BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

COLUMBIA, SOUTH CAROLINA

HEARING #10-11114 APRIL 28, 2010 3:00 P.M.

ALLOWABLE EX PARTE BRIEFING

REQUESTED BY PROGRESS ENERGY CAROLINAS - Resource Planning, Industry, and Environmental Issues

TRANSCRIPT OF PROCEEDINGS

COMMISSIONERS PRESENT: Elizabeth B. 'Lib' FLEMING, *CHAIRMAN;* and COMMISSIONERS David A. WRIGHT, G. O'Neal HAMILTON, Randy MITCHELL, and Swain E. WHITFIELD.

ADVISOR TO COMMISSION: Joseph Melchers, Esq.

STAFF: Jocelyn B. Boyd, Interim Chief Clerk/Administrator; James Spearman, Ph.D., Executive Assistant to the Commissioners; B. Randall Dong, Esq., Legal Staff; Tom Ellison and Phil Riley, Advisory Staff; and Jo Elizabeth M. Wheat, CVR-CM-GNSC, Court Reporter.

APPEARANCES:

SHEALY BOLAND REIBOLD, ESQUIRE, representing the SOUTH CAROLINA OFFICE OF REGULATORY STAFF

LEN ANTHONY, ESQUIRE, along with *HAROLD JAMES, KENT FONVIELLE, and DAN KEMP,* presenters, representing PROGRESS ENERGY CAROLINAS

I N D E X

PAGE

Please note: PowerPoint presentations are attached hereto.

P R O C E E D I N G

CHAIRMAN FLEMING: This ex parte briefing will now come to order. We're very happy to have all of you here today and are looking forward to what you have to say.

At this time I'm going to ask for Attorney Joseph Melchers to tell us about the briefing.

MR. MELCHERS: Thank you, Madam Chairman, Commissioners. This is a noticed allowable ex parte briefing. It was requested by Progress Energy Carolinas, Inc., and we are scheduled to meet here in the Commission meeting room, today, April 28, 2010, commencing at the conclusion of the Commission meeting. The subject matter to be discussed at this briefing is resource planning, industry, and environmental issues.

CHAIRMAN FLEMING: All right, thank you. Who -- well, I'm not going to say, “Who represents…”; I know that Len Anthony is representing Progress Energy today, and I'll turn it over to you to introduce your guests and tell us a little bit about today.

MR. ANTHONY: Thank you, Madam Chairman, members of the Commission. We're delighted that you've allowed us to come back after the first one

-- we must not have been that bad -- to allow us to pick up where we left off with regard to --

CHAIRMAN FLEMING: We depend on the electric energy utilities to keep our lives very interesting, Mr. Anthony.

MR. ANTHONY: We will try to entertain you today, as best we can. The last couple of meetings, we have talked about integrated resource planning in the traditional sense, where we talk about a load forecast, and then we look at the resources that are available to meet that forecast and how we select those resources. Well, today we're going to take another step and get more into current industry issues that are drastically affecting the decision-making process.

And so our first speaker will be Dan Kemp. Dan is Associate General Counsel II -- we have a weird way of classifying things, but Dan is our expert in environmental laws and regulations. Dan is going to be addressing many of the things that are in the trade publications every day: in particular, greenhouse gas regulation, what the EPA is doing, and of course, what that may drive Congress to do if they decide to react to what the EPA is doing in that regard. He's also going to

talk about coal; in particular, Central Appalachian coal, which is where Progress Energy Carolinas gets most of its coal, and what have been the impacts of the initiatives to stop mountaintop mining, as well as the recent explosion regarding Massey, and what that does to the availability of coal and how that impacts our system.

Kent Fonvielle will pick up from that discussion. Kent is the director of fleet optimization. In Kent's previous life -- he's had many previous lives -- his most recent one was being responsible for our compliance with the North Carolina law on renewable energy portfolio standards. Kent is going to get into what I consider the next step. After we select the resources that our forecasts indicate are needed, how do we use those resources. How do we stack them up and dispatch them in a manner that minimizes cost to our customers. And that's addressed in our annual fuel cases, but we really don't get into the detail of what goes on behind the scenes to look at the next day's forecast, look at what units are available. Some of them may have to be out of service because it's a spring or a fall time period and some are out for maintenance,

and what are the relative prices of the fuels, coal versus natural gas. Natural gas is very cheap now, which makes it very competitive with coal and the heat rate units to drive the decision-making process. So Kent is going to talk about that, as well as what the mountaintop mining and the Massey explosion and other things that are impacting coal, how that drives his decision-making process.

And then last, and certainly not least, Harold James is a director of just about everything at Progress Energy Carolinas, but the only three that we list are retail strategy, wholesale term contracts, and then overall responsibility for our renewable energy portfolio standard compliance in North Carolina. That is, procuring kilowatt-hours from wind, solar, and in North Carolina we have a special, you know, place in our heart for chicken poop and pig poop. I'm not sure why, but we do. And so he'll be addressing what we're seeing with regard to the availability and the prices of solar and wind, and he also is going to pick up with our smart grid opportunities.

Probably today, certainly by tomorrow, it will be announced that Progress Energy Carolinas has been awarded $100 million of DOE funding to further

smart grid investments, and so we'll be picking up as to where we are in our smart grid analysis and decision-making and where we think we're going to go.

Before I turn it over to those three experts, I would like to give you the good news. Last time we were here, we were asked about industrial growth and new jobs and investments. And I'm happy to tell you -- you may already know this -- we've got a number of expansions or new announcements of new industrial load in our territory. We've got ACAS Landing Gear, in Marion, with a $5 million capital investment, 300 employees, over three years. Haier, H-a-i-e-r -- I see the plant every time I drive here, not sure of how to pronounce that -- an expansion; the number of additional jobs has not been announced, but the expansion includes leasing the old Dana building for warehouse space. Material Innovation Technologies, $5 million capital investment, 140 jobs, over three years. McCall Farms, $3 million capital investment, 30 new jobs. PolyQuest, $8 million capital investment, 30 new jobs. And Solar Energy Initiatives, $3 million capital investment, 200 jobs. And finally, Supremes, LLC, in Mullins, $3 million capital

investment, 40 jobs.

So hopefully the economy is turning around. We're seeing some industrial improvement in our territory, and we'll continue to work hard to make that happen.

So with that, we'll ask Mr. Kemp to start explaining all kinds of acronyms and obstacles and challenges that the EPA is presenting to us.

CHAIRMAN FLEMING: All right, very good.

MR. KEMP: Madam Chairman, members of the Commission, as Len indicated, in my case that's not an alias; I am Dan Kemp. And I'm very, very pleased to be able to join you here today and discuss a few of the issues that are challenging our industry from an environmental standpoint.

[PowerPoint "Environmental Overview" Slide 1]

And if you all have equipment that I can operate -- and I'm not exactly technically competent, so if we go astray, it's certainly not your equipment but the operator who is challenged.

[PowerPoint "Environmental Overview" Slide 2]

I want to touch on a few issues that are besetting us. There are a number of them that are,

but these are the ones that are occupying a good deal of our time. One that's getting a good deal of press is climate change and how CO_2 emissions are going to be regulated in a going-forward mode. US EPA has been spending a good deal of time over the last few years trying to assess and then act on what existing legislation allows it to do by way of CO_2 regulation. Congress has been wrestling with this issue for the last few years, but has yet to pass a statute that would form the basis for that kind of regulation, so US EPA has been moving forward on that matter. And there are four items that I want to touch on here that form the foundation for CO_2 and greenhouse gas regulation on a going-forward basis.

The first is an action taken by the federal administrator last December, wherein she concluded that all six greenhouse gases -- and I won't attempt to name them; the dominant one is CO_2 -- present an endangerment to public health and welfare, and that emissions from mobile sources contribute to that endangerment. As a consequence, all future vehicle manufacture is going to be controlled by this finding. The finding does several things beyond just focusing regulation on

automobiles and light-duty trucks; it also triggers a couple of steps that the agency has also taken, the first in April, early April of this year, that actually sets controls for light-duty vehicles. The outcome of setting that set of controls is that it also triggers, ultimately, controls for stationary sources -- power plants, factories, and otherwise -- beginning in January 2011.

So, we now have, with those two steps and with the succeeding two on this slide --

[PowerPoint "Environmental Overview" Slide 3]

-- a framework for CO_2 regulation in this country, under existing law.

The other steps taken are a reconsideration of the so-called Johnson Memo that related to new source review and was issued several years ago by the previous administrator. The memo concluded that new source review is, in fact, triggered when a rule requiring actual control of a pollutant is adopted. We now have that predicate with CO_2. And it's estimated that the motor vehicle greenhouse gas rule can probably be complied with and will be imposed on light-duty vehicles as early as January 2nd of next year. So, thereafter, we are looking

at the prospect of dealing with so-called best available control requirements for CO_2 controls, to be imposed on stationary sources as well as vehicles.

As a concluding step taken by the agency in October of last year, the tailoring rule was proposed, which would impose controls on emissions for sources that exceeded 25,000 tons a year. The reason that is called a tailoring rule is that, under existing new source review rules, any source which takes steps which would increase emissions above 250 tons a year would trigger that kind of review and the imposition of new source requirements. It was readily recognized that 250 tons a year of CO_2 is not very much. We probably collectively, in this room, exhale and produce that kind of level. 25,000 tons was proposed in the rule. Congress has been reviewing the rule over the last few months, and there is pressure to increase that threshold to 75,000 tons a year, as a triggering level.

Right now, it's estimated the rule probably will not be released until May. As I've mentioned earlier, congressional action is ongoing. There is a bill that's been enacted in the House, the so-

called Waxman-Markey bill. Senators Kerry and Lieberman and Wilkerson are here. Senator Graham had collaborated on the development of a Senate bill that would be companion to the House bill, but because of other national issues that are currently occupying the Congress, Senator Graham has stepped back away from that collaboration at this point in time. So I'm not at all sure when we might expect to see proposed legislation in the Senate, but it's definitely on their minds.

The EPA has also considered regulating CO_2 emissions in the context of the Clean Water Act. CO_2 emissions can produce carbonic acid in the world's oceans, and for a while they considered -- the agency considered whether or not the Clean Water Act would be a vehicle for purposes of regulating CO_2 emissions, which is a fairly novel consideration. I think at this point they may have tabled that effort, because the Clean Water Act primarily regulates point sources, as opposed to broad water reaches, and would be a cumbersome means of trying to reduce CO_2 emissions source by source.

[PowerPoint "Environmental Overview" Slide 4]

In addition to CO_2, we are following and being confronted with challenges with regard to major air source regulation. Not necessarily in order of importance, but the items we're looking at right now include regulatory efforts to impose national emission standards for hazardous air pollutants under Section 112 of the Clean Air Act, specifically focused on mercury, to replace the efforts that were put into the so-called Clean Air mercury rule vacated by the DC Circuit. We've engaged in an information collection request response, which has taken us a fair amount of time, an initial survey gathering of information which was filed in March. We are still collecting and collating information for a second round of information submittal that profiles emissions from our power plants. We've engaged in between $¼ and $½ million worth of emission testing for this one response alone. And at the conclusion of the submission of that information, the agency will be engaging in a rulemaking, shorthanded there as MACT, which is simply maximum available control technology. That's one of a number of acronyms that relate to control technologies, all of which are designed to compel the downward movement of

emissions to the extent possible.

We expect the MACT rule will probably produce a proposal next March, and a final rule to be issued in November. That rule might be as broad as all hazardous pollutants, including hydrochloric acid, nickel, arsenic, chromium, cadmium, in addition to mercury, and it may be both source specific -- that is, plant by plant -- or fuel specific, whether it's coal, gas, or oil.

Another rulemaking that we are following closely is the so-called CAIR rule. That rule was vacated two years ago by the DC Circuit, reinstated subject to a follow-up rulemaking by US EPA, to correct legal defects in the original proposal and the rule itself. The agency has been working on that rule for some time. We're expecting them to issue it in proposed form in early May or June -- late May or early June. It's been a fairly well guarded rulemaking. There's not a whole lot that's known about it right now. We suspect, though, that it will contain emissions tax for criteria pollutants like sulfur dioxide and nitrogen oxides, and that very limited trading will be allowed as a result of the rule, perhaps intrastate as opposed to interstate, which is the defect that the court

focused a lot of time on in its decision.

And finally, on the slide, we are engaged in a number of projects, which you're aware of, I know. We've proposed the construction of gas-fired generation to replace our Lee Plant in North Carolina. The replacement's generation will be gas-fired, will be three proposed combined-cycle combustion turbines and one steam generator. Also, we have announced, I think, generally, a gas-fired facility for the Wilmington area. That's in the planning stage.

Permitting, specifically, as a rule setting, is intended to cover such things as new source review for existing sources. You all no doubt have been following over a long period of time US EPA's enforcement initiative begun in 1999 which targeted replacement -- replacement activities at power plants which the agency's alleged triggered new source review requirements and permitting requirements and control requirements, and that spawned a great deal of litigation. That initiative is, with various levels of activity, still ongoing, and it's an area we follow very closely because we do keep our units repaired and, as we do, we want to be sure that we're engaging in

activity that does not compel a permit, which can slow the process down considerably, and obviously if you want to keep your automobile maintained, you don't want to get a permit to change the oil or a filter. And so we pay close attention to how the litigation around the country is going, and what courts are holding with regard to various activities.

I can report to you that a recent decision coming out of an eastern Tennessee Federal District Court has held that repair activities involving economizers and reheaters -- the sorts of things that we confront from time to time -- have been held by the court to be routine in nature, and not within the new source review rule, which is helpful guidance for our purposes.

I'll also note, although it's not on the slide, that there is a fair amount of activity with regard to finalizing changes to the national ambient air quality standards for a number of pollutants, five of the six, including NO_2, sulfur dioxide, ozone, particulate matter. These national ambient air quality standards set numbers which then control regulatory steps that set emissions, that are designed to meet and maintain those

standards. So every time those standards change, we have to be very, very thoughtful about what those changes imply in the way of, ultimately, emission controls for our generating units. It's a very, very busy time in the air area.

[PowerPoint "Environmental Overview" Slide 5]

To conclude my discussion, I wanted to touch on a couple of things that are affecting coal as an energy source, and give you some idea of how we are monitoring these activities and how we evaluate what the consequences of some of these steps may be for us.

First of all, mountaintop mining, that's almost exclusively an Appalachian Region issue. And it's not so much mountaintop mining -- the perception is that you're cutting the top of the mountain off and digging the coal out, and using the material to fill valleys. It's more the valley fill steps that are of concern to the agencies. And putting fill from strip-mining activities into valleys, creating valley fills, is subject to regulation by the Corps of Engineers and the Clean Water Act under Section 404.

EPA has begun to exercise its co-equal

authority to review these permits as they are presented to the Corps for consideration. Right now, the agency has some 79 permit applications under review, and I'll let you speculate on what that might be doing to the development of coal reserves which ultimately would produce coal and be sold in this and other regions.

I noted the Arch Coal litigation only because it's been going on for the last three years. It involves almost all the legal issues associated with valley fill and Section 404 permitting. And interestingly enough, there is a limited amount of mining that's going on by Arch with regard to the areas that are subject to permitting initially. But I noted it there simply to let you know the battle is not over. Folks have not walked away from that, as a consideration.

What happens when you burn coal? Well, you've got a coal-combustion product. And it's being looked at very, very carefully right now by US EPA, as a result of the Kingston event some several years ago. The agency has looked both at how coal-combustion products are stored -- that is, are existing impoundments and dams and related structures safe -- and secondly, should coal-

combustion products be managed in the same way that they have been managed in the past. The agency and related agencies have looked at impoundments across the country, including ours. Solid waste used to be regulated by the states under Subtitle D of the Resource Conservation and Recovery Act, and that regulation was confirmed by a congressional action referred to as the Bevel Amendment. But now, US EPA has proposed regulations, which we don't know what the final outcome will be. May regulate coal-combustion products as a hazardous waste, may regulate it as it has been, as a solid waste, or may regulate it in a hybrid mode, depending upon how the material is ultimately used. If, for example, it was used as an additive for cement, as a supplement for cement, it would be regulated as a non-hazardous waste; if it were placed in the ground for either temporary or permanent disposition, it would regulated as a hazardous waste. We are expecting that the agency will announce that proposed regulation in the not-too-distant future. We will obviously continue to keep you all advised as to how that evolves.

And I thought it might not be a bad idea to give you also a summary of what the generation

brought on-line in the last year looks like. 12 gigawatts of gas-fired generation, nine gigawatts of wind, and three gigawatts of coal. So I expect in past years that was heavily in the other direction, but that's where we're at right now.

And that concludes my remarks. I appreciate your time and your attention.

CHAIRMAN FLEMING: All right. Thank you, so much. Are there any questions that you'd like to ask Mr. Kemp, or would you rather hold your questions till the end?

[No response]

CHAIRMAN FLEMING: All right, we'll just wait then.

[Brief pause]

CHAIRMAN FLEMING: I did want to -- while she's doing that, you know, we keep hearing that the utilities really want to know the direction that they're going, as far as regulation, because there are so many -- you need -- there's a need for new facilities, but you don't quite know how to go about it, you're not quite sure exactly where to go. Is this latest move with Graham withdrawing, do you think that's going to -- is that kind of hampering efforts on that front, or --

MR. KEMP: Well, to the extent, as you said, Madam Chairman, we thrive on certainty, we plan with certainty --

CHAIRMAN FLEMING: You're saying it much better than I did.

MR. KEMP: No, you stated it very well. We really do need certainty. And if Congress arrives at a framework for us to operate within, that certainty may be painful to us in terms of how we go about complying, but knowing what it will require us to do is extremely important for our senior management.

CHAIRMAN FLEMING: Okay.

MR. KEMP: I hope that answered your question.

CHAIRMAN FLEMING: Well, it did. I just wondered if the latest developments would slow that down, on the certainty.

MR. KEMP: I guess we'll find out probably in the coming week.

CHAIRMAN FLEMING: All right. We'll see how it goes. They've got a lot of business they're taking care of, haven't they?

MR. KEMP: They certainly do.

[PowerPoint "Fleet Optimization" Slide 1]

MR. FONVIELLE: Madam Chairman, members of the

Commission, thanks for the opportunity to be here today and speak to you about fleet optimization, which is a fancy term that means something really simple, which is, how do we operate our power plants today that serve our customers in South Carolina and North Carolina today, tomorrow, and the next year and coming years, in the most cost-effective manner, at the lowest cost possible. So, a somewhat fancy way to say how do we operate cheaply every minute that we're serving our customers.

[PowerPoint "Fleet Optimization" Slide 2]

So the topics I want to cover today are, you know, what are we doing to control our costs in this environment, the environment that Dan did a good job of laying out some of the challenges that we face and the ambiguity that we face. So three ways we do that is optimizing daily and hourly to lower our costs. So what decisions do we make to operate our fleet in the most optimal manner, daily and hourly. Improving our plant capabilities to lower our costs, so making our plants more flexible, operate more efficiently to lower the cost of generation, and tying into the discussion about the challenges that some of the coal fields

are facing is creating fuel flexibility to lower our costs, specifically around, you know, our fossil fuel/coal fleet.

[PowerPoint "Fleet Optimization" Slide 3]

So as Mr. Anthony opened up with a background on the integrated resource planning process, I want to build on that a little bit and talk about, you know, building and operating a fleet as a utility, to accomplish that mission of lowest possible cost for our customers. So as I have laid it out here, there really are three steps, three components, to that. And one is the integrated resource planning process, and that is deciding what assets to build. And going back to your question about greenhouse gas regulations and potential climate change regulation, operating in an environment with a tremendous amount of ambiguity about what are those rules going to look like and what types of costs could be imposed upon different types of fuel sources, specifically coal, makes that a very challenging thing to do. When you're also trying to predict the cost of certain fuels, it certainly can drive demand in one direction or another, which will drive those prices. So the integrated resource planning process looks at that, and really

that's looking at what type of resource do you need, a base-load resource, an intermediate resource such as a combined-cycle power plant, maybe a coal plant, and then peaking resources, typically gas combustion turbines, and then looking at the fuel types of each of those and what is the long-term lifecycle cost of each of those types of resources and what's the best fit for the growing load in the future.

Once you build those resources and you have a fleet of different types of power plants, as I spoke, you know, the next step is a unit commitment step. And that is, which plants should we turn on and run the next day, in the next hour. And that has to do with looking at the load conditions throughout the year. So when we are in shoulder periods, you're making decisions to move units that need maintenance into maintenance outages during those periods, but you're looking at the load, the reserve needs that you have, in case there's any interruption, those plants that are available, and the plant capacities to meet that load curve. And the inputs into that are the average costs of that unit over its load.

Looking at those average costs -- I've got

cycle times up here -- each of those plants have different operating parameters. You can't turn a coal plant on and off in a short duration period, so you have to take that into effect when you do your modeling and set up your unit commitment to operate most cost-effectively, you know, as you move forward, whereas a gas turbine, you can start that and get the load running across a peak load period and shut it back down. So those are the inputs.

You also are looking at emission rates. As Dan went through, there certainly are a lot of regulations in terms of SO_2, NOx rates, and things of that nature, particulate matter standards, in terms of looking at, as I turn those units on, am I going to be able to comply with those emissions standards either on an hourly basis or a seasonal basis or yearly basis as those may be.

And then the last part of that third bullet is ramp rates, and what that means is how fast can each of those units increase their load to match an increasing demand by our customers over a given period of time. So, how fast can those units respond and move to their full output capability.

We also, every day, are looking at the current

day, as well as a day ahead, market availability and price in the next day, in the next hour, such that if there is an opportunity to buy power in the market cheaper than a unit we might turn on to serve the next incremental load, we'll buy that power and import it from another utility's territory, whether that be the PJM territory north of us, whether that be buying from an adjacent utility such as Duke. So we're also balancing market availability and price against the price of our next unit, to look at which units to turn on.

And then finally, in real-time there's economic dispatch. So once you've committed the units that you need to commit, have ready, turn on and ramp up to load, what are you doing to minimize operating costs of the on-line generation. So that's focused just on the generation that's operating currently to meet customer load, and shifting generation from higher- to lower-cost units.

What you're interested in at that point is what is the incremental cost. So as on unit commitment, you're looking at average cost, which may take into account some fixed expenses, such as a fixed expense to start a unit from cold

conditions; incremental is just what is that incremental cost to get the next megawatt-hour of energy out of that unit, because the start cost and everything else have already been consumed. You're also looking at the minimum and maximum capability, and I'll speak to minimum capability, so the wider that operating band is for a plant or a unit, a coal plant specifically, the better you are able to react to load and minimize cost, so those capabilities are very important. And then you're looking at the real-time market.

In the not-too-distant future, we will be responding actually in five-minute increments to the pricing in the PJM operating area, so we will actually be able to take our units that are online and not at their full capability, and anytime that the market price is below the cost of our incremental units, we'll be able to respond, back down our generation, bring in cheaper power to lower the cost for the customer.

The graph to the left there on the bottom is just a real simple depiction of that second bullet I mentioned in economic dispatch, which is shifting generation from higher- to lower-cost units. That just represents two units and what their cost

curves might look like, such that when you're at lower load conditions, which is the bottom part of the graph, in megawatts, there's a certain price per megawatt-hour to generate electricity out of that unit. So this just depicts on a two-unit system that you would operate those two units to meet whatever the load condition is, to make that generation cost equal. If one unit is operating at a higher price, you would back it down, raise the other unit to minimize cost. So at a high level, once we build our plants, very intricate modeling, daily and hourly, to minimize costs of our fleet.

[PowerPoint "Fleet Optimization" Slide 4]

So as I mentioned, the capabilities of those generating plants and making those plants as flexible as possible to operate, to match that changing load, are very important. We've been investing a tremendous amount of time and money in making some changes to our plants, that make our operations more flexible. As Dan mentioned, we've been adding control equipment to reduce SO_2, to reduce NOx, to control our particulate matter over the years, and all of those added control technologies have created some inefficiencies, specifically in our coal fleet. So we've been

going after those inefficiencies. And one of those that I've got up here is enhanced SCR operation. SCR is the technology to reduce NOx, and as we added that, the minimum load capability, the point at which our coal plant can't go any lower in load unless you take it off-line, those minimum loads have increased. So it really narrows the band in which we can operate our units.

We've actually found some technology, changed some operational parameters, and we've been able to bring those minimum loads back down. It eliminates the need to back down more- or less-expensive units because we now can move these units further down. Just that alone, we expect over $3 million a year in customer cost savings associated with that, across several of our coal units.

The second major topic up here, direct measurement of particulate emissions, has allowed us to increase our ramp rates on our coal units, so the megawatts per minute that I can move my units up in its load range to respond to increasing customer demand during the day. Prior to this technology and this change that we've made in our coal units, some of our units had gone as low as one to two megawatts per minute, so when you're

trying to move a coal unit that might have a minimum load of 250 megawatts to its maximum capability of 700 megawatts, it's not moving very fast, and one of the things that causes you to do, potentially, is turn on gas turbines to meet that increasing load because we have to meet it when that load picks up. Prior to this technology, there was an indirect measurement of our particulate emissions at a given time on our coal units in a calculation that would estimate, you know, how much particulate was being generated by the unit at a given time. We actually have implemented a technology where we can directly measure that now, and we've moved those ramp rates on those units from one to two megawatts per minute, to 12 to 15 megawatts per minute. That's improved the responsiveness of those units and we expect cost savings on those that we have implemented to date of $2½ million a year, and we believe we can do this at several of our other units.

And then the next piece of this, which ties into the discussion of the coal areas and the challenges in the Central Appalachian Region -- I'll cover in a couple of slides in a minute -- is

preparing for new types of coals that we can utilize in our coal plants to lower costs, and also to ensure reliable supply in the future.

[PowerPoint "Fleet Optimization" Slide 5]

Before I get to that, I just want to talk -- as Len mentioned previous to this I was in charge complying with our renewables standard in North Carolina, familiar with what's going on there with technology. So linking renewables into that dispatch discussion just briefly, and Mr. James is going to talk about renewables in a minute, but what is the potential impact of renewables on that dispatch equation, that complex equation that we go through daily, hourly, every minute. And this is just representative -- the graph at the top is an actual graph chart of solar output for a solar PV facility on our system. And as you can see, the line starts on the bottom of the graph at about 8 a.m. in the morning. You see as the sun begins to shine, that generation picks up to its capability around the middle of the day. However, you can see that that operation is not very smooth, and in fact once it got to load, several minutes later it lost close to half of its output capability, representative likely of cloud cover, a storm or

something, coming over. So you can see the operation of that one is very choppy or intermittent.

Then second, if you look at the time along the bottom of the axis there, the actual full output capability happens in the middle of the day, and it is, at 4 or 5 in the afternoon there, back down close to zero output on that, when our peak load conditions for the utility are later in the day -- 4, 5, 6 o'clock, 7 o'clock -- on a summer day. So the other piece of that is that it doesn't necessarily match up with when we need that generation to meet that peak load. So as we have solar added to our utility system in small increments, it's not a big operational impact, you know, in terms of the grand scheme and size of our unit. However, as some propose significant amounts of solar generation, large penetration, having your system be able to respond to those types of changes would further increase the need to have flexibility, which might mean keeping more generation on-line, operating at less than its capability, so that as you have this intermittency those other generators can pick that up.

Then the chart at the bottom on wind --

MR. MELCHERS: Could I ask one question?

MR. FONVIELLE: Sure.

MR. MELCHERS: What are the blue and green graphs on that first chart?

MR. FONVIELLE: That's actually temperature and relative humidity. So that's just a profile of what the temperature and relative humidity in the area of that solar field, so an indication of whether there was a storm, you know, rain clouds, et cetera. Sometimes we can pick that up and it'll depict what's causing that occurrence.

MR. MELCHERS: Thank you.

MR. FONVIELLE: And then the chart in the bottom right of that slide is a wind graph over three years, representative of a wind field in North Carolina, and then the vertical axis on the left is the percent of the wind turbine's capability. So 100 percent would represent the full output capability of a wind turbine. And this is during the peak summer months. And as you can see from the profile taken at that North Carolina location across those three years, that during the summer peak months, the wind is capable of somewhere in the 15 to 25, 28 percent of its actual maximum capability.

So one, you can see variability of generation, and then the capacity value that that provides. So that reliable capacity to meet our peak is limited. So if you put in 100 megawatts' worth of wind, you can't necessarily rely upon 100 megawatts of generation at the peak time that you need it. Again, a small penetration of wind won't cause significant changes in our dispatch and our generation profile. As that increases to more significant percentages, as some would propose, it could have, you know, very dramatic effects on the costs of our system and how we would actually operate our system.

CHAIRMAN FLEMING: Do you have any studies on offshore wind, off North Carolina yet?

MR. FONVIELLE: There have been some studies that have been performed by some independent groups and public groups, such as University of North Carolina. I'm familiar with those studies. I'm also very familiar and have followed some of the developments that have been occurring in the Northeast and, actually, overseas. In Europe they've been installing a lot of offshore wind, experiencing some problems. And also, very aware of some of the cost of offshore wind there. It

certainly -- we have some technical challenges in North Carolina. To date, no offshore wind has been built in a high frequency, active hurricane area, so that's a technical challenge that the wind industry, the GEs and the manufacturers, have not yet addressed or faced.

You know, the other piece is the cost. And the cost of offshore wind compared to onshore wind development, the numbers that I've reviewed are on the order of two to two and a half times the cost to build offshore wind as onshore wind. And I think Mr. James will actually cover some pricing of wind generation in his presentation.

CHAIRMAN FLEMING: Is it more productive offshore?

MR. FONVIELLE: It is. One of the reasons why you see developers looking at the offshore waters along the East Coast of the United States is that, as you move further into the offshore waters, the average wind speeds increase and the capacity and the efficiency of that wind generation does go up. However, that efficiency is offset by increasing costs, and to date those projects that we've seen and prices we've seen coming from some of the Northeast -- proposed Northeast offshore wind are

very expensive.

[PowerPoint "Fleet Optimization" Slide 6]

Turning to the last topic that I'll cover, as Dan mentioned, there certainly are some challenges facing the coal mining industry, specifically in Central Appalachia, and I apologize for our -- or my acronyms up here. I'll try to speak through each one of those. So the "CAPP" is Central Appalachian Region, "NAPP" is Northern Appalachian, and then you have the Illinois Basin. "PRB" is the Powder River Basin. And then you have Colorado fields out there, as well. So this just gives you coal regions, and we'll talk about coal regions and coal quality very briefly.

So, in the CAPP Region, which is our typical coals that Progress Energy Carolinas has purchased for our plants, as well as the other utilities in this region, traditionally, are higher in BTUs -- the heat content of the fuel; the higher the BTUs, the more heat content, the lower amount of fuel you have to put through your unit and consume to make load -- and they're typically lower in sulfur, lower to mid-sulfur ranges, so that, you know, is very important. Prior to having the technology on our coal plants to remove that sulfur, we were very

limited in the amount of sulfur concentration in the coals that we burned. As we put our scrubbers on and can actually remove the sulfur after combustion, we can now move and look at higher levels of sulfur.

You see another bubble there to the right, the "CAPP LQ," that's just another type of coal coming from that region, low quality. And by "low quality," it's got lower heat content and higher ash, and I'll speak to that in a minute in this next slide.

The Northern Appalachian Region is typically high in heat content, which is a good thing, but higher in sulfur content, which again until we had our scrubbers, we weren't able to reach that and use it as a fuel source. There's import coal coming from foreign countries, typically lower in heat, lower in sulfur. Illinois Basin is a very thriving and growing supply basin these days that's getting a lot of attention. Lower heat content and very high sulfur, but abundant supply and prices are lower. Powder River Basin, quite a distance from here, although some folks are beginning to look at it to bring it as far east as the East Coast. And then Colorado.

Each coal has different qualities, and the main qualities we look at are the heat content, as I mentioned, how much heat per pound of coal; the sulfur content, how many pounds of sulfur, you know, are in that coal; the amount of ash that's in the coal after it combusts, how much ash is left over.

In the CAPP Region, the coals that we've been burning, ash ranges from 8 to 10 percent, so you burn a ton of coal, 8 to 10 percent of that is left over as ash.

And then the last term, "ash softening temperature" is actually the temperature at which that ash will, for better terminology, melt in your boiler, which can cause you some operational issues and problems, but there are ways to deal with that.

So that's just kind of an overview, and as Dan mentioned, there's a lot of pressure on the Central Appalachian Region from the mine accident we've seen recently, policies and regulations on the mountaintop removal, and it is a very mature basin that has been mined for generations and just the reserves are in decline. So we see declining supply coming out of the Central Appalachian Region, and that is the coal we traditionally have

purchased, so for reliability, we need to look at these other regions and then find a way to bring those to us cost-effectively.

[PowerPoint "Fleet Optimization" Slide 7]

So, very fortunately, our folks in our fuels department, in our coal area specifically, were very forward-looking and, in the 2006 timeframe, began to see this trend of this decline in supply in the Central Appalachian Region around the time that our scrubbers were coming on and gave us the ability to handle higher-sulfur coals, and they looked at the pricing in some of those other regions and determined that if we could bring those in cost-effectively, it would give us an opportunity to reach coals in the future to maintain reliability and potentially lower cost.

So just as a background, a coal plant, the boiler at a coal plant is typically designed around the coal that is sitting closest to it, so the boiler is designed very specifically to handle those parameters that I mentioned before, ash softening temperature being one of them. So all the plants on the East Coast and in this area were designed to burn that Central Appalachian coal, and not necessarily handle coal out of the Illinois

Basin, for example. So we've been focused on that issue since 2006, actively looking at what improvements do we need to make to our boilers and our plants to give us access to those other markets. The target was to handle higher sulfur content, higher amount of ash, if necessary -- and some of those other fields may have as high as 15, 20 percent ash content -- and then lower ash softening temperatures, so more, quote, "sticky" coals is what I would term it as.

We've actually spent greater than $100 million -- or will spend; a lot of that money has been invested -- greater than $100 million of capital investment between 2007, and we'll complete the identified improvements at the plants, right now, by the end of 2012. So we've been putting a lot of money into our facilities to be able to access these regions. And we're actually beginning to do this today. We're blending lower quality CAPP coals at a tremendous discount. We've actually been able to obtain some of those coals at $20 a ton lower cost than the coals we were constrained to use previously. Tremendous value in savings for our customers in South Carolina and in North Carolina. We actually are going to begin testing

some of the coals out of the Northern Appalachian Region and the Illinois Basin Region because we see similar opportunities and discounts in those regions.

And to do so, it means obtaining new modes of transportation. So whereas we've been moving coal out of the Central Appalachian Region on the Norfolk Southern and CSX rail lines directly from the mines, reaching this Illinois Basin Coal is going to require us to barge it potentially on the river, bring it to a terminal that can take it from the barge and transload it to rail, and then deliver to our facilities. Our coal group is actively working on that, has started putting together some great agreements that actually will derive tremendous savings going forward, into our fleet.

That concludes my presentation, and I'll be glad to take questions now or after Mr. James completes.

CHAIRMAN FLEMING: All right.

COMMISSIONER MITCHELL: Madam Chairman, I have one -- if you want to ask now, or you want wait?

CHAIRMAN FLEMING: Go ahead. Commissioner Mitchell.

COMMISSIONER MITCHELL: Thank you, Madam Chairman. Mr. Fonvielle, I was curious about the ramp rates you were talking about, and you discussed about increasing from one to two megawatts, and I believe when you do that, the gas powered turbines there kick in? Tell me, how will it influence your formula, so to speak, if that gas price variation, if it starts getting more expensive? Could you just explain what will happen there? You know, gas is sort of hanging out there and we don't know what the direction is as the demand increases everywhere. Will that change your formula there as far as the gas kicking in, to get those ramp rates up?

MR. FONVIELLE: It certainly does. It certainly does change our dispatch significantly. So what units we turn on and when. So when we set up a day, we're taking our lowest-cost units and loading them up full load, running them, and then moving to our next increments, until we're meeting load and we've got units at partial load. So just as an example, I mean, we're certainly aware of periods of time in the not-too-distant past where gas prices had gotten fairly high after hurricanes and when there was a belief that we were in a

declining supply period, there were gas prices that were relatively high, and put our gas plants as some of the most expensive on our system, so we were, you know, we were always, you know, with our nuclear units on-line, our most efficient coal plants, turning on our next least efficient coal plants, some of our smaller coal plants, until we got to gas. Recently with the gas prices falling in the $4 range and even in certain periods of time recently falling below $4 per dekatherm, our combined-cycle plant at our Richmond facility has been one of the most cost-effective plants, behind just a couple of our more efficient base-load coal units and of course the nuclear units are always at the bottom from a cost perspective, the most efficient and cheapest. So it changes it in that manner, certainly. So the price of that combined-cycle is closer to some of our coal today. Through some of these coal-blending efforts where we've begun to find coal at discounts like $20 a ton, we've actually moved some of those coal plants down below the gas, even at those $4 levels, to be able to run those coal plants more in a base-load fashion.

When I spoke to the ramp rates, one of the

things that's making our coal plants be able to get back to a condition where they can react faster to load, our operators that are operating and trying to meet that load every second and fraction of a second, to maintain stability on our grid, if they can't get those coal units to react fast enough it may cause them to start one of our peaking turbines, one of our gas turbines, which are less efficient than the combined-cycle. So improving those ramp rates allows us to keep from turning those turbines on when we don't necessarily need to turn them on. We may turn them on at a later time, so that helps.

From a gas pricing perspective, of course, we'll find out as we go forward, but there's been a tremendous amount of gas discoveries in shale basins in North America. Most of the experts that we follow are fairly convinced that -- are becoming more and more convinced, by the day, that those discoveries are real, that the amount of gas that's in those shale basins are significant, and we see long-term gas forecasts have really come down, and in the next ten years or so, most experts are believing that somewhere in the $5-$6 range -- at times it may be a little bit higher -- is a good

gas forecast today.

COMMISSIONER MITCHELL: And one other quick question. The ramp rates allow you to get to peak quicker?

MR. FONVIELLE: That's right.

COMMISSIONER MITCHELL: Is that what you're telling me?

MR. FONVIELLE: That's right, more responsive. So, especially on a cold winter morning for the morning peak in a winter period, our load picks up very, very rapidly. And if the coal plants are constrained by these emission controls that had reduced their responsiveness, we were turning on gas peaking turbines to meet that growing load very quickly across the morning peak. And now this helps us not to have to run those. And even at that $4 gas, those peaking turbines are typically some of the more expensive units on our system from a fuel perspective.

COMMISSIONER MITCHELL: Thank you.

COMMISSIONER HAMILTON: Madam Chair.

CHAIRMAN FLEMING: Yes, Commissioner Hamilton.

COMMISSIONER HAMILTON: Mr. Fonvielle, if I could follow up on -- you just mentioned shale gas and the experts' opinion that you will have a

supply. I know probably 24 months ago we were all talking about siting LNG terminals --

MR. FONVIELLE: Yes, sir.

COMMISSIONER HAMILTON: -- and we've got a lot of those that have been potentially sited that haven't been built. But as you probably are aware, as I am, in the last six months the shale gas has come under a lot of concern from environmentalists. If the environmental effect prevails, I don't know what's going to happen to shale gas, and I don't think most of our experts do either. And it looks like that LNG will come back into play if this happens, until new technologies could be perfected that we could drill this gas without the use of water. If that does happen, what's going to happen to your plans you told us about today, and all the new gas turbines that are going to be put into place? LNG is going to be -- a source of that comes from folks that don't really like us, and the price is usually the highest on the market, and usually we haven't been paying the highest on the market so we haven't been getting our fair share. What will that do to your resource plan?

MR. FONVIELLE: I think those are very good questions, because there is some debate now about

regulations around some of the shale gas formations and the fracturing that goes on. A lot of the discussion that I read, I think the basins where the early discoveries have been made in Texas and some of those basins are up on their development curve. I think it could slow some of the newer discoveries, such as the Marcellus shale play in kind of the Northeast, coming down into the Virginia area, et cetera. We could see a slower development curve on that. I haven't seen too many experts that believe there's an extreme condition where, over the long term, we won't access that gas; it's just kind of how fast will that get drilled and explored.

LNG, you know, I think -- and Progress Energy has purchased LNG to fuel specifically our fleet in Florida. We have a lot more gas in Florida. We're not very heavily natural-gas dependent in the Carolinas fleet, so even though we are taking some of our older fossil units off-line and repowering those with gas, rather than spending a significant amount of money to handle some of the new emissions regulations, I think we still will have a very balanced portfolio as a fleet, going forward, which I think has served us well over time, because coal

prices will escalate and then move down. Gas prices will do the same. Having a very balanced and blended portfolio of generation -- nuclear, coal, and gas -- I think is very prudent, even if there is some slow buildup in some of those shale gas discoveries.

And LNG can, you know, and will at times come to the States and plug some supply-demand imbalance during periods, so having some of those terminals that are already built is a good thing.

COMMISSIONER HAMILTON: We had a speaker at NARUC in February, from EPA, that stated that he felt that the regulations that were being carried out by state commissions have been sufficient and there'd have been no major occurrence that had happened in the fracturing. But Congress has started, as I understand it, a committee now that they're looking into this further. So it looks like we might be involved -- to me, it looks like political intervention has caused rates to go up for taxpayers more than most -- further than any other source. I think the environmental things that aren't really to a point that we have science that says you've got a problem, but politicians sometimes think you've got a problem, and they go

forward, and the ratepayers seem to suffer.

MR. FONVIELLE: I think the companies that got into the shale plays and the horizontal drilling from those early days have made some big technological advances in that technology, even recently, being able to drill multiple wells from one single site, and that is targeted at the water issue, the ability for them to reclaim the majority of the water that they use in creating those wells and using it to drill the next well. So I think, hopefully, technology will play a role in continuing to open those up for us.

COMMISSIONER HAMILTON: Good, and I hope you're right.

MR. ANTHONY: Madam Chairman?

CHAIRMAN FLEMING: Yes.

MR. ANTHONY: If I could, please, to further put the Commission's mind at ease about our reliance upon natural gas, the coal plants that we are planning to retire do not have any environmental controls on them at all. That's about 1,000 megawatts. We're about a 12,000 megawatt peaking company with 14,000 megawatts of total resources available to us, so the 1,000 megawatts, or so, that we're planning to shut down

is a relatively small percent, all things considered, of the system.

If we were to continue operating them, we would have to incur the cost of putting on the controls for SOx, NOx, and mercury. In addition, we've got to deal with greenhouse gas issues that are facing us, and natural gas produces about 40 percent less CO_2 than carbon.

And the ash pond issue is a much bigger challenge than the press -- the press makes a lot out of it, but from our perspective, it is a very serious issue, because we've got to site new ash ponds if we're going to continue operating these plants, even if nothing else changes. The ash ponds that we have do not have liners. The new ash ponds will have to have liners. So that's an increased cost, just if everything stays the same. But then if we have to go to dry ash storage or start disposing of the ash off-site or, heaven forbid, we go to hazardous-waste classification, that drives the price up even more.

We will still have about 3,500 megawatts of base-load coal that's already scrubbed, already got the NOx controls, mercury controls, out there, that will continue burning coal for as long as somebody

will let us continue burning coal. Our biggest fear and worst case scenario is the greenhouse gas legislation puts some type of hard cap -- not a cap-and-trade, a hard cap -- that we simply are not allowed to emit more than some percent, or amount of tons of CO_2, and we're forced to shut down those plants because we cannot meet the requirements otherwise. Then we're talking really expensive problems, and natural gas would not meet that need. Then you're looking at nuclear as just about the only way to meet it.

But I don't want you to leave here thinking we're going to be moving to a huge natural-gas-consuming utility. We're not. We're still going to be in the neighborhood of 35 to 40 percent of our energy coming from nuclear, another 35 or so percent coming from coal, and then the remainder coming from natural gas. And I would ask Mr. James and Mr. Fonvielle to correct me if my percentages are off by very much, but gas will continue to be a relatively small part of our resource mix, but it does allow us, by having these additional combined-cycles out there, that when gas is cheap, we can take advantage of it and run those combined-cycle plants and back down the coal. The same thing is

true when coal prices are cheap; we can run the coal units more and the combined-cycles less. It gives us a better opportunity to minimize our total fuel costs.

Everything that I say I've been taught, so if I said the wrong thing, somebody needs to correct me.

CHAIRMAN FLEMING: They're not going to admit it right in front of us.

MR. ANTHONY: And I have no original thoughts; they're all [word(s) indiscernible].

[Laughter]

[PowerPoint "Smart Grid and Renewables Update" Slide 1]

CHAIRMAN FLEMING: Mr. James?

MR. JAMES: Madam Chairman, Commissioners, thank you. I'm here to talk about a couple of things today that we hear a lot about, a lot of buzz words around renewables and smart grids, so hopefully you'll find this enlightening and create some conversation and questions around it.

First on the list is smart grid.

[PowerPoint "Smart Grid and Renewables Update" Slide 2]

"Smart grid" means a lot of things to a lot of

people. It's used very broadly in many cases. I'm going to try to discuss today about what we see it, what it is to Progress Energy, and what we're doing as a company to develop this smart grid that you all are hearing about.

This pyramid here sort of illustrates the approach we're taking, each phase -- wave, if you will -- I don't know why we chose "wave" instead of "phase." Maybe a surfer put this thing together. Could be Len. Each wave builds upon the previous wave. And the bottom piece, you see the foundation is things that we've been doing for a number of years around DSCADA, VAR management. I won't get into the gory details about that. But one big piece of that is getting our workforce comfortable operating a grid that's much more complicated but also much more capable than what they've been operating in the past.

As we move up through this chain, the capabilities will be much greater, but the complexity will also be much greater. So we've really focused on the beginnings of the technology changing the system, but also building the workforce skills and the comfort level for our workforce to operate a system like that.

Wave 1, the distribution system demand-response program has been approved by the North Carolina and South Carolina Commissions; it's in full implementation. We're spending about $247 million to build the capability within our system to control the voltage very precisely, that will allow us to, under high load conditions, lower the voltage and create additional megawatts of capacity, approximately 300 megawatts. That project is underway, work is being done as we speak.

When we applied for the federal grant, which is what's funding Wave 2, the funding for Wave 1 was viewed as the company match. You had to provide a match to the DO- -- to DOE to get the federal grant money. That funding was what we used as our match.

We should, hopefully, sometime soon here, see something where we sign the DOE contract. I understand we're really, really close. But that will happen; it just may -- you know, I think I heard Monday this week, but I heard last night it'll happen next week. So, it'll happen soon. We're going to get that money.

We plan to move forward with a number of

projects around that funding, and I'll talk a little bit more specifically about those projects in a second, so I won't go through that detail. But between now and 2012, we'll be doing the SDR and we'll be making this $100 million investment in the grid to reflect the federal grant money.

Wave 3 and 4 are 2013 and beyond. And the big differentiation for the most part in Waves 3 and 4 is a lot of that is about the customer side of the meter. Segmentation, residential offerings, if we move forward with an AMI type application, which you hear a lot about AMI these days being a great thing, what are our customers going to do with that. If we put the capability out there that allows us to communicate with them, pricing and consumption, in real-time, most customers just getting that raw data are not going to be in a position to do anything with it. So what Waves 3 and 4 are about is determining what customers want, determining what the benefits to those customers will be, and putting programs and pricing and other things in place to allow them to take advantage of that technology.

At the top of that pyramid, you see HAN, which is a home area network, and advanced energy

storage. Advanced energy storage is one of the things that we see coming, and the timing of this is very uncertain at this point, is for example, much more distributed generation out on the grid, solar panels with storage. If you've got three, four, five, ten, twelve megawatts across your system, no big deal, it really won't impact your ability to manage the system. But if you start putting large amounts of this resource out onto your grid, then you've got to be able to manage it, because not only is your load changing but the resources that supply that load are changing, and you can't control any of those, so you've got to be in a position to have a system that's very sophisticated to monitor the system, monitor what these inputs are and outputs are, and keep it stable. In the past we've only had to worry about how hot it was outside and how much our generation could produce, and we managed it, as Ken described, very effectively, because the only change was driven primarily by the weather. If you've got lots of load generation sources scattered all over your system, it's a much more complicated animal to deal with.

So Waves 3 and 4 are about a much different

grid. Waves 1 and 2 are about building a system that reflects the current state of our industry; 3 and 4 are the next stage. I don't know what the -- it says 2013 and beyond. I don't know how quickly some of this stuff is going to happen. A lot of it is going to depend on technology advances and cost. But we really see what we're doing now as preparing our side of the meter to move forward to that next step, which is really focused on what's happening behind the customer's side of the meter.

[PowerPoint "Smart Grid and Renewables Update" Slide 3]

I wanted to run quickly through some of the projects that we are funding. And these projects are underway -- well, the first project, the distribution system demand response, as I discussed earlier, is underway, and we do plan to get 310 megawatts of additional capacity out of the system as a result of that.

The next six projects are really going to be the ones that are funded by the $100 million from the federal grant. The first one that's up there is targeted AMI. We have a number of meters, 80,000 out there, that are still currently manually read. Those are commercial demand meters and

residential TOU meters. We will be putting those AMI meters on those facilities. Right now, we have to manually read those; we will not have to do that anymore. The justification for that is the elimination of meter reading; that really drives the majority of the economics at this point.

As part of the grant, we also are going to be deploying some electric transportation infrastructure. If you go buy you a Leaf from Nissan when they come out here in the next little bit, there will be some charging stations around the system where you can charge. We're working on where we put those, how it will be structured, how we charge you for the electricity. It sounds like it should be fairly simple, but unfortunately it's not. We're using some of the funds from the stimulus package to do that.

Condition based monitoring will allow us to do real-time asset management of our high-impact assets out there on the system. So we can, in real-time, monitor what's going on with significant assets on the system. That is part of the $100 million grant.

We will begin to look at residential program offerings. I expect we'll be back in front of you

guys over the next months and few years with some pilot programs around different pricing models for customers that allow them to take advantage of some of these new capabilities. There's a number of things that we could propose, and we are working on those as we speak, to really understand what our customers want to do with this, what can they do with it, and how can we make sure that whatever we invest around these assets, they get value out of it and it's not just a neat toy and everybody thinks it's pretty cool but they really can't get anything out of it. We really want to make sure we understand how they can use these assets and how they can get value out of it.

Advanced analytics engine is another activity, another project that's being put in place. This will allow us to analyze what's going on in the system and coordinate our DSM and our DSDR based on what's going on in the system. So it's sort of the first step towards monitoring and managing the system in real-time without the further complication of distributed generation being injected. This is more about monitoring what's going on with the system, coordinating our DSM and our DSDR activities to make sure the system is

operating as efficiently as it can.

You know, in the past, we've only really focused on the generation side of this equation. You know, Kent talked about how we've really focused our efforts on making sure we're operating the fleet as efficiently as we can. Going forward, we're going to be looking at how can we make sure that the system beyond the generation and beyond the T&D sensors we have on the transmission system can be operated efficiently, minimizing losses and providing customers with tools that they can -- that can lower their cost.

And then the last one is AMI integration to our outage management system. AMI does provide the ability to tell whether a customer's power is out, whether they call you or not. As we put these 80,000 meters out there, we're going to integrate the information that we get from those meters back to our outage management system, so that will help us to detect and then restore service more quickly, for the distribution customers.

That's a very quick and dirty smart grid discussion. I'm going to talk a little bit about renewables now --

[PowerPoint "Smart Grid and Renewables

Update" Slide 4]

-- and Kent touched on this a little bit. As everyone is aware, we have a requirement in North Carolina to procure a percentage of our resources from renewable resources. There are three primary sources that we are dealing with as we look at procuring these resources: They are solar generation, biomass -- and unfortunately on this slide, the wind should be a bigger bulleted item, but it's three primary resources: solar generation, biomass, and wind. What we've seen since we got into the market -- what, three years ago, Kent?

MR. FONVIELLE: [Nodding head.]

MR. JAMES: -- we have seen prices come down. When we first signed our original contracts in 2008, we saw prices $.25, $.26 a kilowatt-hour. There was a rush to produce more panels. I think the pricing has dropped primarily because panels have flooded the market. The key component of solar development is the ability to monetize the tax credits. A lot of the developers don't have enough of an income tax appetite to take advantage of the full tax credits, so they go to Wall Street and they sell the tax credits. Well, Wall Street

was in a bit of a problem last year and year before, and the market for those tax credits became much more difficult. And for that reason, you saw a flood of panels and a lack of development, and the prices came down. So we've seen those prices range now in the $.15 to $.20 per kilowatt-hour, as opposed to the mid-$.20s. The contracts we've signed in the last year are in this range.

These projects are heavily dependent upon tax credits. The federal tax credit is 30 percent and, in North Carolina, we have a 35 percent tax credit. I'm not familiar with whether we have one in South Carolina, or not. So the tax credits buy these projects down by about 50 percent, so if you didn't have those tax credits, these projects would cost $.30 to $.40 a kilowatt-hour to operate.

We currently have about nine megawatts of solar under contract in the Carolinas in support of Senate Bill 3. And we have people knocking on our door every day that want to do more. We could do much more if we had the appetite to spend the money it would take to do it. As Len mentioned in his opening remarks, typically in the past we've built our fleet around a least-cost model. Senate Bill 3 was the first crack in the door of looking beyond

least-cost and looking at other policy environmental needs, and it's obvious that at $.15 to $.20 it's probably not least-cost. But to comply with Senate Bill 3, we are procuring a number of resources that wouldn't necessarily be viewed as least-cost if we were doing it under the strict sense of least-cost.

Biomass, there's been a lot of activity around biomass. I think Len mentioned the animal waste is viewed as a biomass. Also wood, crop residues, and landfill gas. You see a large price range for biomass: $.065 to $.18 is what we've seen in the market. $.065 is landfill gas; landfill gas is the cheapest. There's not a lot of it, but it's fairly competitive and we actually did some landfill gas projects before we even had a Senate Bill 3 requirement because they could do those at avoided cost. $.18 is some of the animal waste type projects that are much more expensive, less proven technology. As you can imagine, much more difficult fuel handling issues to deal with. So we see a pretty wide range in biomass.

Wind is the last one I'll touch on. We have received, really, no proposals from wind developers. The highest potential in the Carolinas

is in the mountains and offshore. Kent mentioned the North Carolina UNC study. You have to get a pretty good ways offshore, close to the Gulf Stream is where the winds are most consistent, and you want consistent winds. You don't want necessarily high winds; you want consistent winds. In the mountains, especially along the ridges, are good places for wind resources. In North Carolina, specifically, there is a ridge law that prohibits the construction of facilities over a certain height, which, in effect, has made it impossible to do wind in the North Carolina mountains. Doesn't seem to be any interest in North Carolina for changing that. But most of the focus that we've seen in our two states is around potential for offshore, because offshore does have a lot of potential.

Unfortunately the prices are high. We do have one price point that we got from a project in West Virginia for a land-based facility that was actually under construction. Started at $.082 and ramped up to $.115. These are about 30 to 35 percent capacity-factor facilities. They have very limited capacity value. But there are -- you know, land-based projects are getting closer to being

competitive.

Observable wind prices, Kent mentioned in the Northeast we've seen media reports north of $.20 is what it takes to support an offshore project. I don't think anybody really knows what it will cost off the shore in North and South Carolina because of the hurricane threat, but it's at least north of $.20. The other thing around offshore wind, for it to be sustainable and of any significance, there has to be a large investment in infrastructure along the coast. You have to have the vessels, the infrastructure to service the -- to construct these facilities and to maintain these facilities. It's going to make it very difficult to do wind on a small scale. You're either going to have to do it big time, to spread that cost across a lot of megawatts, or it's not going to happen. If you're going to do a 200 megawatt project, that won't support the infrastructure. But then you start looking at, if you're going to do 2,000 megawatts at $.20 a kilowatt-hour, then you're talking about massive subsidies from the ratepayers. So there's a balance there that we have to come to grips with.

And the prices that we've seen do not include transmission costs. Along the coast of North --

especially in North Carolina, the wind is a long way from the load. If you look at Eastern North Carolina -- South Carolina to some extent -- you've got to move the power a long way to get to where people are, and that cost is not factored into these figures.

So just to sum things up around renewable energy, we've got a lot of interest, a lot of developers out there. A lot of solar opportunity. Biomass, we're running into issues around environmentalists don't like you to burn anything, so there's been some opposition to biomass. There's opposition to the animal waste, because people don't want all the animal waste in one area to be moved and concentrated in their neighborhood. So there are hurdles around biomass, as well. And wind is really -- it's cost and technology, because offshore is where the most potential is, but it's also the highest cost and there are technology issues around the hurricane issue.

So with that, I'll open it up for questions and you can question any of us on anything.

CHAIRMAN FLEMING: Thank you. That was very informative, as well. All three presentations have been. Are there any questions?

COMMISSIONER WHITFIELD: Yes.

CHAIRMAN FLEMING: Yes, Commissioner Whitfield.

COMMISSIONER WHITFIELD: Thank you, Madam Chairman. My question is for Mr. Fonvielle. I know you answered a question from Commissioner Hamilton about gas, and Commissioner Mitchell a little bit about that same subject. I want to ask you -- I think it was your next to the last slide, or maybe your last one, you had a slide on fuel flexibility and you talked about your traditional boilers are designed to burn the regional coal predominantly from the CAPP, or the Central Appalachian Region. And I think in that same slide, you had a bullet point in there saying that you all had greater than $100 million of capital investment in making these changes so that you could burn the other types of coal from other regions. And it looked like that was ongoing from 2007 to, obviously, going to 2012, so that's ongoing. And I guess my question is, one, obviously, that's still ongoing; do you expect that number to be higher than that? And, two, when you start bringing some of this coal in that you're talking about from the Illinois Basin by barge, I

believe, and then still railing it a good way, do you expect that to increase your costs? I appreciate your idea for pushing flexibility and trying to reach out and be capable of doing different things and being capable of being flexible, but what do you think those things will do to your costs and where would that be?

MR. FONVIELLE: Yes, Commissioner, great questions. You know, flexibility, certainly we are interested in that helping ensure that we always have a reliable supply. For example, if the new surface water regulations begin to shut down some of the mining operations in the Central Appalachian, you know, the first mission is always safely to keep the lights on, and then the second piece of that is the cost. That flexibility -- and we've already seen it in our most recent request for proposals. We go out one or more times a year to the market to lock up a reliable supply and lock in pricing for the subsequent year, and even to buy small amounts in future years. Through this recent request for proposals was really the first time that we've had the opportunity and capability to send the signal and specifically request suppliers in those other regions to provide bids to us.

It was amazing the noise in the coal newsletters that go through the coal industry about, "What are those folks down at Progress Energy doing? They're changing the game." So I think there are two things: We absolutely believe that prices will be -- that this will provide lower-cost coal, and we've seen it through this RFP that we can actually move coal from the Illinois Basin. Barging commodities is certainly a cheaper mode of transportation than rail, so if we can get enough of a discount on the coal in those distant coal fields, even with adding the barging cost to get it to our traditional railing point, we can be competitive or cheaper. The other effect that this has potentially -- and I think we've seen this -- is waking up some of those suppliers that we are going to begin looking at other markets. And although it's hard to measure, we are certain that their pricing competitiveness, even out of the Central Appalachian Region, was better this time than it would have been otherwise.

So one, first and foremost, making sure, as that resource declines, we always have reliable coal supply; and we will, through that flexibility and our RFP efforts each time, always buy the

lowest-priced coal that we can reach, you know, each time we go out to the market. So lower cost, and we have seen that and believe that that will continue.

COMMISSIONER WHITFIELD: Okay. Thank you, Mr. Fonvielle.

COMMISSIONER HAMILTON: Madam Chair.

CHAIRMAN FLEMING: Yes, Commissioner Hamilton.

COMMISSIONER HAMILTON: Madam Chair, I don't have another question, but I would like to thank these gentlemen for the report that they've given us today. I think it was timely and well received. And if some of us look like we might be sinking, Mr. Anthony, we didn't get home till 1 o'clock this morning from a night hearing. It has nothing to do with your presentation. And I'm also thankful to Mr. Anthony that I'm going to be able to sleep well tonight for the comfort he's offered me. Thank you, very much.

[Laughter]

CHAIRMAN FLEMING: Are there any questions for the panel?

[No response]

CHAIRMAN FLEMING: I have one question I wanted to ask about the electric transportation

vehicle. What are the challenges putting those on the grid? What does that do, I mean, if, say, there's an unusually high load of need for electricity and the vehicles are plugged in at that time? How do you set those priorities?

MR. JAMES: It could be a challenge, it could be an opportunity. A lot of the models you see and a lot of the discussion around smart grid is, you've got cars plugged to the grid that are charged that you can discharge, take energy out of the cars during peak hours, and you would compensate the owner somehow. You've got to track all this energy. There's a lot of logistical stuff to work out.

CHAIRMAN FLEMING: What if you need that car charged, and you're taking it out?

MR. JAMES: Well, you would assume there was enough -- you know, you would hope that not every car would unplug and drop off at 5 o'clock on the -- on -- well, that's probably not a good time to assume that. But you would hope there would be enough diversity that there would be enough cars attached to the grid that you could draw some power from them, or if they are fully charged then they're not drawing anything off either.

CHAIRMAN FLEMING: Right.

MR. JAMES: But there are challenges. And one of the issues around smart grid is how do you keep track of all this stuff. If you've got a million cars attached to your grid, or even 50,000 cars, you've got to know what they're doing in real-time because they can either be helping you or hurting you. So that's one of the challenges we've got to deal with.

Now, the good news, I think we have a lot of time to deal with it. I don't think we're going to see a wave of cars taking over the marketplace in the next even 15 years, but you've got to start getting prepared for it.

CHAIRMAN FLEMING: But if this is your phase that you're going to be using the grant for, aren't you trying to get the grid ready to handle it, when it is --

MR. JAMES: Well, we're starting to understand the implications of it, and part of the grant application -- and the DOE was encouraging utilities to include electric transportation in their grant applications -- part of this is to understand how these things will operate, but on a smaller scale where it's really not going to cause

any difficulties yet. So it's really more of an information gathering exercise to understand how customers will respond -- you know, where do they want their charging stations? Do you want them on the street? Does the city want them on the parking decks? Those kinds of questions, and then some information about what it does to your operations. So hopefully we'll gain some knowledge from this and it'll help us anticipate where this may go.

CHAIRMAN FLEMING: And with the improvements that you're doing for the grid, you anticipate that you can continue to build or modify on those improvements as advances are made?

MR. JAMES: Yes, that's our plan. We're doing the stepped approach, because our belief is we need to demonstrate benefit to customers as part of the moving forward. But, yes, we do intend to continue to move forward, because we do anticipate that we will identify customer benefits, and that the investments we make will provide benefit to our customers and make those investments cost-effective.

CHAIRMAN FLEMING: Okay, thank you. Well, we certainly have appreciated the information and learned quite a bit today, and appreciate your

coming and presenting that to us. And thank you, very much.

This briefing is now adjourned.

[WHEREUPON, at 4:40 p.m., the hearing in the above-entitled matter was adjourned.]

C E R T I F I C A T E

I, Jo Elizabeth M. Wheat, CVR-CM-GNSC, do hereby certify that the foregoing is, to the best of my skill and ability, a true and correct transcript of all the proceedings had in an allowable ex parte briefing held in the above-captioned matter before the Public Service Commission of South Carolina.

Given under my hand, this the 30th day of April, 2010.

Jo Elizabeth M. Wheat, CVR-CM-GNSC

ATTEST:

Jocelyn G. Boyd

INTERIM CHIEF CLERK/ADMINISTRATOR