



www.sccclimatechange.us

MEETING SUMMARY
SOUTH CAROLINA CLIMATE, ENERGY AND COMMERCE ADVISORY
COMMITTEE

Energy Supply (ES) Technical Work Group (TWG)

Teleconference meeting #10, February 14, 2008 from 2:30 PM to 5:00 PM

Attendance:

1. Technical Work Group Members:

- Marc Tye (for Lonnie Carter – President and CEO, Santee Cooper)
- John Clark – Director, South Carolina Energy Office
- Bob Fledderman – Manager, Environment and Regulatory Assurance, MeadWestvaco
- Jerry Freck – Environmental Engineer, South Carolina Department of Health and Environmental Control
- Emerson Gower – Vice President, Southern Region, Progress Energy Carolinas
- Ben Moore – Coastal Conservation League
- Mark Hollis (for James E. Rogers – Chairman, President and CEO, Duke Energy Corporation)
- C. Dukes Scott – Executive Director, Office of Regulatory Staff
- Steve Smith – Executive Director, Southern Alliance for Clean Energy
- Joette G. Sonnenberg – Associate Laboratory Director, Energy Security, Savannah River National Laboratory
- Paul Conway (for John Tiencken – Former CEO, Santee Cooper)

2. Center for Climate Strategies (CCS) Staff:

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

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

- Michael Juras – SCDHEC; Agency Liaison

4. South Carolina Agency Observers

- Anthony James - South Carolina Office of Regulatory Staff

5. Public Attendees:

- Joseph Hayden – SCANA
- Janelle McCain – Progress Energy Carolinas
- Mitch Williams – Progress Energy Carolinas

- John Wilson – Southern Alliance for Clean Energy

6. Technical Work Group Members not attending:

- Robert Boyles – Deputy Director, Marine Resources Division, Department of Natural Resources
- Joan Bozzone – Physical Scientist, National Nuclear Security Administration
- Jeff Hinson – Utilities Manager, Clemson University
- Fred Humes – Chairman of the Board of Directors of the South Carolina Hydrogen and Fuel Cell Alliance
- Mark Lewis – Vice President, Westinghouse Electric
- Kevin Marsh – President, South Carolina Electric & Gas
- David Odell – President, Sunstore Solar of Greenville, South Carolina
- John Plodinec – Savannah River National Lab
- Nick Rigas – Director, South Carolina Institute for Energy Studies
- Coleman Smoak – General Manager, Piedmont Power

7. Background documents:

Posted at http://www.scclimatechange.us/Energy_Supply.cfm:

- 1) Meeting Notice and Agenda
- 2) Draft Summary of Meeting #9
- 3) PowerPoint for Teleconference
- 4) Policy Option Document
- 5) Link to the GDS/La Capra September, 2007 study on Renewable Energy Potential and South Carolina

8. Discussion items and key issues:

This was the 10th meeting of the ES TWG.

- 1) CCS called the meeting to order, completed the roll call and reviewed the agenda and plans for the call.
- 2) Summaries of meetings #8 and #9
 - a. Questions, comments, suggested edits
 - i. John Wilson would like it noted that there were notification issues in the last meeting because it was rescheduled at the last minute and it made it difficult for some people to make it to meeting #9
 - ii. No other objections
- 3) CCS went over the goal for meeting, which is to review policy quantification of costs and benefits and straw proposals and go over any unfinished business. However, CCS noted that since the next CECAC meeting is February 22, there isn't time to do much more than minor changes.

The next CECAC meeting will be held on February 22

Another CECAC meeting is being added to the end of the process.

- This gives some flexibility with making changes to the policies

- Tentative CECAC meetings are April 4 and May 16 (*note: this has subsequently been updated to May 9.*)
- Proposed TWG meeting *Note: This was subsequently updated to March 11, 13, and 27.*
 - Thursday, March 20 at 2:30-5pm
 - One TWG member out of town all week
 - Monday, March 24 at 2:30-5pm?
 - Tentative date
 - Ezra will send out email

9. Overview of ES policy proposals & status

- ES-1 – Renewables Portfolio
 - The CECAC suggested that CCS provide a “supply curve” of resources. CCS analyzed each component of a supply curve individually and have shown the results for these resources in 5 line items:
 - ES-1a = LaCapra study of renewables
 - ES-1b = LaCapra study plus PV, which gives a small increase in benefits
 - One TWG member asks if the LaCapra study mentioned a potential for 3% to be met by solar (no)
 - ES-1c = offshore wind only
 - ES-1d = nuclear only, does not include reprocessing. Used Moody’s estimate for capital costs
 - ES-1e = RCI-1, aggressive energy efficiency.
- ES-2 – not to be quantified
- ES-3 – Renewable energy – only analyzed 1 of the sub-proposals. High price reflects inclusion of high PV costs.
- ES-4 – regulatory model; take RCI-1 & divide savings between utilities & ratepayers. Utilities get 10% of avoided cost in model shown. This reflects the Duke “Save-A-Watt” proposal only to the extent that it includes a sharing of avoided costs. Mark Hollis pointed out that the Duke proposal gives the utilities 90% of avoided costs, so this analysis is not consistent with that proposal.
 - There was an objection to earnings sharing being the only metric, since it is unorthodox and rather narrow. It was noted that Duke’s model has never been approved so it would be unorthodox to use in the analysis
 - A suggestion is to model 90% in addition to existing analysis using 10%.
- ES-5 – New nuclear and reprocessing
 - Reprocessing complicates the analysis as we have no basis for estimating costs. Reprocessing would be difficult to implement in our analysis time period in any case.
- ES-6 – Green power purchasing
 - Voluntary program based on Santee Cooper Green Power Program
- ES-7 – Attracting businesses to SC
 - No quantification
- ES-8 –
 - Have not completed the analysis.

10. Discussion of policy options

- ES-4
 - Goals include recovery of costs, recovery of lost revenue, and incentives
 - Mark recommends that “regulatory model...on returns” should be changed to “regulatory model...on earnings” (change word “returns” to “earnings”) in text above Policy Description
 - Ezra suggests that “earnings” is ambiguous
 - Mark says “earnings” or “revenues” very important to use for utilities and much preferred
 - John Wilson thinks “earnings” is better to use over “revenues”
 - There is a difference in that “earnings” is closer to “returns” than “revenues”
 - No objection to changing to “earnings”
 - Chart on page 21 showing cost effectiveness of proposal based on different utility shares of avoided cost
 - If it were pushed up to 90%, there would be very no savings associated with the policy
 - Steven Smith feels very strongly that we should not use 90% number because there is no precedent and it is very unorthodox, and it eliminates a lot of the positive financial implications for consumers in EE investment. He would feel differently if there was some indication that SC were going to adopt this policy but there seems to be no indication that this is the case.
 - Mark thinks our current analysis is a hybrid of a Save-A-Watt model and some other model
 - Ezra agrees that is reasonable, only aspect of Save-A-Watt is that it is a sharing of avoided costs
 - Mark suggests having a couple scenarios: Ezra’s current analysis, a Save-A-Watt analysis (i.e. utility share of avoided cost is 90%? Mark not entirely sure and would need to talk to managers but yes, he thinks that might be what should be done)
 - Other suggestion from Steve is that we don’t quantify this
 - What are total GHG reductions?
 - Significant
 - Same emission reductions as RCI-1, but different costs—same measure just accruing benefits to different places (ratepayer versus utility)
 - Should this be moved to RCI?
 - Overlap with RCI policies will taken into account at the end
 - May be too late to move policy
 - Possibility of incremental EE because of this model is unproven.
 - Cost of saved electricity is \$0.03/kWh and avoided energy is about \$0.058/kWh of conventional generation, which comes out to about \$0.026/kWh difference = total economic benefit
 - TWG members would like the spreadsheets before the next CECAC meeting

- Ezra needs to talk to CCS about posting strategies (*Note: the spreadsheets were circulated via e-mail shortly after the meeting.*)
 - Current proposals: do analysis again with 10% and 90% shares for utilities. Other possibility is to not analyze this proposal. Spreadsheets to be shared if possible.
 - No objection to moving forward with these current proposals
- ES-1
 - Table on page 4 has a horizontal line missing between “nuclear” and “energy efficiency” options—these are two separate options.
 - Page 8 graph erroneously titled “renewable energy supply curve” (title on page 7.) This graph includes nuclear and should include energy efficiency, and the title should reflect this.
 - EE would be included at \$30/kWh
 - Also, it is “low-head hydro plus PV” but “plus PV” got cut off in the document.
 - Where do LaCapra numbers come from in their presentation?
 - Only the powerpoint version of this study is available, analytical details and sources are scarce.
 - TWG member has concerns with using these numbers, specifically for off-shore wind. Why do LaCapra’s numbers diverge so far from NRELS?
 - LaCapra didn’t estimate off-shore, only on-shore
 - Where does off-shore wind potential in POD come from?
 - This number is just size of installations from a number of studies
 - CCS made a “guess” about the amount of off-shore wind
 - John Clark ok with this, but thinks we should note softness of the assumption
 - Question about transmission for off-shore wind and feasibility
 - It needs to be looked at
 - On page 8 (and throughout energy efficiency analyses), CCS used Duke avoided cost filing for cost of saved energy (\$0.03/kWh). Data is provided from other states which are consistent with this estimate.
 - John Wilson would like a better summary of renewable resource potential assumed to be available on table on page 7
 - Just a column needs to be added to show potential as well
 - John has lots of resources but can’t tell if there are additional things he can contribute or not
 - Kenji says LaCapra assumptions used for everything except wind
 - John thinks we should make this more clear
 - Bob Fledderman asked about the distinction between 1a and 1b
 - Only 100 MW of PV and impact is quite small but impacts price significantly.
 - Recommendations welcome for what a policy looks like based on these constituent parts
 - Three parts:
 - EE

- RE
 - “state of the art” nuclear plants
 - Ezra suggests at this point we could bifurcate the policy into three separate components, but we need percentages
 - TWG member suggests taking results to CECAC
 - Does group want to actually recommend something to CECAC?
 - Ezra suggests making it homework for people to think of specific proposals before CECAC
 - TWG member thinks proposal from NC would be appropriate
 - 12.5% of all MW would be renewable with option for utility to implement up to 5% EE
 - New or total renewables to be included?
 - Amount existing is so small it doesn’t really matter
 - Defined as a percent of all sales
 - Does not include any nuclear in NC
 - No state has included nuclear in RPS
 - This would be a departure from what the CECAC recommended
 - A TWG member does not support this proposal
 - Thought there would be a supply curve with all of the options
 - Existing graph will be fixed to include EE
 - Ezra is happy to look at a few different mixes
 - Proposed to analyze one like other states (i.e. NC) and one including nuclear
 - NC had input from a lot of different stakeholders
 - One including nuclear has never been done before and if we want to do it and include a lot of nuclear and break the bank, then go for it
 - Ezra proposes that utilities and others think of a method for proceeding and bring it to the CECAC meeting next week
 - Mark Hollis says they will certainly try
 - No objection to moving forward and TWG members bringing strategies for ES-1 to next CECAC meeting
- ES-2
 - AQ member noted that a few comments were left out of the discussion from the last meeting
 - Energy Office wanted to put goal about “completing a detailed evaluation study for off-shore wind energy potential for South Carolina” as goal 1
 - Establishing hydrogen infrastructures that are accessible to the general public in South Carolina”—should be made more generic and 80% should be taken out and base it on (population?) as goal 2
 - Also wanted to suggest a “Create a Technology Advisor position in the governor’s office” to include as goal 3
 - Ezra will make changes and no objections by TWG
 - Other edits to proposal:

- \$200M program should be changed to \$200K
 - Split #5 under implementation mechanisms after R&D Infrastructure
 - Delete “funding through state lottery” and let state decide how programs should be funded
 - No objections to moving forward with these changes
- ES-3
 - Fourth bullet under Goals is confusing: “Feed-in tariffs for...by guaranteeing rate-based recovery”
 - Rate-based or feed-in tariff?
 - John Wilson says incentives and wording taken from other CCS state policies and edited to reflect SC
 - Tariff rate taken from PUC at these levels and utility guarantees it can add at these costs
 - On first-come first-serve basis
 - This is a technology promoting approach because costs are averaging costs rather than project costs, for instance first wind project pays a lot more than second because of the shakedown of the permitting process
 - Depends on what it applies to
 - Should it only apply to PV or off-shore wind for example?
 - Not talking about PV in that magnitude
 - Some potential for on-shore wind
 - Some potential for low-head hydro
 - Not for biomass, because biomass is not zero-pollution
 - We did not analyze the first bullet because of a lack of understanding
 - John Clark says that’s the most important one & explains: with the cap, it renders the credit useless because companies don’t know if they will actually get the incentive (i.e., it may be oversubscribed) early enough for it to help with financing.
 - This does not increase cost incurred to state budget, just removes a mechanism whereby the incentives are ineffective
 - Referring to a law passed June last year, groups are working with the legislature to remove the caps
 - Ezra says, to analyze this, CCS would reduce capital costs of by 25% to reflect the subsidy and assume that anyone who could proceed with that subsidy would implement—i.e., no caps would be considered.
 - Ezra doesn’t have a supply curve available for biomass
 - Bullet three: You only get the subsidy if it isn’t tied to a RPS?
 - Discussion of whether to keep this in.
 - TWG member says leave it there because this is the alternative to ES-1
 - Maybe get rid of grid connection and leave cap?
 - We have just analyzed the second goal based on an assumption about what we thought SC would spend with subsidies
 - No biomass addressed in bullet 2
 - Addressed in other bullets, this subsidy isn’t necessary for biomass

- Biomass is in key assumptions table but says NA
- Is this a high assumption for SC spending?
 - Analysis doesn't assume it is all spent here
 - \$25 million is like a set-aside for solar or more expensive resources
- Ezra proposes we present our results to CECAC and also take TWG feedback on what else to do
- Biomass energy discussion:
 - TWG member notes that there are direct biomass projects (3 off top of his head) being built in SC right now without subsidy
 - There is a big variation in costs of biomass projects
 - Major SC industry said that incentive would make a difference between implementing biomass (wood-burning) and not
 - How many MW should we assume gets built with that \$0.01/kWh incentive that wouldn't otherwise get built?
 - John mentions that landfill gas used as the greatest resource for biomass, although wood chips are also used
 - Landfill gas already affordable?
 - "Subsidized" by Santee Cooper's Green Power Program
- A TWG member requests that grid connection "on or directly connected to the SC grid" be taken out of the third bullet only
- John Wilson suggests a method for analyzing the **third bullet under policy design**: the resources that would qualify as non-polluting (PV, off-shore wind, on shore wind, and low-head hydro) typically have a CF of 30%. Costs equal the difference between incentives numbers specified and avoided cost.
 - For wind, PV, and hydro—average across all of them without making a mix of the resources
 - Wouldn't care about the cost of the resource, just care about the guaranteed rate
 - Ezra says this can be done
- No objections to moving on in this way

Comment [AN1]: 4th?

ES-6

- Green-power premium is assumed to cover administrative costs, customer acquisition costs, and incremental cost of green power.
- CCS estimated that participants would get up to 30% of their power from green power (from NREL report). The same was assumed for commercial and industrial. CCS mentioned that a Santee Cooper employee gave information about participation. (see table on pg.28).
- The 1% represents percentage of customers (not sales)
- Has anyone spoken with the NC Green Power program about participation in NC?
- John Wilson noted that the NC program doesn't have 3rd party certification, which reduces costs. SACE didn't endorse the NC program because there is no certification.
- Ezra: Cost effectiveness as reported on p. 27, won't change based on participation

John Clark: need #s on biomass for tomorrow? EH: no, won't get in on time.

11. CCS solicited input from the public. No comments or questions were raised.

12. Next steps and agreements:

- 4) The next scheduled meeting of the TWG is on March 27, however it is likely that we will need to have another ES meeting before then to resolve outstanding issues on some of the policy options. Ezra will suggest a time via email.