufactured housing (RCI-6) and new public construction (RCI-7). RCI-2 is similar to RCI-1 in terms of overlaps.
- RCI-3 solar cooling will overlap with 1 and 2 DSM programs. RCI-3 SHW will be incremental to other policies.
- RCI-4 was not quantified, so there are no overlaps.
- RCI-5 – Any overlaps between CHP and RCI-1 and -2 are likely to be very small and can be ignored.
- RCI-6 overlaps with RCI-1 and -2 as noted, but RCI-6 is more aggressive than these combined. RCI-6 is included in full, while the components of RCI-1 and -2 that overlap with RCI-6 were eliminated. Similarly, RCI-7 overwhelms RCI-1 and -2 in terms of savings from gov't buildings and schools, so it was fully included.
- RCI-8 – no overlaps.
- RCI-9 was not included in the cumulative totals. It is likely fully subsumed in RCI-1, -2 and -7, which are more aggressive. A question was raised about the contribution from minimum efficiency standards for appliances not covered by federal standards? CCS noted that there are some such components, but quantifying these would be prohibitively difficult, and the incremental benefit is likely to be very small. Still, we don't want to say that this has no impact, or the CECAC may just ignore it. It is an important part of reaching the goal.

## **11. Emissions baseline**

- At the last meeting, the TWG had discussed potential adjustment for the Energy Independence and Security Act of 2007 titles III-V. CCS is still discussing how to handle this, whether to include in baseline, and will discuss this on the 16<sup>th</sup>, as well as at the upcoming CECAC meeting and with the ES TWG.

## **12. Public input and announcements**

None.

## **13. Next steps and agreements:**

1. Alice proposed another TWG meeting to deal with loose ends (e.g., the analysis of RCI-3) for Wednesday, April 16, 10:30 AM - 12:00 PM.
2. For this next meeting, the agenda will be finalizing policies as necessary, finishing the cumulative analysis, finalizing the policy option document based on CECAC changes at its April 4<sup>th</sup> meeting, and finalizing the adjustment for the Energy Independence and Security Act of 2007 titles III-V.