



www.arclimatechange.us

MEETING SUMMARY
ARKANSAS GOVERNOR'S COMMISSION ON GLOBAL WARMING
Energy Supply (ES) Technical Work Group (TWG)
Call #9, July 8, 2008
2:00 pm to 3:30 pm Central Time

Attendees

GCGW: Nick Brown, Rob Fisher; Art Hobson, PhD.; Kevan Inboden; Robert McAfee, PhD; Hugh McDonald; Kevin Smith

Governor's Office: Jillian Hicks

Advisory Body Members: John Bethel

Center for Climate Strategies (CCS): Tom Peterson, Bill Dougherty, Joan O'Callaghan

Background Documents (All posted at www.arclimatechange.us/ee.cfm)

1. Notice and Agenda
2. PowerPoint for Teleconference
3. Draft ES Policy Option Descriptions

Introductions and Review of Agenda

Tom Peterson initiated the call and welcomed the TWG members, completed a roll call of the members of the Technical Work Group, and briefly reviewed the items from Call #8. Policy options ES-1, ES-2, ES-3a, and ES-7 were discussed during the last TWG call. ES-3a and ES-7 required further discussion.

Discussion of Policy Options

Six of the policy options were discussed (i.e., ES-3A, ES-3B, ES-4, ES-5, ES-6, ES-7). The agreed-upon plan is that the remaining options—ES-8 (Transmission System Upgrades), ES-9 (Nuclear Power), ES-10 (Carbon Tax) ES-11 (Efficiency Improvements and Repowering of Existing Plants)—will be discussed during the next ES TWG Meeting.

ES-3A—Renewable Portfolio Standard (RPS)

During Meeting #9, the TWG agreed to add hydropower to the definition of an RPS. This policy option is based on economic dispatch, consisting of a marginal supply curve that moves up from the lowest cost-per-ton elements of an RPS to the highest.

The TWG approved Dougherty's suggested starting point for modeling the GHG benefits and costs of an RPS, which would use the Department of Energy/Energy Information

Administration's (EIA's) Annual Energy Outlook 2008 data for the Southwest Power Pool (SPP) region and mix of renewables, and EIA's National Energy Modeling System model as a base source of data (at least for wind), which includes the least-cost approach for developing expansion plans for each NERC (North American Electric Reliability Corporation) region. Brown noted that there are too many uncertainties regarding wind, including availability and location, and before being able to guide the CCS analysis, the TWG needs to know the magnitude of the analysis—whether it will just look at wind or solar as well.

ES-3B—Renewable Energy Feed-In Tariff (REFIT)

Dougherty explained that ES-3A is a mandate for meeting Arkansas' energy demand with 15% of renewable energy sources by a certain year, while ES-3B is an incentive-based approach. They potentially represent different approaches to achieving the same level of penetration by renewable energy (i.e., 15%). A TWG member noted that the TWG prefers ES-3B to ES-3A, and would like to meet all the demand needed with renewable energy; if this isn't feasible, the TWG would recommend a mandate.

The same TWG member proposed a new definition of renewable energy, which he will send to Dougherty. Dougherty confirmed he has the information he needs to proceed with quantifying this policy option.

ES-4—Grid-Based Renewable Energy Incentives and/or Barrier Removal

Peterson pointed out that the Policy Description has a good amount of detail that might be moved to the Implementation Mechanisms section.

Some discussion followed about the similarities between ES-3B and ES-4 and whether to combine them. The TWG decided they're complementary and should stand alone.

The TWG also decided to delete "grid-based" from the title of this policy option, because the policy is intended to focus on incentives for all (including small, micro, etc.) distributed generation sources, and not just large centralized sources of renewable energy. A TWG member suggested this policy option might provide an avenue for subsidizing transmission of renewable energy.

Solar hot water and distributed solar photovoltaic were previously included in the Residential, Commercial, and Industrial (RCI) TWG, but were deleted them because they are to be taken up by the ES TWG.

The same TWG member asked why \$1,500 per kilowatt was used as the incentive. No one on the TWG seemed to know the answer. The TWG approved Dougherty's suggestion to analyze tax credits for both 30% and 50% of the capital costs and present the results at the next TWG meeting.

ES-5—Approaches Benefiting From Regional Application

Peterson explained that this option isn't to be quantified. But the TWG wanted to provide Arkansas guidance on the steps it might take toward regional approaches. He confirmed that LA, MS, AL, TX, OK, MO, and TN don't have commissions similar to the GCGW. However SC, NC, FL, VA, MD do. A TWG member suggested consulting the CCS web site for an update of

states currently involved in this process. Florida has a separate TWG that is examining options for regional cooperation on a cap-and-trade (C&T) system and other policies, such as regional appliance standards that would enable wholesalers to continue storing their inventories regionally.

The TWG agreed to include in this policy option a recommendation to work with the National Conference of State Legislatures, the Southern Legislative Conference, the Council of State Governments, and the National Governors Association. Smith will submit suggestions for potential partners for discussion during the next TWG meeting.

ES-6—Combined Heat and Power (CHP)

A TWG member commented that some members would like to see a more aggressive increase in energy efficiency through CHP. Some small plants in Arkansas are using this technology, but most of the large plants aren't. He suggested this could result in a potential increase from the current 35%–40% rate of energy efficiency to more than 80%. He read a proposed, more detailed, goal statement, which he will send to Dougherty.

ES-7—Geological Underground Sequestration for New Plants

During Meeting #9, the ES TWG agreed to delete: (1) any references to specific plants in the Policy Description (i.e., Plum Point and Hempstead), and (2) the text under the Related Policies/Programs in Place section. Also during that meeting, the TWG suggested that CCS work on several modeling scenarios. Dougherty described the CCS understanding of these scenarios as follows:

1. Do not build the Plum Point or Hempstead plants.
2. Build both plants, but with no mitigation technologies.
3. Build both plants with carbon capture and storage, transmitting the carbon dioxide (CO₂) through the existing CO₂ pipeline in Arkansas.
4. Build both plants and capture and store the CO₂ underground in Arkansas.
5. Build both plants and capture with integrated gasification combined-cycle (IGCC) technology and similar technologies.
6. Build both plants, but with three sensitivities: (1) offsets, (2) IGCC at the outset, and (3) natural gas combined-cycle technology
7. Do not build both plants, and meet the demand with energy efficiency measures.
8. Build both plants, but have the Hempstead plant come online in 2020 instead of 2012; install CCS technology on both plants in 2020.

TWG members offered several comments on the scenarios as follows:

Scenario 1—Dougherty responded to a question about the no-build case, explaining that if the plants aren't built, Arkansas would need to import electricity from the surrounding power pool. Both greenhouse gas (GHG) reductions and the cost per ton of reduction will be modeled, based on shifts in energy supply and demand.

Scenario 3—As described, this scenario was incorrectly structured because Arkansas doesn't have a CO₂ pipeline (this exists in Mississippi, not Arkansas). It was decided that CCS will put an asterisk on that scenario and determine whether analyzing a line connecting to the Mississippi line would be worthwhile.

Scenario 7—A TWG member suggested that CCS analyze the recommendation of Judge David Newburn, which consisted of a blend of energy efficiency, renewable energy, and natural gas measures. He suggested two sensitivities: (1) a 50% share for energy efficiency and a 50% share for natural gas, and (2) a 1/3 share for energy efficiency, natural gas, and renewable energy. He noted that where power plants are actively involved, energy efficiency will be considered demand-side management (DSM), which tends to overlap with policy option RCI-2 (Utility and Non-Utility DSM for Electricity and Natural Gas). In response to another TWG member's input that replacing the two planned 600-megawatt (MW) plants in the timeframes required with energy efficiency and renewables would likely be impossible, he clarified that these sensitivities should only be applied to the Hempstead Plant, as the Plum Point Plant should be considered in the Reference Case for all scenarios. CCS will look at the amount of power that will need to be provided by energy efficiency, natural gas, and renewables if only the Hempstead Plant isn't built, and will replace the do not build both plants scenarios (1 & 7) with do not build Hempstead.

Dougherty asked the TWG to point him to information regarding avoided costs, capacity expansion of the system, and historical cost data (dollars per megawatt-hour) for DSM programs. A TWG member provided Sammie Cox's e-mail address (slcox@aep.com). An Advisory Body member will provide Dougherty information from an analysis of the Turk Plant that concluded that using energy efficiency measures alone will be unable to offset the demand by 2012; another TWG member will provide contacts at Plum Point.

Date and Time for ES TWG Meeting #10

Meeting #10, originally scheduled for July 16, was moved forward to accommodate work schedules and allow for additional quantification of policy options before the next TWG conference call.

- Meeting #10, Friday, July 25, 2008, 10:00 am – 12:00 pm CDT

Agenda for ES TWG Meeting #10

ES-8 (Transmission System Upgrades), ES-9 (Nuclear Power), ES-10 (Carbon Tax), and ES-11 (Efficiency Improvements and Repowering of Existing Plants) will be discussed during ES TWG Meeting #10. Summaries of Meetings #8 and #9 will be presented for the TWG's approval. The initial quantification of several policy options will be presented, and the TWG will decide which options are ready for the GCGW's consideration at the July 31 GCGW meeting.

Public Input and Announcements

None.