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

**Energy Supply (ES) Technical Work Group (TWG)**

Teleconference meeting #10b, March 13, 2008 from 3:00 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
- Kevin Marsh – President, South Carolina Electric & Gas
- Ben Moore – Coastal Conservation League
- David Odell – President, Sunstore Solar of Greenville, South Carolina
- 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
- Coleman Smoak – General Manager, Piedmont Power
- John Tiencken – Former CEO, Santee Cooper

2. Center for Climate Strategies (CCS) Staff:

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

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:

- Stuart Ames – Progress Energy Carolinas

- Tom Howell
- Joe Lynch – South Carolina Electric & Gas
- Jim Neeley – South Carolina Electric & Gas
- 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
- John Plodinec – Savannah River National Lab
- Nick Rigas – Director, South Carolina Institute for Energy Studies
- Joette G. Sonnenberg – Associate Laboratory Director, Energy Security, Savannah River National Laboratory

**Background documents:**

Posted at [http://www.scclimatechange.us/Energy\\_Supply.cfm](http://www.scclimatechange.us/Energy_Supply.cfm):

1. Meeting Notice and Agenda
2. Policy Options Document, posted on the CECAC website for the CECAC meeting on February 15

Emailed to TWG members:

1. ES-1 Portfolio Analyzer Spreadsheet Tool

**Discussion items and key issues:**

This was a supplementary 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. ES-1
  - a. Prior to the meeting, Ezra circulated SCANA’s estimate of busbar resource costs from Henry Barton. Also, he indicated that he spoke with John Clark regarding resource costs. Is there agreement that the low-cost resources should be used 1<sup>st</sup>?
  - b. John Clark noted the variation in estimates for costs and potentials from different sources. SCE&G and Santee Cooper have plans to build nuclear plants, one to come online in 2018 and the other in 2019, in their resource plans. Duke Energy is planning to build two nuclear plants (total capacity about 2000 MW) by 2019. John suggested that the “Clean Energy Portfolio” include the four proposed nuclear plants, plus all resource options up to the cost of the nuclear plants, including energy efficiency and renewable energy. This strategy avoids picking an arbitrary cut-off: everything below \$125/MWh (SCANA’s levelized cost estimate) meets the cut, ignore everything else.

- c. Tom Peterson said that how the portfolio should be framed was discussed at the last CECAC meeting. Resources would be shown in a supply curve, with costs going up for each step, and each step getting some amount of emissions reductions. The group might decide to move up pieces of the supply curve not entirely on an economic basis.
- d. Ezra questioned whether it was realistic to assume that four new nuclear plants would be built in SC by 2020. These plants would meet about 28% of SC's electricity needs, on top of the large portion it's already getting from existing nuclear. John Clark pointed out that it won't be 28%, because load will be higher by the time they come online. Henry Barton said that the time frame for completion of SCANA's projects may have changed.
- e. Ezra suggested that these plants should be included in the emissions baseline if we really believe they are going to be built, instead of as a policy proposal. John Clark said that the projections for the baseline were done last spring using EIA data. At that time, the utilities pointed out that the planned nuclear plants were not in there, but the CECAC decided not to include them because they were uncertain (none of utilities had secured a license or site at time). EIA will assume that increases in generation will be coal unless the state/utilities direct it otherwise. Emerson asked the other utilities, do they agree that it will be about 1 year until final decision whether to proceed with the proposals?
- f. There was a proposal to analyze ES-1 two ways: all EE & RE under \$125/MWh, with and without the proposed nuclear plants. Certain feasibility issues were raised. How much of the off-shore wind potential should be included? Is it realistic to expect 4 new nukes to be built in SC after a hiatus of more than 20 years?
- g. It was noted that this economic "dispatch" approach raises a lot of questions. Why not stick with 3/3/6 and 10/all RE potential/0 portfolios? Ezra explained that the portfolio analyzer assumes that all RE resources are included in the portfolio in proportion to their technical potentials.
- h. For small hydro, on-shore wind, and off-shore wind, there were some suggestions and comments on feasible potential numbers to use in the analysis. Ezra noted that we will have to have the humility to realize that any numbers we use in the analysis won't be perfect—inevitably, the actual outcome will be different in some ways from what we predict. There was a suggestion to use the NREL potentials for on-shore wind & hydro. John Wilson's numbers, based on NREL data, put hydro potential at 450MW, as opposed to only 200 MW in the La Capra study. John Tiencken expressed support for increasing the GDS/LaCapra potential figures. The TWG agreed on 100 MW for small hydro, 50 MW for on-shore wind, and 1000 MW for off-shore wind (two 500 MW projects installed in 2015 & 2017), as long as it is indicated that the timing and potential assumptions are "for study purposes". Also, the policy option document should indicate concerns about the feasibility of permitting, siting, and hurricanes
- i. For biomass potential, the TWG will use GDS's figures.

- j. For PV, NREL shows a declining cost of PV at \$130/MWh by 2015, and \$100/MWh by 2020. John Clark also provide some other numbers from NREL: 15 MW of PV at \$100/MWh in 2015, and \$70 MWh in 2020, including a 25% tax credit. Ezra will email John Clark's figures to the TWG. The analysis will assume 15 MW of PV.
  - k. John Wilson asked about solar hot water. That is being handled by the RCI TWG.
  - l. For nuclear power, the analysis will assume 4000 MW of feasible potential at \$5700/kw, equivalent to \$125/MWh busbar (per Henry Barton's calculations).
  - m. For the 3/3/6 portfolio, the analysis will use resources on a pro-rata basis given the feasible potentials from the GDS study and as modified during this call. Ezra indicated that he will modify the portfolio analyzer for the new resources and costs. The 10/all renewable potential/0 portfolio will use the feasible potentials from the GDS study and as modified during this call, except no nuclear power will be assumed.
3. ES-5
- a. Ezra reviewed the goals as stated in the Policy Option Document, which states that SC should evaluate the reprocessing option. Ezra suggests editing goal (2) to reflect both new nuclear power and reprocessing.
  - b. Would reprocessing occur by 2020? This process has an eye on the long term but is only scoring out benefits through 2020. Ezra proposed that reprocessing not be quantified, just recommended for further study.
  - c. Concern was expressed that reprocessing may significantly increase other waste streams. There was a request to note concerns about reprocessing being uneconomic in the feasibility issues section of the document.
  - d. Mark Hollis will send the Boston study to Ezra for circulation to the TWG.
4. CCS solicited input from the public.
- a. Tom Howell asked whether the costs for nuclear power include security for plant and waste. If not, who would bear the costs—taxpayers, ratepayers? He advocated using a range of costs, and indicating the uncertainties. Ezra noted that the analysis does consider ranges. Tom also noted that Europe has had to shut down plants because of water shortages.

**Next steps and agreements:**

- 5. At its next meeting, the TWG will continue its refinement of these and other policy options and review any available results, as well as proposed updates for the Inventory and Forecast. Ezra recommended that the next TWG meeting be changed to 2.5 hours, from 2:30 – 5:00 PM on March 27, 2008. There were no objections to extending the meeting to 2.5 hours.