PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Thursday, March 18, 2010

DOCKET NO.: E-100, Subs 118 and 124

TIME IN SESSION: 1:00 P.M. - 4:19 P.M.

BEFORE: Commissioner William T. Culpepper, III, Presiding
Chairman Edward S. Finley, Jr.
Commissioner Lorinzo L. Joyner
Commissioner Bryan E. Beatty
Commissioner Susan Warren Rabon

IN THE MATTER OF:

Volume V

Investigation of Integrated Resource Planning in North Carolina - 2008 and 2009

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E X H I B I T S I D E N T I F I E D/ A D M I T T E D

P R O C E E D I N G S

COMMISSIONER CULPEPPER: Good afternoon. Let's come back to order and go back on the record. Mr. Anthony and Ms. Bowman, I believe we are with your rebuttal case now. Do you have some rebuttal evidence you would like to offer this afternoon?

MS. BOWMAN: Yes. May we call our panel again?

COMMISSIONER CULPEPPER: You may.

MS. BOWMAN: Mr. Fonvielle, Mr. Snider and Mr. Edge.

COMMISSIONER CULPEPPER: Okay. Gentlemen, come forward and have a seat. If you'll remember that each of you have already been sworn in this proceeding -- these proceedings and you're still under oath.

DAVID KENT FONVIELLE,
GLEN A. SNIDER AND
DAVID CHRISTIAN EDGE; Having been previously duly sworn, testified as follows:

DIRECT EXAMINATION BY MS. BOWMAN:

Q. Mr. Fonvielle, we'll start with you. Did you cause to be prefiled in this docket rebuttal testimony consisting of 13 pages?

A. Yes, I did.

Q. And do you have any changes or corrections to that

rebuttal testimony?

A. No, I do not.

MS. BOWMAN: Mr. Chairman, I move that Mr. Fonvielle's rebuttal testimony be copied into the record as if orally given from the stand.

COMMISSIONER CULPEPPER: Motion allowed.

(Whereupon, the prefiled rebuttal testimony of David Kent Fonvielle will be reproduced in the record at this point the same as if the questions had been orally asked and the answers orally given from the witness stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION

DOCKET NO. E-100, SUB 124

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	**REBUTTAL TESTIMONY OF**
Investigation of Integrated Resource	)	**DAVID KENT FONVIELLE**
Planning in North Carolina – 2009	)	**ON BEHALF OF CAROLINA**
	)	**POWER AND LIGHT COMPANY**
	)	**D/B/A PROGRESS ENERGY**
	)	**CAROLINAS, INC.**

Q. Mr. Fonvielle, please state your full name for the record.

A. My name is David Kent Fonvielle.

Q. Have you previously filed direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to provide the Commission with a general sense of the observed prices for solar photovoltaic (solar PV) generation, wind generation, and biomass generation. I also will describe the projected amount of generation, available to PEC, from these resources and the capacity factor of each resource type based on industry data and PEC's direct observations. I will also respond to the assertion by Mr.

Reading, on behalf of CPI USA North Carolina LLC, that PEC's IRP does not adequately fulfill the requirements and goals of Senate Bill 3.

Q. In general, what range of prices is PEC being offered to purchase solar photovoltaic generation?

A. With respect to specific contract prices, PEC is under confidentiality agreements with a number of counterparties. However, based upon market data collected through our renewable RFP open since late 2007, and other direct market observations since that time, solar PV generation prices are in a range of $140 per MWh and $270 per MWh. These prices vary based on many factors including the size, location, and type of installation, and the availability of tax credits and grants. Other publicly available data includes PEC's SunSense Commercial PV program that offers $180 per MWh for the electricity and renewable energy credits (RECs), and NC GreenPower's offer of $150 per REC, which added to PEC's payment for energy results in a total payment of approximately $200 per MWh.

Q. In general, what is the range of prices PEC is being offered to purchase wind generation?

A. Since issuing our original renewable RFP in 2007, PEC has received no proposals for wind development in North Carolina or in the offshore waters of North Carolina. The only pricing observations for land-based wind

turbines were indicative prices ranging from $82 to $115 per MWh for wind generated in West Virginia. These prices did not include costs to deliver the energy to the PEC system. While PEC has actively engaged in discussions with a developer in the early stages of exploring wind development in the offshore waters of North Carolina, we have received no pricing information associated with their proposed development. One public observation of offshore wind pricing can be found in power purchase agreements between Delmarva Power & Light and Bluewater Wind Delaware LLC, filed with the Delaware PSC on June 23, 2008. Based upon pricing contained in the document the cost for energy and RECs, assuming a 30% capacity factor, would be approximately $168 per MWh in the first year of operation, then escalating at 2.5% per year thereafter, for an average price of approximately $232 per MWh over 25 years. These costs do not take into account the additional revenue Bluewater would expect to receive from selling the 71.4% of the RECs generated in which they retain ownership. Other public information on offshore wind brings into question whether the prices for Bluewater Wind are overly optimistic. In December 2009 National Grid executed an agreement with Deepwater Wind to purchase the output from Deepwater Wind's proposed project off the coast of Rhode Island. The power purchase agreement calls for National Grid to pay $253 per MWh,

escalating 3.5% per year, for 20 years. This results in an average price of more than $300 per MWh over the life of the contract.

Q. In general, what is the range of prices PEC is being offered to purchase biomass generation?

A. Biomass generation encompasses a number of different technologies and a variety of different fuel sources, including landfill gas, animal waste, wood waste, and crop residues. Based upon studies of biomass generation and estimated pricing, such as the La Capra study, and pricing observed by PEC over more than two years through our renewable RFP, biomass generation ranges in pricing from $65 per MWh to $180 per MWh. These prices vary based on fuel source, technology, and size of installation.

Q. How much photovoltaic generation, wind generation and biomass generation is available or can reasonably be expected to become available in North Carolina within the next five to 10 years?

A. <u>Solar</u>

As noted by the La Capra Study the technical potential for solar PV is difficult to assess. What must be considered is the practical potential of solar PV, given the challenges it faces in cost-effectively and reliably meeting load and its cost relative to other renewable resources. Based upon the current cost of solar PV observed by PEC and its limited operational

capabilities, I see no reason to anticipate much more solar PV than the amount required by Senate Bill 3. The one thing that could increase this amount would be its cost becoming more competitive than other available renewable resources. While we do not anticipate a sizeable increase in the amount of solar PV above what is required by Senate Bill 3, PEC has been very aggressive in the solar market since passage of Senate Bill 3. We partnered with a developer to build the first 1 MW solar PV farm in North Carolina on land at our Sutton plant, developed the first standard offer to purchase RECs to support development of commercial solar thermal projects, developed the first standard offer contract to purchase the output from rooftop solar PV installations, and as a result have executed 31 contracts with 17 separate solar developers. The vast majority of these contracts are with local North Carolina companies. These activities support the goals of Senate Bill 3 to diversify resources used to meet the state's energy requirements, use resources indigenous to the state, encourage private investment in renewable energy, and to improve air quality. A review of IRP Appendix D, Exhibit 8 (pg. D-14) shows that PEC plans to have 83 GWhs of solar PV by 2016, which is two years earlier than the requirements of Senate Bill 3. This level of generation is roughly equivalent to 60 MWs of solar generation.

Wind

Based upon restrictions on the placement of wind turbines in the North Carolina mountains, PEC does not anticipate utility-scale wind development in western North Carolina during the planning horizon. This assumption has been reinforced through discussions with wind developers over the past couple of years. While there is some gathering interest in the possibility of wind development in the offshore waters of North Carolina, the experience of earlier development activities in Northeastern states where several projects are approaching a decade of development activities with no construction, tempers expectations for North Carolina development. At this time, PEC sees no reason to anticipate the availability of offshore wind within the current planning horizon, based on price, technological hurdles, and permitting difficulties. Therefore, it is not prudent at this time to include wind generation in the REPS Compliance Plan.

Biomass

Biomass generation in North Carolina will primarily come from renewable wood waste, poultry waste, swine waste, and landfill gas. The amount of biomass generation that can be developed, to serve PEC's load and meet the renewable requirements of Senate Bill 3, can be estimated by analyzing the practical amount of fuel available from each source.

Wood Waste: Using the data compiled by La Capra Associates, numerous discussions with developers and potential wood suppliers, and third party studies of availability of renewable wood waste, approximately 300 MWs to 400 MWs of wood-fired generation could be developed to serve PEC's load.

Poultry Waste: Based on the analysis performed by La Capra Associates the practical potential for poultry generation is 105 MWs for the entire state of North Carolina. This is consistent with public plans announced by Fibrowatt to develop three plants totaling 150 MWs using approximately 65% poultry litter fuel. Since poultry waste is a set aside requirement for all utilities in the state, the amount of generation available to PEC would be approximately 35 MWs to 50 MWs.

Swine Waste: The study conducted by La Capra Associates analyzed the annual amount of swine waste generated in the state, calculated the amount of useable methane produced, and arrived at a practical potential of 90 MWs for the entire state. La Capra estimated that a typical 12,000 head operation would support 150 kW of generation (80 head/kW). Two other sources of information that can be used to estimate the potential amount of swine waste generation that could be available to PEC are proposals received through our RFP efforts and an evaluation of applications submitted to the North Carolina Department of Environment and Natural Resources ("NCDENR")

in response to Senate Bill 1465. Through PEC's standard renewable RFP and a special swine RFP issued by PEC in May 2009, PEC has received proposals totaling approximately 3.5 MWs. An evaluation of applications submitted pursuant to Senate Bill 1465 indicates 35 swine farms in PEC's territory with a total of 265,000 head. Using La Capra Associates' estimate of 80 head per kW, these farms would represent a total generation potential of 3.5 MWs. PEC is also aware of one proposal that would use waste from swine processing that could also add several MWs to this potential. Based upon these direct observations of the market, PEC anticipates 5 MWs to 10 MWs of available swine generation.

Landfill Gas: La Capra Associates reported a practical potential of 150 MWs of landfill gas generation for the entire state. Based upon PEC's geographic territory and share of North Carolina's retail load, a good estimate of landfill gas generation available to PEC is up to 50 MWs. PEC currently purchases renewable generation from two landfill gas projects totaling 6.5 MWs. Through our on-going renewable RFP efforts, PEC has identified other landfill gas generation projects that could provide somewhere between 15 MWs and 30 MWs of additional generation. We are actively negotiating with these counterparties and hope to reach final agreements this year.

All of these potential biomass resources, taken together, could provide an estimated 390 MWs to 510 MWs over time. Based upon observed and expected capacity factors for each technology, and assuming all of these resources were dispatched based on their availability not their costs, the total annual generation capability would be approximately 2.8 million to 3.8 million MWhs. This is roughly equivalent to PEC's 12.5% Senate Bill 3 requirement in 2021 assuming the maximum amount of energy efficiency that can be credited towards compliance.

Q. Please describe the capacity factors that can reasonably be expected from solar photovoltaic generation, wind generation and biomass generation?

A. Capacity factors for solar PV range from 10% to 20%. Data from installations under contract with PEC show annual capacity factors in the 15% to 20% range. The capacity factor of wind generation is highly dependent on the wind class where the turbines are sited, the higher the wind class the higher the resulting capacity factor. Typical capacity factors for wind generation are 20% to 30%. Both solar and wind generation have highly intermittent generation profiles based on cloud cover and variability of wind respectively. Most biomass generation will have relatively high capacity factors due to the ability to store fuel on site or as a result of a

relatively steady stream of in situ fuel in the case of swine waste and landfill gas. Typical capacity factors can be expected in the range of 70% to 90%.

Q. Do you agree with Mr. Reading's conclusion that PEC's IRP does not adequately fulfill the goals of Senate Bill 3?

A. No.

Q. Please explain.

A. Mr. Reading appears to confuse Table 1 of the IRP (pg. 22), which simply depicts existing and planned capacity resources necessary to meet the projected peak load in each year, with PEC's plan to meet our renewable energy requirement which is outlined in IRP Appendix D, Exhibit 7 (pg. D-13). While renewable resources that provide firm capacity to the system are reflected in Table 1, renewable energy certificates with no associated generation and renewable resources with no firm capacity value are not shown. Therefore, one cannot possibly evaluate PEC's compliance with Senate Bill 3 by reviewing Table 1. Mr. Reading does in his testimony attempt to evaluate IRP Appendix D, Exhibit 7 over an arbitrary period of 2010 through 2016. However, Mr. Reading draws several incorrect conclusions from his analysis of that period. Mr. Reading's statement that the out-of-state wind RECs shown account for 17% of the total requirements through 2016, and that PEC can only purchase an additional 679 GWhs of

out-of-state RECs during that period is not a correct or relevant analysis. The out-of-state RECs shown can be used for compliance through 2018, which equates to only 9% of the requirement over that period and would allow PEC to procure an additional 2337 GWhs of out-of-state RECs if necessary. Finally, based upon his analysis of the arbitrary period 2010 through 2016, Mr. Reading concludes that PEC will need to add 146 MWs of renewable capacity based upon an assumed 50% capacity factor in order to be in compliance. If Mr. Reading's analysis was relevant, his assumed capacity is overstated since many biomass resources operate at significantly higher capacity factors. However, his analysis is not relevant since PEC does not have to make decisions today in order to be compliant in 2016. Development times for green field biomass facilities range from 1 to 3 years. Being conservative and using a development time of 3 years, PEC would need to contract for a new resource by the end of this year in order to have additional renewable generation on-line for 2014. Counting only energy efficiency projections, contracted purchases, and the ability to use 25% out-of-state RECs each year, PEC is already compliant through 2013 and would need to add only 200 GWhs total to be compliant in 2014. For example, this is only 25 MWs of wood biomass brought on-line in 2014 or as little as 10 MWs of landfill gas brought on-line in 2012.

Q. Do you agree with Mr. Reading's statement that renewable resources are shown to decline in PEC's resource plan?

A. No. Mr. Reading in his testimony appears to incorrectly base his conclusion on renewable resources shown only in Table 1. As previously discussed in my testimony, not all renewable resources are shown in Table 1. Appendix D of the IRP provides details regarding PEC's plan to comply with Senate Bill 3 REPS requirements. Once PEC identifies a specific renewable resource likely to be added for compliance with Senate Bill 3, which provides capacity value to the system, that resource will be added to the capacity resources listed in Table 1.

Q. Are Mr. Reading's assumptions of 50%, or as low as 30%, average capacity factor for renewable generation a valid assumption?

A. No. Many biomass resources, such as wood biomass, poultry waste, and landfill gas, operate at capacity factors between 75% to 90%. Each proposed Fibrowatt facility or a wood biomass plant of similar size will produce ~500 GWhs of renewable energy each year.

Q. Based upon Mr. Reading's testimony and your knowledge of proposals received from CPI USA are their Roxboro and Southport facilities less expensive than any non-set aside resources contracted by PEC to date?

A. No.

Q. Based upon your knowledge of recent bids PEC has received for landfill gas and wood biomass facilities are CPI USA's Roxboro and Southport facilities the most cost effective way to meet PEC's renewable requirements over the next several years?

A. No. Not based upon the proposals received from CPI USA to date.

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

BY MS. BOWMAN:

Q. Mr. Fonvielle, have you prepared a rebuttal summary?

A. Yes.

Q. Would you please give that?

A. Yes.

STATE OF NORTH CAROLINA
UTILITIES COMMISSION

DOCKET NO. E-100, SUB 124

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Investigation of Integrated Resource Planning in North Carolina – 2009	)	**SUMMARY OF THE REBUTTAL TESTIMONY OF DAVID KENT FONVIELLE ON BEHALF OF CAROLINA POWER AND LIGHT COMPANY D/B/A PROGRESS ENERGY CAROLINAS, INC.**

The purpose of my Rebuttal Testimony is to provide the Commission with a general sense of the observed prices for solar photovoltaic (solar PV) generation, wind generation, and biomass generation; and to describe the projected amount of generation, available to PEC, from these resources and the capacity factor of each resource type based on industry data and PEC's direct observations. My rebuttal testimony will also address the assertion by Mr. Reading, on behalf of CPI USA North Carolina LLC, that PEC's IRP does not adequately fulfill the requirements and goals of Senate Bill 3.

PEC is under confidentiality agreements with a number of counterparties and therefore cannot disclose prices associated with any specific renewable resource contained in our compliance plan. However, based upon market data collected through our renewable RFP open since late 2007, and other direct market observations since that time, I will provide a range of prices applicable to potential North Carolina renewable resources. Solar PV generation prices tend to be in a

range of $140 per MWh to $270 per MWh, with capacity factors between 15% and 20%. The practical potential of solar PV over the IRP planning horizon will be dictated by its ability to cost-effectively and reliably serve load and its cost relative to other renewable resources. Based upon the current cost of solar PV and its limited operational capabilities, we do not anticipate a sizeable increase in the amount of solar PV above what is required by Senate Bill 3. PEC has been very aggressive in the solar market since passage of Senate Bill 3. We partnered with a developer to build the first 1 MW solar PV farm in North Carolina on land at our Sutton plant, developed the first standard offer to purchase RECs to support development of commercial solar thermal projects, developed the first standard offer contract to purchase the output from rooftop solar PV installations, and as a result have executed 31 contracts with 17 separate solar developers. The vast majority of these contracts are with local North Carolina companies.

Since issuing our original renewable RFP in 2007, PEC has received no proposals for wind development in North Carolina or in the offshore waters of North Carolina. The only pricing observations for land-based wind turbines were indicative prices ranging from $82 to $115 per MWh for wind generated in West Virginia. These prices did not include costs to deliver the energy to the PEC system. PEC has actively engaged in discussions with a developer in the early stages of exploring wind development in the offshore waters of North Carolina,

however we have received no pricing information associated with their proposed development. Public observations of offshore wind pricing can be found in power purchase agreements between Delmarva Power & Light and Bluewater Wind Delaware LLC, filed with the Delaware PSC on June 23, 2008, and between National Grid and Deepwater Wind for a project in the offshore waters of Rhode Island. These contracts have estimated prices of approximately $232 per MWh and $300 per MWh respectively, averaged over the life of the contracts. Capacity factors for wind are typically in a range of 20% to 30%. Based upon restrictions on the placement of wind turbines in the mountains of North Carolina, and based on the price, technological hurdles, and permitting difficulties for offshore wind development, no major wind development is anticipated to occur during the IRP planning horizon.

Biomass generation encompasses a number of different technologies and a variety of different fuel sources, including landfill gas, animal waste, wood waste, and crop residues. Based upon independent studies, such as the La Capra study, and pricing observed by PEC over more than two years through our renewable RFPs, biomass generation ranges in pricing from $65 per MWh to $180 per MWh, with typical capacity factors of 70% to 90%. These prices vary based on fuel source, technology, and size of installation. Biomass generation in North Carolina will primarily come from renewable wood waste, poultry waste, swine waste, and

landfill gas. The amount of biomass generation that can be developed, to serve PEC's load and meet the renewable requirements of Senate Bill 3, can be estimated by analyzing the practical amount of fuel available from each source. Using the data compiled by La Capra Associates, numerous discussions with developers and potential wood suppliers, and third party studies of availability of renewable wood waste, approximately 300 MWs to 400 MWs of wood-fired generation could be developed to serve PEC's load. Based on the analysis performed by La Capra Associates the practical potential for poultry generation is 105 MWs for the entire state of North Carolina. This is consistent with public plans announced by Fibrowatt to develop three plants totaling 150 MWs using approximately 65% poultry litter fuel. Since poultry waste is a set aside requirement for all utilities in the state, the amount of generation available to PEC would be approximately 35 MWs to 50 MWs. The study conducted by La Capra Associates analyzed the annual amount of swine waste generated in the state, calculated the amount of useable methane produced, and arrived at a practical potential of 90 MWs for the entire state. Through PEC's standard renewable RFP and a special swine RFP issued by PEC in May 2009, PEC has received proposals totaling approximately 3.5 MWs. An evaluation of applications submitted pursuant to Senate Bill 1465 indicates 35 swine farms in PEC's territory with a total of 265,000 head. Using La Capra Associates' estimate of 80 head per kW, these farms would represent a total

generation potential of 3.5 MWs. PEC is also aware of one proposal that would use waste from swine processing that could also add several MWs to this potential. Based upon these direct observations of the market, PEC anticipates 5 MWs to 10 MWs of available swine generation. La Capra Associates reported a practical potential of 150 MWs of landfill gas generation for the entire state. PEC currently purchases renewable generation from two landfill gas projects totaling 6.5 MWs. Through our on-going renewable RFP efforts, PEC has identified other landfill gas generation projects that could provide somewhere between 15 MWs and 30 MWs of additional generation. We are actively negotiating with these counterparties and hope to reach final agreements this year.

All of these potential biomass resources, taken together, could provide an estimated 390 MWs to 510 MWs over time. Based upon observed and expected capacity factors for each technology, and assuming all of these resources were dispatched based on their availability not their costs, the total annual generation capability would be approximately 2.8 million to 3.8 million MWhs. This is roughly equivalent to PEC's 12.5% Senate Bill 3 requirement in 2021 assuming the maximum amount of energy efficiency that can be credited towards compliance.

Lastly, my rebuttal testimony provides data to counter Mr. Reading's statement, on behalf of CPI USA North Carolina LLC, that PEC's IRP does not adequately

fulfill the requirements and goals of Senate Bill 3. Mr. Reading bases much of his discussion on IRP Table 1, page 22, which merely shows capacity resources to meet PEC's system peak load. PEC's REPS compliance plan data is actually shown in Appendix D, Exhibit 7 on page D-13. Counting only energy efficiency projections, contracted renewable purchases, and the ability to use 25% out-of-state RECs each year, PEC is already compliant through 2013 and would need to add only 200 GWhs total to be compliant in 2014. For example, this is only 25 MWs of wood biomass brought on-line in 2014 or as little as 10 MWs of landfill gas brought on-line in 2012. In acquiring these resources, PEC has conducted a number of RFPs and has selected the most cost-effective resources available to meet the Senate Bill 3 requirements.

This completes my summary.

BY MS. BOWMAN:

Q. Thank you, Mr. Fonvielle.

Mr. Snider, did you cause to be prefiled in this docket rebuttal testimony consisting of nine pages?

A. Yes, I did.

Q. Do you have any changes or corrections?

A. No, I do not.

MS. BOWMAN: Mr. Chairman, I move that the rebuttal testimony for Mr. Snider be copied into the record as if orally given from the stand.

COMMISSIONER CULPEPPER: Motion allowed.

(Whereupon, the prefiled rebuttal testimony of Glen A. Snider will be reproduced in the record at this point the same as if the questions had been orally asked and the answers orally given from the witness stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION

DOCKET NO. E-100, SUB 124

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	**REBUTTAL TESTIMONY OF**
Investigation of Integrated Resource	)	**GLEN ALLEN SNIDER**
Planning in North Carolina – 2009	)	**ON BEHALF OF CAROLINA**
	)	**POWER AND LIGHT COMPANY**
	)	**D/B/A PROGRESS ENERGY**
	)	**CAROLINAS, INC.**

Q. Mr. Snider, please state your full name for the record.

A. My name is Glen Allen Snider.

Q. Have you previously filed direct testimony in this proceeding?

A. Yes.

Q. *What is the purpose of your Rebuttal Testimony?*

A. The purpose of my Rebuttal Testimony is to address the Public Staff's recommendation that PEC consider utilizing its demand-side management EnergyWise program not only to meet peak demand but also to realize fuel savings. I will also address CPI USA's recommendation that PEC retire its Cape Fear and Weatherspoon coal plants earlier than 2013 and their question with respect to the treatment of purchased power contracts within the 2009

IRP. I will conclude my Rebuttal Testimony with a discussion of the application of busbar screening curves in the resource selection process.

Q. Please explain how PEC uses its Energy Wise DSM Program for resource planning purposes.

A. For resource planning purposes, PEC's EnergyWise program is used to reduce peak demand requirements that would otherwise need to be met with traditional supply-side resources. Ranges of program utilization under consideration for the EnergyWise program are all within the classification of a peaking resource. As such the increased utilization of the program would not alter the results of the 2009 IRP.

Q. Do you agree with Mr. Hinton's recommendation that the investor owned utilities continue to investigate increased reliance on air conditioning (A/C) cycling load control as both a capacity resource and as a way of lowering fuel costs?

A. As Mr. Floyd points out in his testimony, PEC's EnergyWise residential A/C load control program is relatively new. The Commission approved the program in October 2008 and PEC began implementation in April 2009. PEC agrees with Mr. Floyd that PEC should be given sufficient opportunity to determine the optimal use of this resource. Currently, PEC has less than 12 months operating experience with the new program. Much will be

learned as customer participation increases and PEC operates the load control equipment under various conditions, and gains feedback from participants. Consistent with Mr. Hinton's recommendation, PEC plans to continue to investigate and evaluate optimal use of the EnergyWise residential A/C load control program as actual operating experience is gained with the new program. That ongoing evaluation of the program will include consideration of potential benefits as a capacity resource and as a tool to lower fuel costs.

Q. Would it be the least cost option for PEC to retire its Cape Fear and Weatherspoon coal generation units prior to 2013?

A. No. These units do not require significant capital investment for environmental controls prior to 2013 and, at this time, a carbon tax on coal does not appear likely prior to 2013. Furthermore, retiring Cape Fear and Weatherspoon prior to 2013 would result in increased fuel costs for PEC's customers since these units would not be available for economic dispatch. As such it would not be in the best interest of PEC's customers to retire these units prior to 2013.

Q. Has there been a change in the assumptions used by PEC for resource planning purposes with respect to the treatment of purchased power contracts from the 2008 IRP to the 2009 IRP?

A. Yes. Prior to 2009 PEC assumed that all longer term purchased power contracts were perpetually renewed irrespective of the duration of the existing contract. Starting in 2009 PEC changed this assumption to assume such contracts expire at the end of their current terms. The following factors outline the rationale for this change:

1. PEC has rights to purchased capacity only for the duration of the existing contract;
2. At the expiry of an existing purchased power contract the asset owner may elect to sell the facility's capacity and/or energy to another purchaser;
3. At the expiry of an existing purchased power contract the facility may not be capable of providing reliable power to PEC;
4. At the expiry of the existing purchase power contract the owner may not have the financial stability to support a future contract;
5. At the expiry of an existing purchased power contract it may be determined that the resource is not the best alternative for PEC's customers depending on factors such as environmental regulations, greenhouse gas legislation, competing fuel costs, PEC's future load forecast etc.; and

6. For qualifying facility and renewable contracts the viability of the underlying asset beyond the contract period can be subject to external factors such as maintaining tax credits, steam hosts, renewable status and environmental compliance.

Q. Was this assumption change applied only to EPCOR's Southport and Roxboro purchased power contracts?

A. No. The assumption change was applied to all PEC purchased power contracts.

Q. Various witnesses have used comparisons of levelized costs per MWh, or busbar cost curves, in support of a given resource for inclusion into PEC's resource plan. Can these metrics be used for resource selection?

A. No. Levelized costs per MWh or busbar curves are completely inadequate and have no relevance in the final selection of resources for inclusion in a resource plan. Such curves when applied appropriately can be used for initial screening purposes when comparing like technologies but have no relevance beyond such use. From a quantitative perspective such comparisons have the appearance of a consistent cost per MWh basis with the intuitive selection being the resource with the lower per unit cost. In practice the most prudent and least cost investment for the customer is often

counter to such simple comparisons since such comparisons ignore one or more of the following parameters:

1. Dispatchability of the resource. For example, solar and wind resources cannot be dispatched in an economic fashion and require backup generation sources to maintain adequate reliability. Such costs are not included in simple levelized cost per MWh comparisons. Furthermore, must-run resources that run based on a need other than utility economic dispatch can impose a greater cost to the customer by running "out of economics." By way of example, if a dispatchable gas fired peaking resource costs $70 per MWh and a must run resource costs $65 per MWh one might mistakenly conclude that the $65 per MWh resource is the most cost effective resource for the customer. Resource planning would select the peaking unit taking into account the fact that the peaking unit can be turned on and off based on economic dispatch within the fleet while the must-run unit may be generating $65 per MWh power at times of day when a $40 per MWh alternative is available.
2. The resource need within an existing system. Even if two units have equal dispatchability capabilities, simple comparisons do not take into account the need for a particular resource within the existing supply and demand equation of a utility's system. For example, utility A might have

a supply and demand mix with adequate baseload resources and select a very high cost per MWh peaking resource while utility B might be in need of baseload resources and select a lower cost per MWh baseload resource. The levelized costs and busbar curves of the two resources are the same for both utilities, yet each selected a different resource based on its own comprehensive needs.

3. Total system cost implications. Levelized cost per MWh and busbar curves are often expressed in more generic terms for just the generator and do not include all relevant costs. Prime examples of such costs are transmission expenses, ancillary service requirements, and impact on utility specific dispatch.

4. Comprehensive risk factors. Simple cost per MWh comparisons fail to recognize risks such as the maturity of a given technology, long run viability and security of fuel supply, third party credit risk, regional acceptance of a technology, etc.

Q. With respect to Mr. Reading's testimony, a levelized cost comparison is made between the Roxboro and Southport facilities and that of PEC's future Wayne County facility. Is this an appropriate comparison?

A. No. First and foremost a simple cost per MWh comparison completely ignores the fact that the Wayne County facility is replacing 397 MWs of coal

being retired at the site as part of a comprehensive plan to comply with the North Carolina Clean Smokestacks Act. As stated in Mr. Reading's testimony the Roxboro and Southport facilities sum to only 134MWs and would not be of sufficient size to replace the 400MWs being retired. Even ignoring this fundamental difference, as stated in the previous response, simple cost comparisons are often misleading and inappropriate for several reasons. Specifically, Mr. Reading states "...Wayne County's levelized busbar cost to be $147/MWh..." and "an average aggregate cost for the Roxboro and Southport Facilities is under $120/MWh." Such a comparison is misleading. The $147/MWh is a simplistic representation of the projected cost of the Wayne County combined cycle over 25 years. It is not clear what Mr. Reading's $120/MWh represents, given that he does not indicate that it is a "levelized cost," it may just represent the cost of the Roxboro and Southport Facilities in one year. Comparing a representation of 25 years' worth of costs to a single year's costs is not a valid comparison. Furthermore the studies are of different vintages as the Wayne County number is taken from an August 2009 filing which is over six months old. Because of these differences, and for several other reasons listed in the previous response, it is inappropriate to compare such numbers.

Q. Does this conclude your testimony?

A. Yes.

BY MS. BOWMAN:

Q. Mr. Snider, would you please give your rebuttal summary.

A. Yes, I will. Generally, my rebuttal testimony addresses three issues: First, PEC agrees with Public Staff that as the Company gains experience with the EnergyWise program, ongoing evaluation of the program will include consideration of potential benefits of the program as a capacity resource as well as a tool for lowering fuel costs.

Second, I address CPI USA's proposal that the Company retire its Cape Fear and Weatherspoon facilities prior to 2013. My rebuttal testimony explains that early retirement before 2013 would subject PEC's customers to undue fuel cost increase and therefore is not in the public interest.

Finally, several witnesses make inferences of the need to include or exclude resources within the IRP based on busbar screening curves or levelized cost per megawatt hour comparisons. My rebuttal testimony outlines why such comparisons are not valid and are often counterintuitive due to the omission of several key variables.

PEC is committed to the selection of reliable and cost-effective resources to meet the needs of its

customers. This need is accomplished through a robust integrated resource planning process.

This concludes the summary of my rebuttal testimony.

Q. Thank you, Mr. Snider.

Mr. Edge, did you cause to be prefiled in this docket rebuttal testimony consisting of ten pages?

A. Yes, I did.

Q. And do you have any change or corrections?

A. I do not.

MS. BOWMAN: Mr. Chairman, I move that the rebuttal testimony of Mr. Edge be copied into the record as if orally given from the stand.

COMMISSIONER CULPEPPER: Motion allowed.

(Whereupon, the prefiled rebuttal testimony of David Christian Edge will be reproduced in the record at this point the same as if the questions had been orally asked and the answers orally given from the witness stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION

DOCKET NO. E-100, SUB 124

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	**REBUTTAL TESTIMONY OF**
Investigation of Integrated Resource	)	**DAVID CHRISTIAN EDGE**
Planning in North Carolina – 2009	)	**ON BEHALF OF CAROLINA**
	)	**POWER AND LIGHT COMPANY**
	)	**D/B/A PROGRESS ENERGY**
	)	**CAROLINAS, INC.**

Q. Mr. Edge, please state your full name for the record.

A. My name is David Christian (Chris) Edge.

Q. Have you previously filed direct testimony in this proceeding?

Y. Yes.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to address the recommendation provided by Witness John D. Wilson that PEC should consider a resource plan with energy savings impacts of up to 15% by 2024 and Dr. Blackburn's assumption that PEC can enjoy 1.5% annual reductions in electricity usage.

Q. Have you reviewed the studies and documents that Mr. Wilson and Dr. Blackburn apparently relied upon to support the above-mentioned savings projections?

A. Yes, I am familiar with and have reviewed most of the studies that are cited within their respective testimonies.

Q. Do you agree with Mr. Wilson's statement within his testimony that "Low electricity rates are simply not a barrier to energy efficiency"?

A. No. PEC is a cost-based regulated electric utility, therefore, electricity rates are a direct reflection of costs. Avoided costs are the core component for determining the cost effectiveness of energy efficiency investments in each of the key economic tests: Total Resource Cost (TRC), Utility Cost (UC), and Rate Impact Measure (RIM). Additionally, electricity rates are a direct component of the Participant Test, the remaining economic test for determining cost effectiveness. Thus, electricity rates are an essential factor for determining, projecting, and achieving cost-effective energy efficiency. Mr. Wilson cites a 2009 ACEEE paper allegedly supporting his dismissal of the importance of electricity rates. However, he fails to note that this same report stated the following: "it is true that the very highest savings levels thus far have been in a couple of states with very high electricity rates." The fact of the matter is, the lower a state's electricity rates, the fewer the number of energy efficiency measures and programs that are cost effective. Furthermore, low electric rates also provide less encouragement for customers to participate in energy efficiency programs.

Q. Do you agree with Mr. Wilson's approach for developing energy savings impacts of up to 15% by 2024?

A. No. It appears that Mr. Wilson's proposal is based upon the "goals and demonstrated savings of other utilities around the country."

Throughout his testimony, Mr. Wilson cites a variety of studies to support his recommended savings impact; however, no one study uses a valid approach for projecting a potential achievable energy efficiency savings impact that is specific to PEC's service territory. Some of the studies only project economic potential. Other studies attempt to measure achievable potential, but with overstated Net/Gross impacts that fail to ignore the impacts of "free-riders." Some studies are national in scope versus others that are regional. Some of the studies are not a bottoms-up study at all, but rather a meta-analysis, or average of other studies. In addition, the projected impacts of some of the studies also rely on a spectrum of policy implementations beyond just utility administered programs. For example, they may also include the effects of more stringent building codes and appliance standards, new transportation policies, federal tax incentives, etc. These external sources should not be considered in determining the realistic level of savings achievable by PEC.

In addition, all of the studies cited by Mr. Wilson fail to recognize the opt-out provision contained in North Carolina's Senate Bill 3 and North Carolina Utilities Commission (NCUC) rules as it relates to utility administered energy efficiency (EE) and demand-side management (DSM) programs. The opt-out provision represents a major factor affecting the potential for utility EE/DSM programs to achieve savings within the commercial and industrial market segments. Mr. Wilson does not recognize this issue or attempt to account for it in developing his 15% by 2024 savings projection.

Q. Do you believe Mr. Wilson's 15% savings target or Dr. Blackburn's 1.5% annual target are achievable through cost effective EE/DSM resources?

A. No. I think it is overly optimistic to assume that the very high market penetration rates required to reach those targets can be achieved in a cost-effective manner. This is especially true in the commercial and industrial market segments that are subject to the opt-out provision. In addition, new government initiatives to stimulate energy efficiency through improved building codes, increased appliance efficiency standards, new technology R&D, tax credits, and incentive programs all effectively reduce the savings potential for utility administered programs.

Q. Should Mr. Wilson's savings projection be considered for PEC resource planning purposes?

A. Absolutely not. PEC should not modify its resource planning process to include arbitrary demand-side resource impacts based solely on the aspirational goals of other states around the country. Rather, PEC should continue to rely upon the comprehensive analysis of EE and DSM program opportunities that lie within its Carolinas' service territory, combined with the experience gained through the actual implementation and evaluation of programs.

Q. Has PEC conducted a comprehensive analysis of achievable energy efficiency potential within its service territory?

A. Yes. Contrary to using an approach that derives the market potential from averaging other studies, PEC contracted with ICF International, an industry leader in the design, implementation, market assessment and evaluation of EE and DSM programs, to perform a comprehensive analysis of the cost-effective, achievable potential across PEC's service territory. This study considered the PEC-specific factors that impact potential savings from utility administered EE and DSM programs including: demographic and customer composition, PEC electric rates and avoided costs, known regulatory factors (i.e. the significant effect of customer opt-out provisions), and other

assumptions specific to PEC's service territory. The study was intended to identify the approximate amount of cost-effective savings that can realistically be achieved through utility EE/DSM programs within the PEC service area over an extended period of time (and under a stated set of assumptions). To that extent, it serves as the foundation for identifying general areas and programs that might warrant consideration in PEC's EE/DSM portfolio.

Q. What were the conclusions of the ICF EE/DSM potential study?

A. The study concluded that approximately 1,020 MWs and 2,094 GWhs are cost-effectively and reasonably achievable in the PEC service area over the next 15-years. This accounts for the anticipated effect of large commercial and industrial customers opting-out of the programs. The study also concluded that these estimates are suitable for use in long-range system planning models and integrated resource planning, and serve as a foundation for identifying general areas and programs that might warrant further analysis.

Q. How is PEC progressing in evaluating and possibly offering the EE/DSM programs identified by the ICF study?

A. Over the past two years PEC has developed, and gained Commission approval of numerous new EE and DSM programs identified within the ICF

potential study. For example, PEC's CIG Energy Efficiency program includes both prescriptive and custom components that essentially cover all feasible cost-effective non-residential measures. Since the time the ICF potential study was completed in March 2009, PEC has filed for Commission approval four additional new programs, including Residential Lighting, Neighborhood Energy Saver (Low-Income), CIG Demand Response and Appliance Recycling. To date, all but the latter have been approved by the Commission, and the Appliance Recycling program will be addressed by the Commission on March 15, 2010. All approved programs are currently being offered to customers. Additionally, PEC is currently developing and planning to file a residential behavioral change program that was also identified as an opportunity within the ICF potential study.

Q. Why does PEC consider the ICF study confidential?

A. PEC only considered the Appendix to the ICF Potential Study to be confidential, not the entire study. The Appendix was originally determined to be confidential because it contained individual measure data derived from a separate proprietary study, and that data was the intellectual property of parties other than PEC. However, after further review, PEC has determined that the Appendix does not specifically identify the source information from

that study and is willing to make the study and Appendix available to any interested party upon request in the future.

Q. Should the demand-side resource projections contained in PEC's IRP be based solely on a market potential study?

A. No. I stated earlier that a comprehensive analysis should be "combined with the experience gained through the actual implementation and evaluation of programs." There are many risks and uncertainties associated with energy efficiency resources, and they should be carefully considered when incorporating long-range program impacts into an integrated resource plan. Mr. Wilson appears to agree that this is the case because in his Exhibit 5 he states:

> "Energy efficiency resources are different because in three critical ways. Energy savings or conservation resources cannot be controlled or stored in the same way that conventional supply-side resources can be managed. Second, energy efficiency impacts cannot be measured in the same way that supply-side resources can be metered at the plant and customer site. Third, energy efficiency resources are typically delivered by a service provider network and customer base that is far more diverse and complex than the contractors who assist utilities in building and maintaining power plants. In a utility resource plan, these differences must be considered when assessing the uncertainties and risks associated with energy efficiency resources."

These differences between EE/DSM resources and traditional supply side resources are important, as they greatly affect a utility's ability to ensure

reliable service to its customers.. If an EE/DSM resource does not achieve its projected impact, penetration, or sustainability, the utility will have to quickly replace it with another resource; otherwise, reliability will be impaired. This issue has to be considered in a utility's resource planning process.

There is also no substitute for actual program experience when trying to learn and understand the impacts, risks, and uncertainties associated with any given EE program. In fact, in Exhibit 5 to his testimony, Mr. Wilson describes "one technique that leading energy efficiency programs use to address these barriers is to ramp up gradually over time as the program builds success in overcoming customer and market barriers such as lack of information." He further explains that "The ramp up approach is also needed because the **actual capacity of a demand-side resource is only discovered through effective program execution – potential studies and industry experience are merely forecasts of actual program results"** (emphasis added).

PEC agrees with this approach. Demand-side resource impacts that get incorporated into PEC's resource plan should be based on a combination of market analysis and actual experience, with strong consideration to the risks and uncertainties that are identified within Exhibit 5 of Mr. Wilson's

testimony. Establishing an arbitrary value based on the goals of other states is simply not responsible.

Q. Has PEC requested any participation caps within its approved EE/DSM programs that would limit the achievable impacts of cost-effective energy efficiency across its service territory?

A. No.

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

BY MS. BOWMAN:

Q. Mr. Edge, would you please give your rebuttal summary.

A. On March 9, 2009, I submitted rebuttal testimony to address recommendation by Witness John Wilson that PEC should consider efficiency savings in its resource plan up to 15 percent by 2024 and Witness Dr. John Blackburn's recommendation for a one and a half percent annual energy efficiency reduction through 2024. Neither of these recommendations should be considered for PEC's resource planning purposes, as they are arbitrary and not supported by any comprehensive analysis or proven experience within PEC's service territory.

There are many risks and uncertainties associated with energy efficiency resources and they should be carefully considered when incorporating long-term -- long-range impacts into an integrated resource plan. Energy efficiency savings cannot be controlled or stored in the same way that conventional supply-side resources can be managed. Energy efficiency impacts cannot be measured in the same way that supply-side resources can be metered at the customer site. And finally, energy efficiency resources are typically delivered by service providers and accepted by customers that are extremely

diverse and complex and very difficult to predict.

These differences between demand-side resources and traditional supply-side resources are incredibly important, as they greatly affect a utility's ability to ensure reliability to its -- reliable service to its customers. If a demand-side management or energy efficiency resource does not achieve its projected impact, penetration or sustainability or rely -- reliability could be impaired.

The demand-side resource impacts that get incorporated into PEC's resource plan should be based on a combination of market analysis and actual experience, with strong consideration to the risks and uncertainties previously mentioned.

Rather than relying on aspirational goals of other states or economic analyses that dismiss significant market and regulatory characteristics unique to North Carolina, PEC contracted with a leading industry consulting firm to perform a comprehensive analysis of a cost-effective, achievable potential specific to PEC's service territory. This study was intended to approximate the amount of cost-effective savings that can be realistically achieved over an extended period of time, with consideration to the market conditions and regulatory

environment of PEC.

The projected savings that were identified within this study are consistent in magnitude with the savings projected in PEC's 2009 Integrated Resource Plan. However, there is no substitute for actual program experience when trying to learn and understand the impacts, risks and uncertainties associated with any given DSM or EE program.

PEC has demonstrated its commitment to pursue cost-effective DSM and energy efficiency programs that are reliable and feasible. In just the past year, PEC has developed and launched a broad spectrum of programs with energy saving opportunities available to all customers, including residential and non-residential. The experience gained through these initiatives combined with future market analysis specific to PEC's service territory should be the primary basis for incorporating any long-range demand-side impacts into an integrated resource plan, otherwise system reliability and cost-effectiveness of the portfolio may be jeopardized.

This concludes my summary.

Q. Thank you, Mr. Edge.

MS. BOWMAN: Mr. Chairman, the panel is available for cross.

COMMISSIONER CULPEPPER: Cross-examination, Mr. Kaylor?

MR. KAYLOR: No cross.

COMMISSIONER CULPEPPER: Cross-examination from the intervenors, Mr. Runkle?

MR. RUNKLE: Thank you, sir.

CROSS-EXAMINATION BY MR. RUNKLE:

Q. Gentlemen, good afternoon.

A. (By Mr. Edge) Good afternoon.

Q. And let's start with just a couple of questions on Mr. Fonvielle's testimony.

In your testimony you look at photovoltaic, solar photovoltaics and various of the biomass and wind generation, do you not?

A. (By Mr. Fonvielle) Yes, sir.

Q. Now, in -- in your rebuttal testimony, you don't mention solar hot water heater or some of the other solar thermal applications, do you?

A. In my rebuttal testimony I do not.

Q. Did you look, in preparing your testimony, looking at the price of solar hot water heaters?

A. I have. I and my staff have looked extensively at the cost-effectiveness of solar hot water heaters in preparing our commercial solar thermal program that offers

a REC value to folks who put in solar water heating to displace electricity and have experience over the last year or so with participation in those programs.

Q. Have you looked at -- have you and your team looked at the residential solar hot water heaters?

A. Our residential solar thermal program has actually been managed in our energy efficiency department, so I'll let Chris Edge speak to that.

Q. Okay. Mr. Edge, do you all consider solar hot water as an energy efficiency measure?

A. We are currently conducting a pilot which has been approved by this Commission to determine the attributes which in essence allow us to measure the cost-effectiveness of solar hot water technologies.

In essence, the program is a scaled pilot of 150 participants of which we've offered to provide a $1,000 rebate to participants who are interested in installing solar hot water. And the intent thereafter is that we measure it to, one, determine the -- if -- the measured savings over a period of time as well as the -- what's the peak impact.

We launched that program back in June of last year again with a $1,000 rebate maxed at 150 participants. And I think to date we have received approximately 100 -- only

100 applications for the program.

Q. Are there other -- are there other companies or entities in the state that are doing solar hot water heaters for res -- on the residential side?

A. (By Mr. Edge) Could you ask the question again?

Q. Are there other entities or companies doing solar hot water installation in the -- in the -- in your service area?

A. There are companies who are installing solar hot water in our service territory, that's correct.

Q. Do you know the number of solar hot -- residential solar hot water heaters that are being installed in your service area?

A. The only ones that we have knowledge of thus far are the hundred who have applied to us through our program, but aside from that, we don't have any appliance saturation date on them.

Q. In your IRP do you estimate the number of -- does it include your -- over the planning horizon include a forecast of the -- of the number of solar -- residential solar hot water heaters for the state?

A. No. It's not captured in our DSM and EE impact projections.

Q. If I can -- Mr. Edge, can I ask you to look at

your prefiled rebuttal testimony on page 4. And the question on page is "Do you believe Mr. Wilson's 15 percent savings target or Dr. Blackburn's 1.5 percent annual target are achievable through cost-effective EE/DSM resources?" Your answer is no and then you explain your answer. Are you there?

A. Yes, I am.

Q. Now, my question is -- I guess my question is looking at the term "cost-effective EE/DSM resources," what are you referring to in that?

A. Again, relative to the discussion we had yesterday, referring to it as achievable, cost-effective utility-administered DSM and EE resources.

Q. So -- so you're characterizing Dr. Blackburn's and Mr. Wilson's recommendations for a 15 percent target or a 1.5 percent annual as those would be the savings potential for utility-administered programs?

A. That is the -- in my rebuttal, that is the -- in essence, yes, that's correct.

However, in light of Dr. Blackburn's testimony, it appears that that, in fact, is not what he was intending to represent in his one-and-a-half percent -- percent projected target. I believe in his testimony before the Commission on Tuesday he went further to say that it was

around established policies in energy efficiency and gave some examples of tax credits, building codes, appliance standards.

And one of his final comments, I believe, and perhaps I'm paraphrasing, was that, in fact, very little might have to come from utility programs. So in light of that, I perhaps misinterpreted his -- his testimony.

Q. And, in fact, in the last sentence in your answer you raise those same kinds of potential drivers of energy efficiency such as new building codes, appliance efficiency standards, some new R&D, tax credits and incentive programs; is that correct?

A. Yes. I refer to it in the sense that when -- as those standards are raised, it effectively lowers the cost-effectiveness or the potential for cost-effective energy efficiency measures that are administered by the utilities.

Q. So if somebody else is going to do it for whatever reason, then Progress Energy won't have that opportunity to do those -- that part of the energy efficiency picture?

A. I didn't say that we wouldn't have the opportunity. I just said it lowers the cost-effectiveness. So if -- as an example, if appliance standards and building codes are raised, it effectively

raises the threshold or baseline so that in order to create any incremental savings above and beyond that, it is incrementally more expensive to attain higher levels of efficiency, therefore reducing the cost-effectiveness of potential.

Another such example is if a federal entity or a state entity implements a program that provides measures and savings that overlap the utility, we had quite a bit of discussion the other day around net to gross, it effectively creates more free riders on utility-administered programs. So there's two different variances of which it reduces the cost-effective [sic] of utility-administered programs.

Q. Okay. And let's use an example for appliance efficiency standards. Refrigerators, would Progress Energy consider having a refrigerator swap-out program based on a cost-effective energy efficiency resource that swapped out old refrigeration to new ones?

A. We have submitted a program, an appliance recycling program before this Commission which is currently being considered. It is not a swap-out program, but rather it is a retirement program intended to reduce the number of secondary refrigerators. So I wouldn't refer to it as a swap out.

Relative to the data we have available today, we would not incent new Energy Star energy efficiency refrigerators, as it's determined to not be cost-effective right now as a measure.

Q. But that could be a program that you could adopt in the future if it be -- looked at -- became more cost-effective or a similar kind of program looking at large appliances to make them more efficiency [sic]?

A. If it became cost-effective, absolutely. We've committed to the fact that we'll pursue all cost-effective energy efficiency.

Q. But if the government or federal government or the General Assembly in its wisdom had a special program that would provide rebates or tax credits for appliance efficiency; that would cut down on the number that would be cost-effective for you to swap -- and I used the words "swap out" again -- to replace?

A. Again, I -- we haven't proposed any program to swap or replace. We've currently still, even under today's conditions without government intervention, determined that that measure is not cost-effective.

Our program, which has been submitted before the Commission, I'm not sure if that's what you're referring to, is simply a retirement of older, inefficient secondary

units.

Q. I'm really -- I'm using -- really using that as an example. Not -- not to suggest that what you're doing or what you're planning on doing is not a good program. But just to say as an example of how somebody else's actions, such as a government tax credit, could affect the cost-effectiveness or the -- even the saturation or any -- any number of other --

A. Absolutely. Government intervened programs, tax credits, they all impact the cost-effectiveness test, which we -- we went through and -- and -- and pretty detailed yesterday, in a couple of different ways. It creates fluctuations in the participant cost, which is used within the total resource cost evaluation; and then it inherently has ability to create additional free driver/free rider -- probably more inherent for free rider -- impacts that impact cost-effectiveness of our programs, that's correct.

Q. And then similarly with the -- with the sentence before that, if the commercial and industrial mark -- markets opt out of Progress Energy's energy efficiency programs, that doesn't mean that they're not going to do energy efficiency on their own, does it?

A. Not at all.

Q. And it just means they are -- an industrial customer may buy a more efficient turbine or replace -- replace some of their chillers with some much more efficient chillers?

A. Their decision to opt out of our program creates no barriers for them to invest in efficiency on their own. In fact, I think that was the purpose of the rule itself and the subsequent legis -- or the legislation.

Q. And so when you're -- when you're providing your criticism of the 15 percent savings or Blackburn's 1.5 annual target, that's really -- that -- I think what you're really suggesting is that Progress Energy at this time -- looking at their cost-effectiveness tests, the different screening tests -- cannot meet that target?

A. When I'm -- when I'm providing the criticism is, is that we should not -- we have no market analysis that supports those level of achievements within our integrated resource plan through utility-administered programs.

Now, I've gone again on record that Dr. Blackburn, it appears, was not suggesting that we should embed those targets within our utility-administered programs. I'm not sure that I've interpreted the same from Mr. Wilson's recommendations.

Q. I understand that, but his counsel may want to ask

you questions about that, but...

A. Sure.

Q. Now, in preparing the IRP gentlemen, in looking at the total of energy efficiency/DSM, that total may have an impact on the load growth, does it not?

A. (By Mr. Snider) Yes, it does.

Q. Yeah. The total -- total -- the total global out there energy efficiency would have an impact on the load forecast.

Now, in preparing the IRP, did you consider the potential impact of widespread solar hot water heaters on the residential side?

A. (By Mr. Snider) No, I don't believe it was explicitly incorporated into the load forecast as a -- its own independent variable.

Q. And/or if a residential customer might do -- might purchase energy efficient lightbulbs or energy efficiency appliances outside of a Progress Energy program?

A. Those are in there.

Q. Okay. And those are in -- just in your long-term economic forecast?

A. Correct.

Q. All right. And the same with the commercial and industrial, the commercial and industrial customer would

do some energy efficiency measure outside of a Progress Energy program?

A. Implicitly they're in there, yes.

Q. Okay.

MR. RUNKLE: All right. I have no further questions. Thank you.

COMMISSIONER CULPEPPER: Ms. Thompson, do you have any cross-examination of the witnesses?

MS. THOMPSON: Yes, sir. Thank you.

CROSS-EXAMINATION BY MS. THOMPSON:

Q. Good afternoon, gentlemen.

A. (By Mr. Edge) Good afternoon.

Q. I think all my questions are for Mr. Edge. Mr. Edge, you've been in your current position at Progress Energy since November 2009; is that correct?

A. The -- we -- the current position of retail strategy. Prior to that I was manager of our demand-side management and energy efficiency and that begun on December of 2007.

Q. And that is -- you've anticipated my next two questions.

A. Okay.

Q. So was the manager of DSM and alternative energy position, was that a new position at the Company at that

time?

A. Yes, it was.

Q. Now, on page 2 of your rebuttal, and if you begin on where you were just discussing with Mr. Runkle on page 4 -- oh, I'm sorry, page 2.

You disagree with Mr. Wilson's statement that low rates are not necessarily a barrier to energy efficiency; is that right?

A. That's correct.

Q. And you explain that this is because rates affect whether energy efficiency is cost-effective?

A. That's one of the explanations. But in addition, it's -- I go on to further state that it's -- it's an impact relative to the participation adoption, as we described and provided an analogy yesterday on pennies versus quarters. Same economic principle.

Q. Can you -- could you -- oh, I see. Are you referring to page 2 -- lines 19 and 20 on page 2 of your --

A. That's correct.

Q. Okay. Thank you. I want to ask you about PEC's market potential study, but I want to confirm with your counsel that the study's not confidential because the copy we received was stamped confidential on every page.

A. It is not. In the rebuttal we hopefully clarified that -- that originally the study itself was not confidential, only the appendix, but after further review we've determined that neither the appendix nor the study should be confidential, so we're comfortable in discussing it.

Q. Okay. Great. Thanks. So ICF International performed that energy efficiency potential study for --

A. Yes.

Q. -- PEC?

A. Yes.

Q. And that study was completed in March 2009?

A. The final report was issued March 2009.

Q. And this study identified a number of measures that were cost-effective; is that right?

A. It did.

Q. Approximately how many?

A. I haven't counted. I'm sorry. There were 300 -- approximately 300 measures that were incorporated into the study, but I haven't even counted the -- out of the 300 which ones passed and which one didn't.

Q. And presumably a number of those measures were -- well, obviously those measures that were determined to be cost-effective were determined to be so, even though North

Carolina does have low electricity rates, correct?

A. I'm sorry, I don't understand your question. Those --

Q. I'll break up my question. Sorry. North Carolina's rates, would you characterize them as low?

A. I would characterize them as being an average of nine and a half cent for residential and -- yes. They're lower than other states and they're higher than some other states.

Q. And with those rates a number of measures -- well, a number of energy efficiency measures were determined to be cost-effective in the study performed by ICF, correct?

A. I think you're saying rates. We compare the investment value of the efficiency against the avoided costs using, so against our projected avoided cost those measures were determined to be cost-effective, yes.

Q. So you've got -- identified rates as one potential barrier to energy efficiency. I would like to talk about some of the other barriers and how they might be addressed.

Would you agree that a statewide policy such as the renewable and efficiency portfolio standard that we have here in our state can help to remove some of those barriers or address some of those barriers?

A. You'd have to further clarify your comment or your question.

Q. Well, to get a little more specific, we have a state policy that allows for recovery of costs and deferral and amortization of the costs of energy efficiency resources, plus an incentive, correct?

A. Yes. The Commission has adopted a cost recovery mechanism that incorporates timely cost recovery, consideration for loss margins and as well as incentive. So it certainly is intended to address the disincentives or the barriers that traditionally exist in this.

Q. And the Commission has recently or within the last -- I can't remember exactly the date, but the Commission has approved the Company's proposed DSM/EE compensation structure, correct?

A. Yes. The recovery mechanism was approved last year.

Q. Are you familiar with the Commission's rules regarding integrated resource planning? I know it's not your department. I may -- maybe should ask these questions to Mr. Snider.

Let me try. Are you familiar with Commission Rule 8-60, R8-60?

A. (By Mr. Snider) Generally, yes.

Q. And that rule provides that each -- Rule R8-60(i)(6) provides that "each utility shall provide the results of its overall assessment of existing and potential demand-side management programs, including a descriptive summary of each analysis performed or used by the utility in the assessment." Does that sound right to you?

A. That sounds correct.

Q. Can you point me to where in the Company's 20 -- revised 2009 -- or, sorry, 2009 IRP the descriptive summary required by that provision in the rules appears?

A. (By Mr. Edge) The results of that analysis appear on page E-5 and E-6, which is a projection of the magnitude of savings that are anticipated from our programs.

Q. So it's Appendix E, is that right? E-5 and 6. So you're -- are you referring to the -- to the tables?

A. Yes. I refer to that as the results of the analysis.

Q. Okay. So are -- is that -- is it your testimony that that is the descriptive summary of the analysis that is required by Rule R8-60(i)(6)?

A. No. I meant to refer to it more as the results of that analysis.

Q. Okay. So is that -- is that -- does that descriptive summary appear anywhere in your IRP? And take as long as you like to look through it.

A. I think we've identified the programs as well as we've identified that we've not yet rejected any evaluation or energy efficiency offers at this time, and we've also outlined other programs that are currently under consideration. We did not incorporate our market potential analysis in this particular proceeding.

Q. Okay. Now, on page 6 of your rebuttal you state that the ICF study serves as the foundation -- sorry. And I'll let you get there. Actually, I should get there myself too before I start asking questions. Page 6 of your rebuttal.

You state that the ICF study "serves as the foundation for identifying general areas and programs that might warrant consideration in PEC's EE/DSM portfolio"?

A. Yes.

Q. So would you agree that the ICF study is relevant to the assessment of EE and DSM conducted for purposes of the IRP?

A. Yes. And it's obviously something we're considering in the next filing of the 2010 IRP.

Q. Can you point me to the place in the IRP or is

there a place in the IRP where it discusses the ICF potential study?

A. I'm not aware that it does.

Q. Going back to Commission Rule R8-60(i)(6), it also requires the IRP to include certain information about each of the company's existing and planned EE/DSM programs, including available or projected capacity and energy, number of customers or projected customers and other information.

Can you or Mr. Snider point me to where that information is included in the IRP?

A. (By Mr. Edge) We provided a description of each of the programs as well as the participation at the time that we developed the program, so we've outlined a number of participants at the time that we formed this within Appendix E. And that's under -- and -- and -- each of the individual program listings.

Q. The -- I'm sorry, available capacity and energy, number of customers?

A. It's not broken out within Appendix E of the IRP by program or by measure.

Q. It's not. Oh, okay. It's aggregated?

A. That's correct.

Q. Where is -- where does that aggregated information

appear?

A. Again, it's not listed by program or measure. The aggregation would be in the summary tables on page E-5 and E-6.

Q. Summer peak megawatt savings; winter peak megawatt savings by categories of programs, I guess. Is that DSM, EE, DSDR?

A. Yes.

Q. And then on E-6, that table has the energy savings --

A. That's correct.

Q. -- per megawatt hour?

Going back to your rebuttal testimony, on page 5 of your testimony you respond to Mr. Wilson's recommended 15 percent by 2024 savings target?

A. (By Mr. Edge) Yes.

Q. And you state that PEC should not modify its IRP process based on aspirational goals of other states around the country.

Did you understand Mr. Wilson's recommendation to be based in part on actual achievements of other states and utilities rather -- rather than just aspirational goals?

A. No. I didn't see any analysis where he had proven

that states had achieved 15 percent over the period of time in which we're -- we're looking at in our integrated resource plan.

Q. Okay. Now -- and I apologize. I can't remember whether this was -- was -- who discussed this with you in cross-examination on your direct testimony, but you stated that PEC does monitor energy efficiency achievements in other states. Does that -- does that sound correct to you?

A. Yes, it does.

Q. Well, I'll just ask it again.

A. Yeah. In fact, this -- I looked through and analyzed the impacts of such states that have been mentioned here over the past days, and the discussion around the ability of the utilities to achieve that and historically what they've achieved. I -- I reflect in a few of the states and the impacts.

And we also talk about the impacts of EISA and I looked at the State of California. And I see that pursuant to -- or prior to changes in EISA and currently as far as 2008, the State of California has achieved roughly 72 and a half percent of their energy efficiency savings in lighting.

Additionally, Vermont, I was looking at the 2008

report for Vermont who is often lauded as one of the states that are leading energy efficiency. Eighty-one percent of the residential energy efficiency in the State of Vermont has been achieved through compact fluorescent bulbs.

And back to the discussion of net to gross, the -- a program -- and we believe that compact fluorescents still have a short life relative to our portfolio, but rather than using a net to gross of which we presented before this Commission, the State of Vermont assumes that there's 26 percent free drivers. So not only are they accomplishing their net impacts, but they're overinflating their gross impacts by 26 percent to account for free drivers.

The State of New Jersey, 82.6 percent of their savings are coming from lighting. So when we talk about the relevance of the performance of historical utilities that have been lauded as the leaders in the states, I think it's hard to set any kind of precedence about setting forth targets or projections based on that performance with -- recognizing that the fact that the measure that is com -- comprised, 70 to 85 percent of the savings in these respective states no longer exist in two to three years.

Q. So is it your testimony that there -- that there will not be technological advances in lighting, LEDs, for example, or other technologies that will make -- that will -- even if CFL -- I think I understand that you're saying that the CFLs are -- have essentially been banned or will be phased out soon.

A. It's not just CFLs, it's commercial lighting. I mean, it inherently impacts commercial lighting because of the balance requirements of T -- T12s.

What I'm saying -- no, I'm not admitting that there won't be advancements in technology. I'm just saying that inherently you've now gone from 100 percent energy factors and these technologies have been reduced across the board almost 70 -- slashed almost 75 percent, so to sit here and suggest that we as a utility should adopt a -- an energy savings projection within our resource plan based on a utility that has accomplished some 75 to 80 percent through a technology that will no longer be incorporated in our portfolio is very -- very much challenging for us to accept as a utility.

Q. Well, let's go back to -- so instead of relying on aspirational goals or -- or results in other states, you believe the Company should rely on a comprehensive analysis of energy efficiency and DSM in its own service

territory?
A. I think my rebuttal, in fact, says it's a combination of both experience and as well comprehensive analysis, that's correct.
Q. Now, on -- in Appendix E of PEC's 2009 IRP, on page E-1 it states that -- you -- you may or may not need to even refer to the IRP -- but in 2007 PEC announced a commitment to defer a thousand megawatts of generation through DSM and EE?
A. Yes.
Q. Was that commitment based on a comprehensive analysis of available DSM and EE potential?
A. It -- it was based on an analysis that we had at the time at the -- both demand response and energy efficiency, that's correct.
Q. Going back to Mr. Wilson's recommendation of 15 percent of -- 15 percent by 2024. I believe you testified the other day or perhaps in response to a question by Mr. Runkle that the Company's projected achievement -- the Company was projecting to achieve 3 percent by -- 3.8 percent by 2023. Does that sound roughly correct?
A. Yes.
Q. And what would --

A. That was in gigawatt hours, correct.
Q. Sorry. Gigawatt hours. And what was the -- what was the ICF study's finding of the economic achievable potential by that date?
A. Could you list the date again?
Q. 2023.
A. And what -- what quantitative measure would you like to use in 2023?
Q. I was suggesting economic achievable potential, so not maximum achievable or technical potential, but the -- however you all characterize the realistic achievable potential.
A. In the year '14, since this was produced in -- in 2009 and it, again, accounted for the staggering of program development based on program approval at the time, the total number of megawatt hours that were identified as being reasonably achievable were 1,931,120.
Q. So without -- I didn't bring my calculator and math is not my strong suit, how would you -- could you translate that into a potential of -- into a percentage potential?
A. Do you have a calculator? Math should be my strong suit with a couple of engineering degrees, but those are -- those are big numbers. Or if you would

prefer, if we just want to look at the total quantitative impacts, we can look at Table E-6 and compare that to this 2023 number if that helps you any. I'm not sure what point or whether you want the percentage or whether --

Q. Well, I'm trying to -- I guess I'm trying to compare that 3.8 percent by 2023 to the equivalent finding, if there is one, in the ICF study. Since -- since often these studies seem to express potential as a percentage of -- percentage of --

A. And we can do it the -- hold a second. 3.8 percent.

Q. Oh, so it's -- so it is -- it's that same number. Have you reviewed Duke Energy Carolina's IRP?

A. No, I have not.

Q. Were you here for Dr. Stevie's testimony?

A. Yes, I was.

Q. Do you recall that under the high energy efficiency case that Duke analyzed for purposes of its IRP there was a approximately 15 percent decrease in retail sales over the planning horizon?

A. No. No, I don't recall that, miss.

Q. Okay.

A. I think what I recall is in their high place -- or high scenario they essentially took their achievable

potential and at some point or demarcated time they drew a line to say that by some certain date they could reach economic potential if I understand correctly. And that economic potential being roughly 15 percent. That economic potential being Mr. Wilson had had an opportunity to change or make investments in his house, but doesn't decide to make those investments, therefore it becomes achievable potential.

Q. Just one moment, please. So you don't recall Mr. -- you don't recall Dr. Stevie -- Dr. -- he actually corrected me, I believe -- that his testimony on cross-examination that by the year 2029 in their high case energy efficiency resulted in approximately a 13.5 decrease? You don't -- you don't --

A. Again, I'm not familiar with their integrated resource plan.

Q. Okay. Would you -- are there significant differences in -- between PEC's and Duke's service territory such that you would expect the cost-effective energy potential -- energy efficiency potential to be significantly different?

A. I'm not familiar enough with their saturation of natural gas appliances compared to ours, no, I'm not. I've not looked at their saturation.

I wouldn't think the -- you know, certainly we're governed under the same regulatory jurisdiction, so there would obviously be no differences there.

Q. But in terms of climate, customer base, that sort of thing, do you -- do you have any reason to think --

A. I don't believe that the climate would be all that different. Again, I don't know how to represent their customer base and demographics as well as their appliance saturation. It's -- it's -- even within our old service territory, across regions can drastically change between regions, so I'm not familiar with Duke.

Q. I'd like to just shift gears a little bit. In your testimony you state that there are risks and uncertainties associated with energy efficiency resources on page 8 of your rebuttal.

A. Yes.

Q. Would you agree that there are also risks and uncertainties associated with supply-side resources?

A. Yes.

Q. And these include -- do these include things like capital costs, fuel costs and environmental compliance costs?

A. I'm -- I'm not the person responsible for planning and assessing those risks, but I'll let -- I'll defer to

Mr. Snider to answer those.

Q. Mr. Snider, would you agree with that?

A. (By Mr. Snider) Yes. There are certain risks with supply-side resources.

Q. And the Company makes certain base assumptions with regards to those factors when you're developing your IRP, correct?

A. (By Mr. Snider) Yes, we do.

Q. And then you run sensitivities to account for the uncertainties?

A. Yes, we do.

Q. Were you here -- or either of you here when Dr. Stevie discussed the high case -- the fact that they run a high -- they ran a high energy efficiency case sensitivity in developing their IRP?

A. (By Mr. Snider) I didn't hear that they --

A. (By Mr. Edge) No. I think the witness yesterday inferred that they did not run the high case scenario within their integrated resource plan; they only used the baseline case within their resource plan.

A. (By Mr. Snider) As their selected plan, that is what I heard as well, is that they selected the base case. And I believe he stated there was too much risk in the high case for consideration in their resource plan.

Q. I think I may -- I may be not -- I may -- I didn't -- I didn't ask the question very well. Does it sound correct to you that Dr. Stevie explained that Duke did not run the high case as a scenario, they didn't analyze it as an alternate resource scenario, but they did run a sensitivity based on the high energy efficiency case?

A. (By Mr. Snider) I believe Dr. Stevie said they looked at several sensitivities, including carbon sensitivities, and many of which they did not consider for IRP purposes. Or it may have been Witness McMurry.

Q. Did PEC run any sensitivities to account for uncertainties with respect to the level of energy efficiency that the Company could achieve?

A. (By Mr. Snider) No. As I stated in my initial testimony, this being an update year, we did not do full sensitivities.

Q. So --

MS. BOWMAN: Mr. Chairman, I'd like to object to this line of questioning. The -- Mr. Edge has already stated that he's not that familiar with Mr. Stevie's testimony.

MS. THOMPSON: That's -- that's all I have.

COMMISSIONER CULPEPPER: Well, that was a successful objection.

MS. THOMPSON: On that line. That's the end of the line.

Q. I would like to just finally talk about opt out. On page 4 of your rebuttal, Mr. Edge, you state that the opt-out provision in Senate Bill 3 is a factor affecting the potential for utility-run EE/DSM programs. That's page 4 of your rebuttal, lines 5 through 7.

A. Yes.

Q. Does PEC keep track of the opt-out notices it receives?

A. Yes.

Q. And about how many of those have you received to date?

A. I don't have that number. I know that 30 percent of our retail sales have -- customers representing 30 percent of our retail sales have opted out to date. And then I think I the other day shared with you that approximately 40 percent are el -- 40 percent of our total retail sales, not by number of customers, but retail sales, kWh sales are eligible to opt out. So 75 percent of the eligible opt-out retail sales have opted out thus far.

Q. Do you think that PEC has the ability to design energy efficiency and DSM programs for the

commercial/industrial cust -- sector that should be attractive to those customers?

A. Absolutely. I think we have. And, in fact, I think they've been so attractive that several customers who had previously opted out have now opted in and taken advantage of the incentives.

Q. That was actually going to be my next question. You've received a number of opt-in notices from customers that had previously opted out?

A. Sure.

Q. And those include Campbell University, Caterpillar, Harris Teeter and Lowes?

A. I don't have the list before me, but...

Q. Do you expect -- would you expect that there would be significant potential savings associated with those customers?

A. I'd still be hesitant to suggest that it's significant. I think that's the emphasis that we placed on -- as we look at resource planning and incorporating energy efficiency; that was the importance of experience. So as we gain more momentum with the programs and we determine the interest, then we'll refine our estimates of the impacts of energy efficiency as we move forward.

Q. Thank you.

MS. THOMPSON: I think that's all the questions I have.

COMMISSIONER CULPEPPER: All right. Thank you. Cross-examination, Mr. Olson?

CROSS-EXAMINATION BY MR. OLSON:

Q. Good afternoon. I just have a few questions for Mr. Fonvielle. Good afternoon, Mr. Fonvielle.

A. Good afternoon, Mr. Olson.

Q. You sound like you're a little bit under the weather.

A. Yeah.

Q. Am I detecting that correctly?

A. No, I'm fine.

Q. Yeah.

A. Just a little seasonal allergy.

Q. All right. Well, let me start out with a snowball and -- or a softball. You mention in your summary, you say on page 1 and carrying over to page 2 that solar PV generation prices tend to be in a range of $140 per megawatt hour to $270 per megawatt hour with the capacity factors between 15 percent and 20 percent.

What -- what is a capacity factor? And can you tell me how that has any relevance to this?

A. Yeah. My simplistic explanation of capacity

factor -- if I get it wrong, Mr. Snider will help me -- would be the total amount of generation that that facility generates in a year divided by its potential if it operated at peak output in every hour of the year. So for example, a 1-megawatt facility with 100 percent capacity factor would generate 8,760 megawatt hours.

Q. Okay. So just -- what is the relevance?

A. Oh, I'm sorry. That was the second part of your question. I apologize. The relevance there being just since the renewable requirement portion of Senate Bill 3 is based upon energy, either renewable energy generated or the renewable attribute separated from that generation that we can procure from out-of-state or in-state resources -- but it is the calculation. And our requirements are based on the energy requirement -- capacity in meeting the renewable requirement is not a very relevant factor.

So, therefore, you need to know how often that generation, that nameplate generation, if we want to call it capacity, will operate so that you can get to an estimate of the amount of renewable energy it will generate because that's what we need to acquire is energy.

Q. So if I'm understanding you correctly, that you would be looking at a particular facility, the capacity

factor is an important consideration because it may be operating only 15 to 20 percent of the time; is that correct?

A. Yeah. Certainly. If I -- if I procure a 1-megawatt solar PV contract, it is completely different in terms of the amount of renewable energy that I can put into my plan for compliance than a 1-megawatt landfill gas generation. The landfill gas will -- will operate somewhere on the order of magnitude of four times as much.

Q. Does that have any impact on the price? I mean, you seem to be connecting the two. Is it the -- the price of megawatt hour is charged --

A. No, no. It doesn't necessarily have an impact. It does have an impact on the price when you look at that facility. So I'll try to give you an example.

Solar PV generation is predominantly 100 percent capital investment. In order to get to a megawatt hour number, you need to know how many megawatt hours that will generate so that you can spread the depreciation of that capital on the return on that capital to get to the megawatt hour number. In that case it has relevance.

In the case of comparing numbers between different renewable facilities, it's not extremely relevant except to be able to calculate how many megawatt hours I'll get

for that price that I can count on in my compliance plan.
Q. All right. Thank you. On page 2 of your summary you say -- and you also say this in your test -- direct testimony, your rebuttal testimony -- but it says "based upon current cost of solar PV and its limited operational capabilities, we do not anticipate a sizeable increase in the amount of solar PV above what is required by Senate Bill 3." Do you recall that part of your testimony?
A. Yes, I do.
Q. And I'm interpreting that to mean and does it mean that -- is what your saying that but for the requirements of Senate Bill 3 you would not be buying solar PV generated electrical power?
A. I might not state it that strongly because I don't make all the decisions in our company.
(Whereupon, a fire alarm announcement was received.)
COMMISSIONER CULPEPPER: Let's just wait a minute and see what he's got to say.
(Brief pause.)
You may -- you may resume your cross-examination.
A. So if I remember your question correctly, it was but for Senate Bill 3 Progress Energy would be adding no

solar generation.

Q. Well, let me put it this way: I mean, the way I read that statement, which is on page 2, and -- when you say we do not anticipate a sizeable increase in the amount of solar PV above what is required by Senate Bill 3, am I -- is it correct to say that you don't anticipate Progress buying additional solar PV other than what's necessary to meet its requirements in Senate Bill 3?

A. No. I would say that, you know, we at a minimum will buy the amount of solar PV to meet the set-aside.

Actually, if you look in our compliance plan, likely on my Exhibit 7 or the exhibit that looks at the set-aside specifically, which in our compliance plan, you know -- you know, when we filed in '09 and when we filed in '08, we made the determination that we would provide, you know, our best outlook at the time, some expectation beyond the minimum current-year-plus-two just to lay out where we think this goes at that period of time.

But if you'll look in there, we actually are purchasing -- planning to purchase somewhat more than the set-aside to, you know, make sure that, you know, we can meet that set-aside in any given year. And if we exceed it in certain years, we'll bank those renewable energy certificates.

But I think my statement in my rebuttal summary is for integrated resource planning purposes, compliance planning purposes, in Appendix D we don't project at this point in time that, for example, solar will be the most cost-effective way to meet Senate Bill 3 and we'll get ten times as much as a set-aside. So we show somewhat more than what the set-aside requirement is, but not multiples of that.

Q. All right. But you would agree that Senate Bill 3 is a very strong stimulus for the acquisition of solar PV energy?

A. Yeah. Renewable energy in general, certainly. Solar being the first set-aside, absolutely. And I think in my, you know, rebuttal testimony I describe some of the efforts that we've undertaken specifically, not just to acquire the amount of solar that we needed, but to meet some of the other intents of Senate Bill 3, which was to stimulate third-party investment.

All of our contracts for solar PV are investments by others, not by Progress Energy Carolinas at this point in time, and are primarily with local North Carolina companies and we think we've met that piece of it as well.

Q. All right. And I think you're -- just a comment. I think you're doing a great job and certainly consistent

with what I understand the intent and the purposes of the statute are.

A. I was looking to see if my boss was in the room.

Q. But beyond that -- back to the question again. On page 2 you indicate that Progress developed the first standard offer contract to purchase the output from rooftop solar PV installations.

Can you describe that standard offer contract in some detail? Is it still in effect?

A. Yes, I can. We have a -- Progress Energy has a SunSense program which encompasses a number of different solar programs, one of which being the Solar Hot Water Residential Pilot Program that Mr. Edge described.

One of the other ones is a commercial -- what we'll call a rooftop commercial solar PV program where -- we found out early in our efforts that a request, a periodic request for proposals, getting all those proposals in the door, drawing some date and line in the sand to evaluate to -- to be prudent in our purchasing activities and in purchasing the lowest cost on a certain period of time was, you know, cumbersome for some of the smaller PV and was somewhat of a barrier to helping facilitate some market development. So we -- we have made an effort and carved out some of our solar compliance to

streamline that process.

We developed a standard offer contract for rooftop PV installations up to 250 kW in size. We announced an intent to acquire up to 5 megawatts per year through that program. And what the customer developer gets from Progress Energy is a 20-year contract commitment. And unless since I have left my duties that the folks that have taken over for me have revised that program, I don't think they have, the price is 18 cents per kilowatt hour.

Q. Thank you. On page 3 of your summary you say based on the restrictions on the placement of wind turbines in the mountains of North Carolina and based on the price, technological hurtles and permitting difficulties for offshore wind development, no major wind development is anticipated to occur during the IRP planning horizon.

Can you tell me what -- when you refer to the IRP planning horizon, what time period are we talking about there?

A. Consistent with this 2009 Integrated Resource Plan, 2009 through 2025 from a, you know, renewable planning perspective. Of course our requirements for filing a compliance plan were current year plus two, 2009 through '11. However, when I'm speaking about the

planning horizon, it's through -- through the end of this IRP period.

Q. All right. So sitting here today you don't think the -- the so-called technological hurtles or permitting difficulties will be resolved within that timeframe?

A. I have no reason sitting here today to predict any date in which they will. Speaking for offshore wind development, you know, the -- the offshore wind development that we monitor, look into and continue to track that has the early startup in the northeast, off the northeast coast, some of those activities have been going on a decade now without one shovel in the ground or in the ocean floor per se.

If that changes, we certainly would incorporate that. And if it -- and if it becomes a least cost resource or a least cost renewable resource, we at that time certainly would -- would put it in there. However, showing any projections as we're trying to look at what's in front of us today, provide the Commission and others our view of where compliance with REPS goes in North Carolina, based on best available information I don't think it would be prudent to show any block of -- of wind in the plan.

Q. Can you just briefly identify what technological

hurtles you're concerned with or that you see as a barrier?

A. Yeah. I think that there --

(Whereupon, a fire alarm announcement was received.)

COMMISSIONER CULPEPPER: Let's see what he says this time.

(Brief pause.)

You may continue, Mr. Fonvielle. Have you finished your --

A. Yes. And those -- no. I think -- you know, I'll give you one example that comes to mind for us here in North Carolina specifically is that -- and I think this is a statement I can make fairly absolutely, that there have been no offshore wind turbines put in the path of hurricanes to date with the frequency that we may see them and do see them, you know, on the eastern coast of North Carolina.

Speaking with some of the major wind turbine manufacturers such as GE, that -- those issues may be able to be addressed, however, they have not at this point in time, so that's just one example of hurtles that we see.

Q. Okay. Are there others that you can identify besides --

A. Technological hurtles?
Q. Yes.
A. Yeah. I mean, I -- not that might not be able to be overcome. However, I think technological and economically overcoming those technological hurtles go hand in hand.

You know, the cost of transmission, you know, sub C transmission; the cost of then increasing the transmission grid to move the power from off the coast towards the load centers. In the center of the state would be I think, you know, a hurtle that has some, you know, technological and cost implications that -- that are barriers as well.

Q. Because I notice in your rebuttal testimony you -- you were quoting a price for offshore wind in the Rhode Island offshore waters of -- between $332 per megawatt hour and $300 per megawatt hour. And I'm comparing that to the price for land-based wind in West Virginia, which is $82 to 115 per megawatt hour.

The -- I mean, that's a sizeable difference. Is that all attributable to the location or are there other factors that affect that price?
A. Yeah. I -- you know, I'm assuming that the majority of that is technology, locational differences.

You know, I'll couch that, you know, the 85 to 115, you know, was not something delivered here in North Carolina, so, you know, the details of exactly what made that up, but I think those are -- in other studies and things I've seen are representative.

I've also read some reports and such based upon wind projects off the coast of Europe that somewhere in the range of two to two and a half times land-based wind has been quoted.

Q. Okay. Sitting here today, do you have any concerns about meeting the set-aside requirements for swine waste in 2012?

A. Certainly -- certainly some concerns about the state in aggregate, being able to meet the total requirement. And, of course, there's been much discussion about, you know, what does a statewide set-aside mean and we've interpreted that we don't get to point to Duke or the co-ops, that we have to do our share, so we're actively trying to do our pro rata share of that.

I think that there will be some success. I think that's it going to be more difficult than other things that we do because, you know, the technology is not well-developed and deployed. And in a lot of cases you're dealing with some very small entities attempting to do

that. I think that we'll -- we will be successful in bringing projects on. I certainly have concern about whether by 2012 the totality of those projects will equal the set-aside.

Q. Okay. Are you discussing the acquisition of electric power through swine waste with entities/vendors other than Fibrowatt?

A. You mean poultry waste?

Q. Yes.

A. Yeah. I won't disclose who we are discussing with, but I will tell you that we have identified more than one vendor that's proposing poultry waste and we're in conversations with all those that have come forward and we've identified them.

Q. And when you filed your motion for delay and modification of those requirements, you indicated in that motion that there was at that time only one vendor. Can you tell us how many vendors you've identified since that time?

A. Yeah. Not -- not being close over the last couple of months, I don't know if there have been a number of others. I think in those proceedings at least one vendor was party to those proceedings and identified themselves, but yeah, I think that there are, to my knowledge, at

least three that the Company is -- is in discussions with.

Q. And in your summary of the swine waste and the availability of electric power from swine waste, in your summary -- I'm just going to paraphrase. I take it from that that you're saying that -- that you see perhaps a lack of availability, is that correct, or unavailable to meet -- to meet the requirements of 2012 or am I mischaracterizing that?

A. Yeah. I'm not sure if I drew that conclusion. But I'll -- but I will tell you, you know, that my rebuttal testimony provides a summary for the Commission and others of what Progress is aware of in the marketplace today and tries to analyze that data that we've -- we've either received directly or other data sources such as farms that have simply registered through Senate Bill 1465, the Swine Farm Methane Pilot Project, to provide a summary of what we think is available within PEC's territory for swine waste.

Q. Okay. And based on what you think is available, do you have concerns about meeting your obligation under Senate Bill 3 for 2012 with respect to the swine waste set-aside?

A. Yeah, I haven't -- I'm not close enough to the negotiations right now to calculate what we anticipate

receiving from the parties we're -- we have in front of us compared to our 2012.

I will tell you that we're actively pursuing projects with the intent to meet that number. And if we -- I think, if I recall the rules correctly, at a year ahead of time, if we don't see that we're going to meet that number, we'll be in front of the Commission to let -- make them aware of that and ask for adjustment for that.

Q. And isn't there a joint request for proposals issued by electric power suppliers for bids of swine waste?

A. There is.

Q. And when is that request due, do you know?

A. I'm not aware of the specific due date. I know it was -- it was issued fairly recently within the last month or two, I believe, and -- but I'm not sure of the due date that the bids are due.

Q. All right. Thank you.

MR. OLSON: That's all I have.

COMMISSIONER CULPEPPER: Cross-examination, Mr. Styers?

MR. STYERS: Thank you, Commissioners. I do have -- I do have some questions this afternoon.

CROSS-EXAMINATION BY MR. STYERS:

Q. Mr. Fonvielle, you said in your summary that the -- PEC's REPS compliance plan data is actually shown in Appendix D, Exhibit 7 on page D-13. Was that in your summary today?

A. Yes, that's right.

Q. And that's actually the same page that I had enlarged and distributed as CPI Cross-Examination of Progress Exhibit 1; is that correct?

A. Yeah, I believe that's correct.

Q. Now, I'm not going to go back through those numbers. We did that on cross-examination earlier in the record, so that -- but now in your rebuttal testimony you've given some explanation. Some of those numbers I would just like to review quickly.

As I think you said in response to Mr. Olson's question, you said that you did not anticipate a sizeable increase in the amount of solar PV above what is required in Senate Bill 3; is that correct?

A. That's correct.

Q. You currently have 12 gigawatt hour equivalence under contract of solar?

A. As of the timing of the filing of the 2009 Integrated Resource Plan, we had contracts that are estimated to provide 12 gigawatt hours.

Q. And that grows over time, as you've projected, to 10, 23 and 33 in years 2010, 2011 and 2012 of additional gigawatt hours generally?

A. That's correct.

Q. Okay. And I think you testified in response to Mr. Olson's question that -- with regards to wind that you do not believe it's prudent at this time to include wind generation in the REPS compliance plan?

A. That's correct.

Q. And so on the wind line, pretty much you've left that blank at this point going forward?

A. Which -- which wind line --

Q. I'm sorry.

A. -- are you referring to?

Q. Other than the wind REPS that you have banked, going forward you're not anticipating any additional contracted purchases of wind generation?

A. No, that's not accurate. Let me make sure that I clarify. Progress, we have included in contracted purchases those contracts that had been executed by the time we filed our integrated resource plan filing.

The projected resources are simply our best estimate or projection of a plan for compliance going forward, which includes some specific types of resources

because they are set-asides in the legislation. And then an undesignated other renewables bucket, which could be any type of resource, including a set-aside resource to the extent that the set-aside resource by that time was the most cost-effective next resource to add.

So undesignated other renewables could add additional wind RECs from out of state. If all the technological hurtles and economic hurtles are overcome, could add wind generation in the state. It could be hydro resources, biomass resources, any number of resources.

Q. My question specifically pertained to wind. For the reasons that you articulated in response to Mr. Olson's question, Progress does not anticipate at this time -- does not anticipate the availability of in-state wind generation within the current planning horizon; is that correct?

A. That is correct.

Q. Now, with poultry waste, you have projected the amount of generation available to Progress would be approximately 35 to 50 megawatts in your rebuttal testimony?

A. That's correct.

Q. Swine waste, you've anticipated that 5 megawatts to 10 megawatts would be available for swine generation?

A. That's correct.
Q. Okay. Landfill gas, if you combine the current contracted generation and that which is anticipated, you're looking at somewhere between 21 and a half and 36 and a half megawatts of generation from landfill gas; is that correct?
A. It depends upon what you mean by "is that correct." That is equivalent to the megawatts that we have under contract today and proposals that we have in front of us today for specific developments that we're reviewing and negotiating with parties. That doesn't necessarily mean that there might not be additional landfill gas. So that's an estimation based upon what we know specifically in front of us today.
Q. That -- exactly. That's all that you've identified as of today of projects that you're aware of?
A. That's correct.
Q. Now, with regards to wood waste, you state that there's approximately 300 megawatts to 400 megawatts of wood-fired generation that could be developed to serve PEC's load; is that your testimony?
A. That's -- that's our estimate from the amount of wood biomass that could be developed to serve PEC load in our territory.

Q. Some of the other megawatt totals in your -- in your rebuttal testimony talk about the La Capra study and the megawatts available in the entire state, but this 300 to 400 megawatts of wood-fired generation, that's specifically within Progress' territory; is that correct?

A. Yes. What I've laid out in my rebuttal testimony is our -- my estimate of the amount of generation available to serve PEC's load either through looking at the likely amount of generation that would be developed sitting in my territory or making an assumption, which is I think a good one, that since all utilities in the state have renewable requirements under Senate Bill 3, in my compliance planning, it wouldn't be prudent for me to assume that I can beat Duke out for all of theirs, so...

Q. Because Duke will be purchasing RECs and renewable energy as well to meet their requirements?

A. Or generating themselves in some form or fashion.

Q. Mr. Olson asked you some questions about capacity factors. And you testified that for biomass the typical capacity factors can be expected in the range of 70 to 90 percent; is that right?

A. That's correct.

Q. Now, on page 9 of your testimony towards -- the rebuttal testimony near the top, you indicated that the

potential biomass resource could provide an estimated 390 to 510 megawatts over time; the total annual generation capacity would be approximately 2.8 million to 3.8 million megawatt hours, is that your -- is that your rebuttal testimony?

A. You mean page 5 of my rebuttal testimony?

Q. No. Page 9 --

A. Of my rebuttal testimony?

Q. -- of your rebuttal testimony.

A. Oh, I'm sorry. I was look -- I thought you were referring to the paragraph in my summary. You're speaking of the paragraph that starts on line one?

Q. That's correct.

A. And your question again was?

Q. Just wanted to make sure I understood your testimony correctly, that all the potential biomass resources could provide an estimated 390 to 510 megawatts over time, and then down to line 5, the total annual generation capacity -- capability will be approximately 2.8 million to 3.8 million megawatt hours; is that -- is that -- did I read that correctly?

A. Yeah. That's -- that's based upon, you know, currently, you know, our view of biomass generation, availability of wood waste to serve that generation that

either exists today or is developed and simply allowing it to run at its capacity factor, that the technology's capable of somewhere between 70 and 90 percent. And doing simple math, yes, that's my testimony.

Q. And you anticipated my next question. Would you agree subject to check the capacity factor that's necessary to generate about 2.8 million megawatt hours would be about 82 percent roughly? That sound about right subject to check?

A. Yeah, it's somewhere in that range.

Q. And to generate 3.8 million megawatt hours, it would be about 85 percent capacity factor, again, within that 70 to 90 percent range you identified?

A. Well, I would -- I will testify that, yeah, consistent with my testimony, somewhere between 70 and 90 percent, 390 megawatts to 510 megawatts, should generate somewhere between 2.8 and 3.8 million megawatt hours.

Q. The line I left out when I was reading there is -- I want to go back to now. These capacity factors are assuming that all of these resources were dispatched based upon the availability, not their cost; is that correct?

A. That's correct.

Q. Now, what do you mean by "dispatched"?

A. Dispatched being the amount of time that they

actually run that generation.

Q. So if the generation is dispatchable, what does that mean?

A. Well, I would say that that could mean a number of things. The technology around -- most of the technology around biomass, specifically wood biomass, is a technology that is capable of being dispatched to a certain extent. Maybe not the same extent that a combustion turbine would, you know, but closer to a fossil plant, that the -- that the technology is capable of being dispatched.

An example of a non-dispatchable, you know, technology might be solar PV. It's going to generate when the sun shines.

Q. Right. Now, you understand that CPI's facilities in South Port and in Roxboro are dispatchable facilities?

A. I'm somewhat familiar with those facilities and, yes, that they have the capability to be dispatched to a certain extent.

Q. That's in contrast to let's say baseload. And baseload pretty much runs all the time?

A. That's correct.

Q. Okay. Now, typically baseload is the least expensive capacity that a utility has; is that a fair statement?

A. Well, by definition, since we're held to least cost, the facilities that we run all the time should be the most cost-effective.

Q. So they would be the least expensive.

Now, Mr. Snider said in his testimony, rebuttal testimony on page 6 that -- and, Mr. Snider, if you want to turn to that page of your rebuttal -- and I just want to make sure Mr. Fonvielle agrees with Mr. Snider's testimony here -- that "Furthermore" -- and this is on page 6 -- lines 6 and 7 of page 6 -- "Furthermore, must-run resources that run based on a need other than utility economic dispatch can impose a greater cost to the customer by running 'out of economics.'"

Is that your testimony, Mr. Snider?

A. (By Mr. Snider) Yes, it is.

Q. What -- could you just kind of explain what you meant by running out of economics and the effects on -- the cost of running a generation stack out of economics?

A. Without referring to any particular technology, my point was without considering the amount of pure utility control or dispatchability, you have differences in cost per megawatt hour that would make them noncomparable.

So, for example, if for whatever reason we had a resource that cost $70 a megawatt hour, that you must take

per whatever contractual provisions were with that resource and it just ran whenever it ran versus a -- or, I'm sorry, a $65 resource versus a $70 resource that we could dispatch, just because $65 was cheaper per megawatt hour, it might not necessarily be cheaper to the total customers when you consider dispatching.

Q. And that's really what you mean down on line 13 of your testimony when you talk about taking into account the fact that the peaking unit can be turned on and off based upon economic dispatch within the fleet?

A. Correct.

Q. And, again, if you run out of economics, it can result in a higher cost for the consumers, as I think you said?

A. Correct.

Q. Now, Mr. Fonvielle, your estimation of the availability assumes all of the resources were dispatched based upon their availability, not their cost; is that correct, Mr. Fonvielle?

A. Yeah. I mean, I think it's inherent in Senate Bill 3 in the renewable requirements that renewables are going to be added into the generation mix for specific reasons, not because they're the least cost generating resource today. So we have to get a certain amount of

generation renewable megawatt hours. You know, those units will run in order to provide that amount of renewable generation.

Q. Was it your testimony that Progress will or will not take into account the economics of this renewable generation stack in determining how much to run -- to run a renewable facility?

A. I would say it certainly depends upon the resource structure of the contract or even specifically in the future, our own generation. But I would say many renewables we don't have the opportunity necessarily to dispatch such as solar. Some we may have the opportunity to dispatch such as co-firing wood waste or a third-party contract with a biomass facility.

Q. But those renewable resources that are dispatchable, you expect to run them, in part, at least, based upon their economics, wouldn't you?

A. Based upon -- based upon a number of factors. One, based upon what is the least cost way in order to comply with the renewable requirements of Senate Bill 3.

Q. They would also be based upon the economics of that facility with that -- or was that completely not even part of the calculus as to when to run the renewable facilities that was dispatchable?

A. No. I would say -- I mean, I say they're a combination of factors, but first and foremost the renewable facilities, we have to acquire renewable energy to meet the requirements of Senate Bill 3 in the least cost manner. That may include certain scenarios of dispatching those units; however, if you're speaking of dispatch in its traditional sense to meet the load of the company, then I think that's a different question.

Q. So if it -- if -- there is a distinction between resources you have to meet the load and resources that you have to meet renewable energy requirements of Senate Bill 3?

A. If -- if you're asking me if I'm going to dispatch the lowest cost resource, a combination of the conventional generation and renewable generation in every hour in the least cost manner to meet load, Senate Bill 3 changed that. Because if that was the case, no matter how much solar I put under contract, there would be very few hours that it would run in our stacks. So I guess I'm not understanding your point.

Q. No. I'm just making sure. And I want to repeat my question. So there is a distinction between resources that are run to meet Senate Bill 3 REPS requirements and resources that are run to meet the Company's load

requirements?
A. Yes. I would agree with that.
Q. Generally, as a general proposition, setting aside Senate Bill 3, dispatchable capacity is generally a more -- as you said, it's more expensive and baseload is -- is -- is less -- is going to be less expensive in terms of cost and energy capacity?
A. I'm not sure that was exactly my statement. I think you asked if --
Q. No. I --
A. -- typically baseload generation is the least cost, and by definition if we're least cost planning, yes.
Q. And again, just to make sure I understand, again, the -- in your testimony the quantities of available resources in your rebuttal testimony were based upon the availability of those resources and not based upon they're being dispatched according to costs?
A. If you're referring such as to the 2.8 to 3.8 million megawatt hour estimate from biomass resources, yeah, that's based upon, you know, those -- those facilities running under, you know, some must-run type scenario probably with some curtailable hours in there.
Q. To follow up on your answers to Mr. Olson's questions about capacity factors, is it generally true, as

I understand it from your answer, that the lower the capacity factor, the capacity, the greater the capacity is needed to generate a given amount of energy in RECs?

A. Yeah, that would be true.

Q. Now, moving to another topic. And I haven't been to as many of these IRPs as Mr. Kaylor has, so I'm going to ask just some very fundamental questions.

You agree that to generate energy to sell, a renewable facility or any generation facility must have capacity, as I understand the word capacity?

A. I would -- I would not agree with that based upon how I understand capacity.

Q. How would you -- how would you define -- describe capacity?

A. We -- we plan -- and I'll let Mr. Snider step in if needed, but we plan capacity resources those that have firm reliability to meet our peak load. Just because a facility doesn't have a capacity value doesn't mean that it can't run to generate energy. So I wouldn't agree that you always have capacity value in order to generate energy.

Q. But again, is it -- I understand that you may value the capacity differently, but generation facilities have -- have a capacity. Whether they are valued in the

generation stack or not, there's the capacity --

A. No. I would -- I would disagree. I would say that they -- I would -- I would categorize what you're referring to as it having a capacity to having a nameplate rating, for example.

So 1-megawatt solar facility has a nameplate rating of one megawatt. That simply says that if the sun is shining just as bright as it can on the perfect angle hitting those solar panels, that based upon the technology at that point, it can generate one megawatt. At a different point in time when the clouds roll over, it can generate zero megawatts. That doesn't necessarily equate to capacity.

Q. Well, okay. Then let me reword the question differently and perhaps more clearly. When you consider the characteristics of a generation facility, whether it's a windmill or photovoltaic or boiler, you know, one metric is the actual energy that it produces, is it not, when you -- when you would evaluate a facility?

A. Yeah. One attribute of a facility would be its energy generation.

Q. And another attribute would be capacity, the nameplate capacity that it has to generate that energy?

A. Sure.

Q. Okay. And RECs are generated by renewable generation resources, are they not?
A. That's correct.
Q. Okay. And generation from nonrenewable resources, they would not generate RECs?
A. Seems to hold true.
Q. Okay. So it's possible to differentiate generation facilities that provide RECs from generation facilities that don't provide RECs is simply my point.
A. It's impossible -- can you state that again?
Q. It is possible --
A. Right.
Q. -- to differentiate between generation facilities that provide RECs and generation facilities that don't provide RECs.
A. That is correct.
Q. Okay. In your -- in your resource compliance plan, the large exhibit I passed out that you identified as your compliance plan, I think we discussed that there was 477 RECs from undesignated other renewables; is that correct?
A. In my Exhibit 7, I've chosen 2012 at the time that we filed the 2009 Integrated Resource Plan what we were reviewing and working on in front of us through our -- our

bids received at that point in time --

Q. Okay.

A. -- and an expectation that we may add 477 gigawatt hours through one or more technologies in that period of time.

Q. And those facilities to produce those -- to produce those RECs will be renewable facilities?

A. Yes.

Q. And they will all have a nameplate capacity, using that term?

A. They may be -- they may be REC purchases only. The facility that those came from obviously would -- would be generating energy.

Q. REC purchases only, you mentioned that earlier. Again, presumably Duke will be in the market purchasing RECs at the same time?

A. Sure.

Q. Dominion will be in the market purchasing RECs at the same time?

A. I believe that would be true, yes.

Q. All those that have requirements under Senate Bill 3 will also be in the market to purchase those RECs?

A. I would -- I think the -- it's true that all of the investor-owned utilities would absolutely be in the

market of purchasing RECs.

The requirements of the individual municipalities and the co-ops are slightly different. Aside from the set-asides, they can meet a hundred percent of their requirements with demand-side management/energy efficiency resources, I believe. So for those it might be slightly different.

Q. But you're not testifying today that Progress anticipates acquiring 477 RECs or more in 2012 from kind of free-standing contractual rights without purchasing energy in association with RECs?

A. I'm not testifying today that we're going to purchase those in any given period of time or quantity. It's a compliance plan and our expectations at the time that we filed. I would testify today that ahead of our requirements we will purchase sufficient RECs either bundled with energy or not to meet our requirements in every year.

And I think in my rebuttal testimony I state that we're already compliant through 2013 and would need only 200 gigawatt hours additional by 2014, which I think actually Witness Reading corrected my math and shows only 170 gigawatt hour requirement, which on checking his math I would concur with.

Q. You mentioned about Progress having an RFP out requesting proposals for biomass facilities; is that correct?

A. Yes. One was issued in December, I believe.

Q. Okay. And again -- and the reason -- one of the reasons -- and the reason for that RFP was that Progress is seeking to purchase RECs for biomass for your Senate Bill 3 compliance; is that correct?

A. I mean, the purpose of that RFP included a number of considerations when we issued that RFP. But certainly that RFP as well as our existing kind of perpetual RFP that we've had open since '07 and the swine paper -- swine waste RFP and the one that we've issued jointly with the other utilities for swine waste are all targeted at identifying renewable facilities, renewable resources in the state, out of the state, and selecting the most cost-effective resources through those RFPs to meet our requirements in a given period.

Q. It's fair to say that Progress plans to add renewable capacity in order to comply with your Senate Bill 3 requirements; is that correct?

A. No, that wouldn't be correct. We certainly plan to acquire renewable energy or renewable energy certificates. Simply acquiring capacity does not allow me

to meet the needs of Senate Bill 3, if I understood your question correctly.

Q. But you have this RFP out there to seek sources of energy for your Senate Bill 3 compliance require -- requirements?

A. Yes. We have a number of RFPs out at -- or have had a number of RFPs out. I think the ones that are open right now are our open-ended RFP and the joint swine RFP. I think the due dates for the other ones have passed. And we have those out in order to ensure that we can meet the requirements of Senate Bill 3.

Q. Now, Progress did not need Commission approval for those RFPs, did you?

A. No, we did not.

Q. And --

A. I'll correct myself. I'm not sure that we needed approval, but I think that there was some approval sought to issue the joint swine RFP with the other utilities to ensure that we were abiding by any anti-trust issues, but I'll leave that to my attorney to grab.

Q. Other than the swine waste -- and we'll put that aside because that's not really the purpose of my question -- other than that one, Progress has not sought Commission approval or recognition of any RFPs, have you,

to your knowledge?

A. We're not required to and no, I don't believe we sought approval of those.

Q. Okay.

COMMISSIONER CULPEPPER: Mr. Styers, let's hold your next question for a little while. It's 10 minutes till the hour of 3 and so I want to give everybody a break here for 10 minutes, so we're going to take a 10-minute break. We're going to resume these proceedings at 3:00. Stand in recess.

(RECESS - 2:50 P.M. TO 3:00 P.M.)

COMMISSIONER CULPEPPER: All right. Let's come back to order, please, and go back on the record. Mr. Styers, you may resume your cross-examination of the witnesses.

MR. STYERS: Thank you, Commissioner.

Q. We were talking about the RFP, Mr. Fonvielle. And doesn't the RFP state that proposals, quote, "shall clearly state that all of the delivered capacity, energy and RECs are to be derived from wood biomass and reported in the proposal"?

A. You're speaking of the recently issued wood biomass RFP?

Q. Yes.

A. Yeah. I believe that -- I don't have it in front of me, so I can't tell you the specific language, but I do believe it has some language about describing or providing the capacity value, energy, you know, estimates, you know, renewable estimates and pricing around those.

Q. So capacity is part of that RFP?

A. Capacity -- for a 40 to -- I think that RFP was -- was targeted at looking at availability of 40 to 75 megawatts, if my memory doesn't fail me, wood biomass facilities.

Unless there's something that I'm unaware of, traditionally those are circulated fluid bed, stoker-grate type boiler facilities that would have capacity associated with them. So, yeah, capacity in those proposals would likely be one of the attributes that bidders would provide.

Q. You understand that CPI's facilities in Roxboro and South Port are QFs?

A. I'm familiar that the one in South Port I believe still provides steam to ADM. I know that the one in Roxboro used to provide steam to, I think it was Collins & Aikman [phonetic], and under those they were QFs. I know Collins & Aikman closed down. I think I heard testimony around CPI either has recertified or will try to recertify

that as a QF, but I don't know first-hand the status of that.

Q. Let me try it -- try again. Is it your understanding, Mr. Fonvielle, that the two CPI facilities are qualifying facilities?

A. Like I said, it's my understanding for certain that the South Port facility is a qualifying facility. I don't know whether the South -- the Roxboro facility has been recertified as a QF.

Q. If testimony in this docket is that the Roxboro facility is also a qualifying facility, do you have any information to rebut that testimony?

A. No, I do not.

Q. Thank you. And you understand that those facilities generate more than five megawatts of energy?

A. That's correct.

Q. And you understand that, assuming they're qualifying facilities, they're entitled to be paid avoided cost for what they sell to Progress as qualifying facilities?

A. Yes. My general understanding per our cogeneration small power producer, that there's a standard rate for five megawatts and below and then greater than five megawatts or five megawatts and greater, can't

remember specifically, that we would negotiate a rate, avoided cost rate for those facilities.

Q. And that's set forth in the Commission's Order in E-100, Sub 117; is that your understanding?

A. I can't cite the specific E-100, 117, but in general, yeah, our -- our approved CSP tariff has those requirements in it.

Q. And in that tariff in that Commission's Order states that for "QFs of more than five megawatts, when the utility does not have the Commission recognize active solicitation" an option laid out in that Order is to contract with the utility to sell power at negotiated rates. That's your understanding?

A. You know, not -- not being familiar with the specific Commission wording, in general that's my understanding, yes.

Q. And any unresolved issues would be subject to arbitration?

A. I believe that's correct.

Q. Okay. And that's your understanding of what CPI is doing with regards to the purchase of power in these -- some of these facilities?

A. Negotiating a contract with Progress?

MS. BOWMAN: Mr. Chairman, I object. I'm not

sure what the relevance is with this line of questioning.

MR. STYERS: The relevance is that they have asked both on redirect and cross-examination about why CPI had not participated in the RFP and I was just pointing out that that's not the mechanism applicable to these facilities.

COMMISSIONER CULPEPPER: Ask your question again.

MR. STYERS: Okay.

Q. It said that -- you understand that they have a right for negotiated rates and that unresolved issues would be resolved in arbitration, that that's your understanding of how the process is proceeding with regards to the sale of power by CPI to Progress?

A. Yeah. I'm aware. I have not been involved in recent discussions with CPI, its representatives, but I am aware that the Company and CPI have been negotiating for a contract. I don't know the status of whether CPI is going to arbitration or if that's not occurred yet, I'm not sure.

Q. So there's -- so the RFP really has nothing to do with that process?

A. No. I would say that the RFP has a tremendous amount to do with that process because my involvement with

CPI when I was the manager of renewable energy was to be brought in and discuss with CPI's representatives the ability of those facilities to produce renewable energy based upon certainly wood biomass and I think even maybe a portion of the tires that CPI proposes to burn in their facility and to discuss our need for renewable energy certificates.

And, you know, pricing proposed by CPI, the relevance to our wood biomass RFP or any of our RFPs would be that we would evaluate that proposal or those negotiations from a renewables perspective against our other options and identify the least cost way to meet Senate Bill 3.

Q. But Progress has that information through their negotiations as -- that are underway with CPI?

A. Information about the pricing that CPI has proposed?

Q. Pricing and terms and -- yes, all of the above.

A. Yes.

Q. And that's not in the RFP process, that's through the negotiated QF process?

A. That's correct.

Q. Okay. Now, we've discussed earlier that Progress Energy has purchased out-of-state wind RECs that were

relatively inexpensive. And I think Mr. Reading complimented Progress for a wise purchase. You remember that testimony?

A. Yes, I do.

Q. Okay. And as in fact -- wind RECs generally are pretty inexpensive, are they not, Mr. Fonvielle, in-state wind RECs?

A. Yeah. Inexpensive compared to other resources we've seen.

Q. Also, RECs from hydro are also relatively inexpensive, are they not?

A. I guess it depends upon the hydro facility, but yeah, we have purchased some hydro RECs that are cost-effective as well.

Q. And we've also discussed the fact today that -- that -- that the one least cost -- your baseload facilities are you least cost facilities?

A. You're speaking to Progress Energy's baseload facilities?

Q. Yes.

A. Yeah. Progress Energy's baseload facilities by their nature would be the lower cost facilities in our stack.

Q. You were asked towards the end of your rebuttal

testimony and said that -- it was worded negative, so let me make sure I get it right. You were asked whether the proposals from CPI were less expensive than any non-set-aside resources contracted by PEC to date and you said no, they were not. Do you remember that question and answer?

A. Yes, I do.

Q. Okay.

MR. STYERS: And may I approach the witness?

COMMISSIONER CULPEPPER: Yes, sir. Do you have an exhibit?

MR. STYERS: I do. I'm going to mark it CPI Cross-Examination Exhibit 2.

COMMISSIONER CULPEPPER: All right. Let the document be identified as CPI Progress Energy Cross-Examination Exhibit 2.

(Whereupon, CPI Progress Energy Cross-Examination Exhibit No. 2 was marked for identification.)

Q. CPI Cross-Examination Exhibit 2 -- Progress Cross-Examination Exhibit 2 -- are your -- is a page D-7 from the Progress Energy 2009 REPS compliance filing; is that correct?

A. That's correct.

Q. Is it labeled "Exhibit 1: Executed Contract Summary;" is that correct?
A. That's correct.
Q. And it's redacted so it just shows the resource type, load, identification numbers [sic] A through Y; is that right?
A. That's correct.
Q. And basically the -- we talked about wind RECs, which are very -- which are at the very bottom. And those are the out-of-state -- those are the out-of-state wind RECs that Progress purchased. Had the two that are on your Exhibit 7, is that right, the two wind REC contracts at the bottom?
A. You're asking that what's listed as Customer X and Customer Y wind RECs --
Q. That's --
A. -- represent the numbers that are on my Exhibit 7?
Q. Yeah. So those are the out-of-state wind RECs we talked about here in the hearing?
A. Yeah, that's correct.
Q. And then we had the hydro for customers R through W?
A. That's correct.
Q. And then D through Q are all solar; is that

correct?
A. Yeah, that's correct.
Q. Okay. Now, Exhibit [sic] A -- and not looking at Exhibit [sic] C, which is just thermal RECs or REC only, A and B are baseload is the description of the load there, is it not, in the third column?
A. Yeah. Customer A, landfill gas, and Customer B, biomass, are listed as baseload facilities.
Q. And you testified two or three times in the last half hour that dispatchable resources are generally more expensive than baseload resources, are they not?
A. I think I've testified that baseload resources are typically the most cost-effective in our stack, yes.
Q. And dispatchable resources are generally more expensive re -- resources in the baseload as a corollary of that?
A. Sure.
Q. Okay. Now, Progress has banked RECs in the past such as the wind RECs, have they not?
A. We've -- we've banked all RECs that we have under contract generated prior to any requirement to retire them, which would include wind, biomass, solar, solar thermal.
Q. So the RECs you've purchased to date, I mean, you

haven't yet used them under Senate Bill 3 because the requirements haven't kicked in, but you've bought them in anticipation for future requirements, have you not?

A. That is correct.

Q. Okay. Now, we have -- I think everyone's acknowledged that Progress does show in its compliance plan that it has purchased sufficient RECs for compliance through 2013; is that right?

A. That's correct.

Q. But you have not yet purchased sufficient RECs to meet the requirements that would be imposed, I think, in the years following that, as you've discussed yourself in your own testimony, if I'm not mistaken?

A. In my testimony, based upon the document filed September 1, 2009, on the resources under contract as of that date in our energy efficiency, my testimony was that we would need approximately 200 gigawatt hours in 2014. I think Mr. Reading further refined my number to show about 170 gigawatt hours and I would concur that it's around 170 gigawatt hours.

Now, that doesn't take into account contracts that we have entered into since September 1, 2009. And I think based upon the last I've looked, we've entered into an additional I think it's about 11 contracts with renewable

facilities that aren't referenced in here. So that 170 gigawatt hours would be smaller today based upon what we have under contract. I think we still have a smaller gap than that to -- to acquire for 2014.

Q. That's because the RECs you're buying today you are banking and to use in 2014, 2015, 2016, are you not?

A. It's a combination of the RECs that we're purchasing and banking and those facilities generating within that year of compliance as well.

Q. And then Mr. Reading's exhibit shows much larger deficits that have not yet been purchased or accounted for in 2015, 2016, has he not?

A. Yeah, without -- without checking his numbers specifically, yeah. The -- you know, the gap certainly is larger in subsequent years.

Q. The RECs that you're purchasing now can be and are being banked for use in the future; is that a correct statement, Mr. Fonvielle?

A. They can be banked for use in the future consistent with certain rules in the Commission's rule-making.

Q. So just because Progress is showing compliance through 2013 doesn't mean it shouldn't be purchasing RECs at this time to meet its requirements in years beyond

that? You would agree with that, wouldn't you?
A. I wouldn't agree with that completely. I think there are a number of factors as to whether we acquire additional RECs in any given period of time, one being customer cost caps that we have to be cognizant of.

The other would be our expectations with respect to the most cost-effective renewable in any given period of time or expectations about the cost of those renewable resources going down over time, such as, you know, preparing them today at a certain price we could get them potentially cheaper in the future, more competition, et cetera.

So I wouldn't agree in whole with your statement that -- that we should be purchasing today.
Q. But the RECs purchased today can help you meet your requirements down the road in 2015, 2016?
A. Subject to the current banking rules of the Commission which would allow us to bank up to seven years from the date that we acquire, I think is the language in the rule-making, acquire those RECs.
Q. So seven years would be 2018? 2017. Excuse me, 2017.
A. Yeah. I think it's acquire and recover the money is maybe the -- the language. So yeah, if we bought one

today, it would last seven years from today.

MR. STYERS: No further questions.

COMMISSIONER CULPEPPER: Thank you. Mr. Carmichael, do you have any --

MR. CARMICHAEL: No questions.

COMMISSIONER CULPEPPER: All right. Mr. Green?

MR. GREEN: No questions.

COMMISSIONER CULPEPPER: Mr. Gillam?

MR. GILLAM: Yes. At the risk of prolonging this proceeding a few minutes, I do have a few questions.

COMMISSIONER CULPEPPER: You go right ahead, Mr. Gillam.

MR. GILLAM: Primarily for Mr. Fonvielle.

CROSS-EXAMINATION BY MR. GILLAM:

Q. Good afternoon, gentlemen.

A. (By Mr. Snider) Good afternoon.

A. (By Mr. Fonvielle) Good afternoon.

Q. Mr. Fonvielle, there were some questions that were raised concerning least cost planning and from least cost concept. There have been people who have suggested that Senate Bill 3 is an exception to the least cost concept, but as I understand it, that is not the case in that, as a general matter, within each category of renewables you need to purchase the least cost renewables in preference

to higher cost renewables. Would you agree?

A. Yeah, I would agree. I mean, we -- we certainly continue to, just outside of the renewables question, continue to plan to meet our customers' load in a least cost manner.

Second to that, we plan to meet our requirements for renewable resources under Senate Bill 3 in a least cost manner, taking into consideration certain requirements such as the set-asides and then, you know, within those set-asides we -- we attempt to acquire the least cost resource that we can identify within each of those set-asides and then the overall requirement we would reach towards whatever renewable was the next least cost resource, whether it was one of those set-asides or some other renewable resource.

So I would agree with you that we do least cost planning in complying with Senate Bill 3's renewable requirements.

Q. To the extent that you buy higher cost renewables than are -- than the renewables that are available to you, that increases customers' bills, does it not?

A. It would -- certainly in a given period of time it would flow more cost through to the customers and it would take up more of the cost caps, the customer cost cap money

that's available for recovery in Senate Bill 3, yes.

Q. Now, turning to -- I think there was some discussion of the swine waste RFP. And I believe you testified that that RFP has gone out?

A. Yes. We -- there are two swine RFPs, so let me make sure we're clear. We issued one back in June of last year and received several bids and entered into discussions with some of those parties. And then we're working in a collaborative process with the other utilities per direction of the Commission and have issued another swine RFP more recently. I think those bids, someone updated me, are due around tax day of this year, April 15.

Q. Now, I noted that recently an objection was filed to the swine -- to the joint swine waste RFP, but the fact remains that it has gone out, am I correct?

A. Yeah. I'm not familiar with the objection, but the swine waste RFP was issued and we're awaiting proposals to come in by the due date, which I think is April 15, yes.

Q. Okay. Now, in your summary, and I think that's also in your -- in your testimony at some level, but in your summary you address various types of renewables and the -- and the prices that are being paid for them and

also the capacity factors and the amount that's available --

A. Yes, sir.

Q. -- do you not?

And you begin on pages 1 and 2 of your summary with the discussion of solar and you say, do you not, that you don't anticipate a sizeable increase in the amount of solar PV above what's required by Senate Bill 3?

A. That's correct at this time.

Q. And I believe you were questioned about solar thermal, especially solar thermal from hot water heaters. I -- the impression I got from your answers was that you do not expect to be able to obtain any substantial number of -- of RECs from solar thermal in comparison with the total amount of the subset.

A. Yeah. I -- I think that would generally be correct based upon our experience to date. One of which -- one of the reasons why we put together a solar thermal renewable energy credit offer, standard offer, to the marketplace for commercial scale and solar thermal facilities is based upon our review of solar thermal technology, it's cost-effectiveness, and what type of incentive, if folks were interested in solar thermal, would help move that along, we put a standard renewable

offer out there. Calculate it based on the cost to install that and the calculated return for the investor, making sure that they received a reasonable return on their investment, and we put together an offer.

And based upon experience, we have acquired some through that program, but I would categorize -- characterize that we don't have folks knocking our door down for it.

Q. Okay. Now, on pages 2 to 3 you discuss the rates for wind energy?

A. That's correct.

Q. And you say that you don't really expect any significant amount of wind energy during the power peak planning horizon?

A. That's correct.

Q. Then you discuss different -- different types of biomass and you say that approximately 300 to 400 megawatts of wood-fired generation could be developed to serve PEC's load?

A. That's correct.

Q. And I believe you said in response to questions that that is basically not a statewide figure, but it is within your service area or what's accessible to your generating facilities?

A. And that -- that's correct. I think the -- I think the La Capra study looked at available -- currently available wood waste such as waste from sawmills, et cetera, and they also looked at the potential for wood waste residues that aren't currently harvested, such as the thinnings and such from forestry, and calculated somewhere in the neighborhood of about a thousand megawatts statewide if I remember the number correctly.

That three to four hundred is our assumption of what we could acquire based upon those having to be geographically -- geographically dispersed. And understanding that there will be other utilities needing to acquire those resources also.

Q. And then you talk about poultry waste and you say Fibrowatt has announced plans to develop plants totaling 150 megawatts and the amount of generation available to PEC would be 35 megawatts to 50 megawatts.

A. That's correct.

Q. Actually, though, you point out that they are using just 65 percent poultry litter, so the 150 megawatts would amount to about 95 or 100 megawatts of renewables, would it not?

A. Yeah. I think that to be fair to, you know, Fibrowatt, I think that -- that they could potentially use

greater than 65. Pointing that out just shows that if they use 65, it roughly approximates the amount of poultry litter that is available in the entire state per -- per the La Capra study.

Q. I suppose actually the remaining 35 percent of whatever the percentage turns out to be would still be available for the -- for the biomass requirement, would it not?

A. Yeah.

Q. The other requirement that includes biomass?

A. Yeah. It's my understanding that from reading about Fibrowatt and their operation in other states and some of their information that they've published in press releases and such, that they blend some -- some wood waste in with the poultry litter, so that would also count as a renewable energy source, it just would not count towards the poultry set-aside.

Q. Okay. Then you discuss swine waste and you say that La Cap -- well, putting aside La Capra for a moment, you say that -- bear with me just a second. You say that you anticipate 5 to 10 megawatts of available swine generation. That would be at the top of page 5, correct?

A. And based upon, you know, my knowledge of what we've received to date and looking at some other

information, that would be a reasonable assumption at this point in time, 5 to 10 megawatts.

Q. Is that statewide or is that just for PEC or in the case of swine waste are the two one in the same?

A. Yeah, I think that -- I think that that's my expectation of what we might be able to acquire ourselves to support the set-aside. Not the entire state.

A number of swine farms are located in the co-operatives' territory and they have -- and we're working with them as well as Duke and others, expressed an interest in doing their share to support that set-aside. So that 5 to 10 was my representation of what I believe might be available to Progress Energy, but we'll see what the RFP tells us this time, too.

Q. Now, would that -- would that 5 to 10 megawatts when you convert it to megawatt hours or to RECs, would that be enough to satisfy the statewide requirement?

A. No, not the statewide requirement.

Q. I'm trying to think. The statewide requirement will -- for swine will ultimately be 0.2 percent, will it not?

A. Point two percent ultimately I believe is correct. I think it grows to .2 percent. I think it begins at .07 percent. I think it steps up to like .14 and then

ultimately the .2 percent of the statewide.
Q. Okay. Now, looking at 2025 on page D-9 of your compliance plan, you show approximately 46,000 total retail gigawatt hours.
A. You said page D-9?
Q. Yes. Exhibit 3.
A. And which number are you referring to, Mr. Gillam?
Q. NC retail gigawatt hours for 2025 --
A. We're talking --
Q. -- upper right corner of the page.
A. Yes. 46,244 gigawatt hours.
Q. So 0.2 percent of that would be something like 92 gigawatt hours, would it not?
A. That's correct.
Q. Okay. And PEC produces about a quarter of the state's total or would it be more like a third of the state's total?
A. I think that we're north of a quarter and somewhere around maybe 30 percent. I think 29 to 30 percent rings a bell of our renewable -- I mean, our retail generation in the State of North Carolina.
Q. So if it were apportioned equally, which I recognize has not been officially approved to do, but if it were, then your share would be something like 30

gigawatts of 30,000 RECs of the swine waste set-aside?
A. I think that the requirement we show there is .2 percent of our retail load in my chart here --
Q. Oh.
A. -- is what I believe we're showing.
Q. Okay. Okay. Well, in any event, if you -- let's look at the 10 megawatts that you anticipate as being sort of the upper limit of the available swine generation.

What is the estimated capacity factor for swine waste?
A. And that's a difficult question for me to answer because there's no swine waste generation that I'm aware of to date operating. There have been some attempts to generate swine waste in the state. We hear developers that are coming through the door. I would say that there might be a fair estimate that it could run at a fairly significant capacity factor, maybe north of 50 percent, maybe a little bit higher, but that's just my guess today.
Q. Okay. Ten megawatts at a hundred percent capacity factor, that would equate to about 87 gigawatt --
A. Gigawatt hours, that's right.
Q. And so -- okay. And so at a 50 percent that would be 43 or 44?
A. Correct.

Q. Which would fall short of 0.2 percent?
A. It would certainly fall -- those numbers would certainly fall short of ultimately getting to the 2021 requirements. You know, they -- if that did hold true and those came to fruition, would certainly go a long way towards us meeting our earlier requirements, certainly.
Q. Okay. And then you say that all the potential biomass resources could provide an estimated 309 to 510 megawatts over time. And that, I take it, is not statewide, but in your area?
A. That's -- yeah. That's my estimate today based upon swine that we know of, landfill gas generation, wood biomass generation, that we could potentially acquire for our compliance.
Q. So basically your numbers are fairly comparable in that they are for your area rather than statewide?
A. That's correct.
Q. Now, looking at Exhibit 7 on page D-13, your REPS requirement overall, including the set-asides, but primarily the general requirement, you show that, I believe, as roughly 5.7 I guess it would be million RECs?
A. In 2025 at the end of the IRP horizon, yeah, we show 5,717 gigawatt hours or 5.7 million.
Q. Now, from 2021 on you will be able to use -- to

derive 40 percent of your overall requirement from energy efficiency, which has no incremental cost because the -- the costs of that are recovered through a different REC, correct?

A. Yeah. The statute would allow us to use up to 40 percent or to meet up to 40 percent of our requirement through EE.

Q. So taking that out, we get something like 3.4 million? You're welcome to check that on a calculator. This is my rough in-my-head calculation.

A. What was your number?

Q. 3.4 million.

A. You're better than Mr. Edge with math.

Q. And then I believe it's also true that 25 percent of your requirement can be set-asides through out-of-state RECs?

A. That's correct.

Q. And out-of-state wind RECs, at least as it stands now, can be acquired at very low cost?

A. That's correct.

Q. So if you take out a quarter of 5.7 and you subtract that from the 3.4, you're going to get something like 2 million RECs that you have to pay local market value for?

A. Yes, sir.
Q. And your cap for 2025 is listed on -- if I can find it -- it's listed on page D-10, Exhibit 4 -- if I'm not mistaken is $75 million roughly?
A. Yeah. 75.2 in 2025, that's correct.
Q. So if you're going to be within the cap as of 2025, you will need to spend not much more than 37 to $38 per local -- locally generated RECs?
A. That's correct. Our average incremental cost per REC hitting the customer cost caps would need to be somewhere in the 37, $38 range.
Q. And I don't suppose anybody knows what avoided costs will be in 2025, but on page D-11, it looks like that currently you're upwards of somewhere in the general range of $60 per megawatt hour?
A. That's correct. Our 15-year number is $61.11 per megawatt hour.
Q. So if you were to add that to $37, then in order to avoid hitting the cap, you would need to be able to require -- to acquire your typical local REC or your -- strike that.

You would need to acquire your typical local megawatt hour of renewables for $97, thereabouts?
A. Yeah. Based upon those numbers, I would agree

with that.

I think to follow up on a question I think Chairman Finley asked me now two days ago, I think, with regards to our expectations of being able to comply with Senate Bill 3 and the cost caps and such, going back and looking at our models, since I had not looked at them in a while being removed from the position, based upon, you know, resources that we've contracted, put under contract to date and based upon current avoided costs with, you know, an assumption that out-of-state RECs, whether they be wind or some other type of out-of-state RECs, but likely wind, continue to be a cost-effective resource, you know, we -- we believe that we could be in compliance through 2021 or beyond potentially.

And if out-of-state REC prices became equivalent to in-state REC -- we might begin to get challenged, depending upon what avoided cost does and what technology cost does for renewables, which is a big unknown -- we should be in good shape through at least 2018.

Q. Okay. But now when you start looking for -- further toward the period post-2021, then if you have to get your average local REC for $37, we could -- we could come under the cap, but we would have to be pretty fortunate; isn't that correct?

A. Yeah, I -- I'm not sure if we would have to be fortunate. I mean, that's -- that's a long ways out and a lot of moving variables.

You know, I think the -- the thing that we're -- that I would say I'm cautiously optimistic and encouraged is based upon where we stand today and what we know, we're not real concerned about staying within the customer cost caps long term. There may be a couple of periods where we have to manage through some tight times because of cost caps and the requirements kind of don't stair-step in, you know, together at certain points, but that I'm encouraged and optimistic that, you know, we can stay in compliance for a good long period of time and that there will be a lot of things that happen before 2025, so...

Q. Well, that is a long way away. And it does appear that you're in very good shape for complying under the cost cap for 2013 and '14, but you have a unique advantage for that earlier period of time, do you not, in that you have all these banked RECs that already -- the cost of which has already been recovered, and so for purposes of compliance they're in effect free?

A. Well, I wouldn't say they're free. They certainly don't affect the cost caps within those years, so yeah, that is absolutely an advantage of taking early action,

which was -- part of our strategy for taking early action was that in addition to meet the true intent of Senate Bill 3, to promote a renewable market in North Carolina, it was prudent for us to start as soon as we had a law that allowed us to buy renewable resources that were more than avoided costs, so -- but yeah, to answer your question, that's -- that is helpful in helping us manage through the early -- early period.

Q. And I certainly don't disagree that it was prudent for you to do that. That's all the questions I have.

A. Thank you.

COMMISSIONER CULPEPPER: Redirect examination, Ms. Bowman?

MS. BOWMAN: Yes, Mr. Chairman. Thank you.

REDIRECT EXAMINATION BY MS. BOWMAN:

Q. Mr. Snider, Mr. Runkle asked a question about the impacts of appliance efficiency improvements and building code changes. Are those changes reflected in PEC's econometric forecasts?

A. Yes. I believe my response was that implicitly they are. Building code standards, efficiency have been getting more stringent throughout time. And to the extent the historic variables in a re-creation analysis reflect that trend, I would anticipate that they would continue.

So they are implicitly in there, yes.

Q. Okay. And -- asking you, Mr. Snider, Ms. Thompson asked about supply-side resource risks. How are those risks associated with supply-side resources different from the risk associated with DSM and EE?

A. Well, both resources have some risks. What needs to be recognized in an integrated resource plan is above all your first and foremost priority is reliability. You're planning to meet the needs of -- reliably of your customers. And I think someone mentioned yesterday a busy signal is not acceptable in this industry.

And so the difference is, you know, from a reliability point of view, if you set aside economics for a moment, supply-side resources have a known quantity. If I plan for a combustion turbine to be built in 2017 that's going to be 190 megawatts, I'm going to get a 190-megawatt gas-fired, supply-side combustion turbine. The demand-side resource of 190 megawatts anticipates a participation rate of a certain amount of customers that have to adopt that -- that program over time irrespective of variables such as recession, utility rate changes, technology changes, et cetera.

So the risk in the pure megawatt contribution between a demand-side resource and a supply-side resource

are drastically different. And so, you know, from a resource planning point of view, that's a significant difference in the risk of a demand-side resource versus a supply-side resource.

Q. Thank you.

Mr. Fonvielle, yesterday afternoon CPI had an exhibit which I believe was CPI's Redirect Exhibit No. 1. Do you have that with you?

A. Is that Mr. Reading's spreadsheet that he put together?

Q. Yes. Yes, it is.

A. Looks like such.

Q. And this afternoon Mr. Styers asked you a question about how many RECs we have received since the time that we filed our integrated resource plan. And you mentioned that since that time we had received several more bids.

Could you explain the bids, the number of bids and how many RECs that might account for?

A. Yeah. Since -- since the time of filing the 2009 IRP and renewables compliance plan, we've received somewhere in the vicinity of 54 or 55 new proposals through our various RFP efforts.

I think I mentioned earlier that we signed since that time 11 new contracts that will go into effect. And,

you know, I -- we're -- we're aware today through the RFP efforts of operational facilities, either contracts we've executed and facilities that will come online or facilities that are operational today, somewhere in the neighborhood of 600,000 megawatt hours, 600,000 RECs that are available to us that we're evaluating.

And within the next, I'll say, 12 to 18 months, based on expected development times for some technologies we're looking at, an additional half a million, 500,000, RECs that we feel comfortable we could acquire now.

Having said that, we won't acquire all of those because they're not all the most cost-effective. So we'll layer in the ones within that bucket that are the most cost-effective. It makes sense for us to make that decision today.

Q. And Mr. Styers also talked some about the pending arbitration between PEC and CPI USA. And that arbitration is not about RECs, it's about getting PEC to purchase capacity from CPI USA; is that correct?

A. I believe that's correct. I believe that the nature of that is the -- the negotiation around what is the proper, you know, negotiated avoided cost rate is the nature of that proceeding.

Q. And yesterday in Dr. Reading's testimony he said

that he would agree that RFPs are the most cost-effective means in which to acquire RECs. Would you agree with Dr. Reading's --

A. Yeah. I would agree through our RFP efforts we've certainly been able to get a good understanding of price availability, create competition. And as a result, for example, from the first solar contracts we signed to the -- to some more recent solar contracts we've had prices come down a good bit. So I think RFP is absolutely a prudent -- prudent way.

Q. And would you agree -- I believe Dr. Reading also said that Progress Energy Carolinas shouldn't necessarily buy from CPI, but they should purchase their RECs from the most cost-effective?

A. Yeah. I think that's consistent with -- with our goals and strategy.

MS. BOWMAN: I don't have any further questions.

COMMISSIONER CULPEPPER: Questions by the Commission? Chairman Finley.

EXAMINATION BY CHAIRMAN FINLEY:

Q. Mr. Fonvielle, earlier in your testimony this afternoon in discussing your RFP process you indicated that you had some biomass bids that have come in. And I think you classified those as wood waste biomass bids.

Did I hear you correctly?

A. Yeah. We've recently, and -- and I think it was sometime in early December, I believe, issued a specific RFP to review, you know, biomass and wood biomass with waste biomass bids.

Q. You use wood and then wood waste. And my question is have you been getting bids where the product that generates the electricity is whole trees as opposed to wood waste?

A. I wouldn't have -- I -- I would not have specific knowledge of the source that they're pointing to. Certainly something that we've got to take into consideration -- and I'm vaguely aware of some of the discussion that's happened in certain agencies in the state and with our company and Duke around what the definition of wood waste is.

And, you know, I'm not sure that that's been resolved yet, but will absolutely be a concern and a consideration that whatever we purchased would satisfy that definition as it gets worked out.

Q. Some somebody within Progress Energy looks behind the bids to see what the product is that's generating the electricity?

A. We will -- we will certainly through discussion

and negotiations have them identify their source. I think that that was one of the requirements, I believe, in the RFP. I may be mistaken there. But involved in some of those discussions we have discussed that with suppliers, either the developers of the wood biomass or specifically suppliers that we're familiar with that have engaged in the discussions, not negotiations, but discussions about sources that -- that source of the pulp industry, et cetera.

But I would say that our fundamental protection for ourselves would be a contractual protection that would lay out and say that their source at all times would meet whatever that definition would be. And if they violated that -- and -- and by us or some other entity that is monitoring that -- violated that, I would expect that we would negotiate a termination right with that facility.

Q. I have some vague recollection that at some point the various potential generators depending on wood for the fuel were looking at the same forested areas for their supply wood. Do you look behind the bids to see whether that's the case?

A. Yeah. Certainly. If I -- if I were to add up all of the biomass bids that we've received over the last couple of years or even just look at the ones through this

RFP, we're asking them to point to where they're going to locate; do they have control of that land, things of that nature to vet out who's real and who's not real.

But also you must overlay those geographically onto a map and begin to determine, you know, what's feasible within those bids.

For example, if two folks are going to locate 15 miles away and they're both going to build 50-megawatt biomass facilities, that's likely not a very prudent action to secure both of those because each -- roughly each 50-megawatt biomass facility needs a radius around it somewhere between say 60 to 100 miles -- you get differing opinions -- to have enough wood supply to support that economically.

Q. And my understanding is that another variable and the feasibility of a wood biomass generator would be the transportation cost and getting the wood to the generator, so you can relate that factor too?

A. Yeah. Absolutely. And that's -- you know, that's something that I think in other proceedings or in filings we've discussed around different technologies would be, one, is with the fixed customer cost caps, you know, pass-through volatility to us in terms of the price of the actual delivered fuel. And transportation for wood

biomass is a big piece of that equation, so something that we -- we would look to and attempt to negotiate the best we can some price certainty within those contracts if we could.

Q. Mr. Edge, I think in response to some question you indicated that an energy efficiency program with an incentive to consumers to swap out Energy Star appliances was not cost-effective?

A. Yes, sir. On the residential appliances, the programs that we've evaluated to -- and I characterize it as to swap out, but to incent the purchase of Energy Star appliances is not deemed to be cost-effective on any analysis that we've performed thus far.

Q. Could you elaborate on that a little bit? Why is it in particular that those types of programs are not cost-effective?

A. It's generally due to the very high free ridership that already occurs. So as an example, dishwashers. The vast majority of dishwashers that are available at home improvement stores already meet Energy Star standards, therefore, if you apply a rebate on top of that, you're in essence just incenting an action that was already going to occur.

Q. All right. Your program that you have sought

Commission approval for in Docket No. E-2, Sub 970, which I believe you call your Appliance Recycling Program, you -- I think you referred to that earlier today as a retirement program and you believe that is better than the appliance swap program, right?

A. Yes, sir. That is the goal -- yes. That is the goal and intention is to seek the early retirement of inefficient appliances.

Q. My understanding is that Progress is going through a process and trying to develop and to present to the Commission for approval energy efficiency and demand-side management programs as you determine that they're appropriate and compliant with Senate Bill 3; is that correct?

A. Yes.

Q. And so I think -- would you agree with me that we're still somewhat early in the process and you're giving us your best programs at this stage?

A. Yes. That -- that is -- that is, in fact, correct. We've identified those programs and almost sequentially presented them before the Commission in the manner in which they've been most cost-effective and have the largest identified impacts relative to being able to reduce the energy usage cost-effectively.

Q. So the Appliance Recycling Program you think is probably going to be one of your better energy efficiency programs?

A. It's been determined in every bit of the analysis that we have that it is -- it is, indeed, cost-effective. And we've adopted best practices that have been identified through the planning stages so that we ensure that it is delivered in a cost-effective manner.

Q. And in order to qualify for Senate Bill 3 rider energy efficiency/demand-side management cost recovery, it's got to be a new energy efficiency program, and by that we mean post January 1, 2007, right?

A. That is correct.

Q. And in order to -- for the savings for the energy efficiency program to qualify towards RECs compliance, they've got to be a new energy efficiency or demand-side management program, right?

A. Yes, that's correct.

Q. And I sort of get the impression, and you correct me if I'm wrong, that energy efficiency and demand-side management programs have been around for a number of years and it's perhaps not all that easy to find a new program as opposed to a program that's been around for some time?

A. That they -- the vast majority of portfolios

encompass very similar programs that -- that, in fact, have all throughout, indicated amongst other utilities, that are, in fact -- yeah. So, yes, very much to answer your question.

Q. And to date this Commission has improved -- I guess they've -- we've approved all or most of all the energy efficiency and demand-side programs that Progress has presented to us for Senate Bill 3 compliance?

A. Yes, sir. You've approved all, with one that's currently in consideration, that is correct. And that includes nine programs that have been brought before this Commission.

Q. Okay. And my understanding is that when you apply the cost benefit tests to the Appliance Recycling Program, it actually scored better on those tests than perhaps some of the ones that we've already approved; is that correct?

A. On certain tests, that is correct. On rate impact measure it doesn't fair as nicely as a demand response program simply because you have the lost revenue component, but on a total resource cost basis it is -- it is -- provides a better cost-benefit ratio than some of the other programs that we've presented before the Commission.

Q. And in your cost recovery mechanism that the

Commission has approved, the energy efficiency incentive is higher on a percentage basis for energy efficiency than it is for demand-side management; that's correct, is it not?

A. The -- the incentive that was established was 13 percent of the utility cost test benefit for energy efficiency and only 8 percent for demand response, yes.

Q. So we're really sort of putting a premium on energy efficiency among the other options?

A. That is how we've determined that, that is correct.

Q. Okay. Thanks. That's all I have.

COMMISSIONER CULPEPPER: Other questions by the Commission?

EXAMINATION BY COMMISSIONER CULPEPPER:

Q. Mr. Edge, let me ask you some more about the refrigerator program that has come under advisement by the Commission, and Chairman Finley just asked you a few questions about it.

And you categorize the program is that you say it's not a swap-out program; is that right?

A. It is -- it is not focused and intended to encourage swap out. The primary focus -- we have -- approximately 15 percent of our residential customers have

a secondary refrigerator in either their basement or garage. We have 40 percent of our residential customers that have a stand-alone freezer unit, so the primary focus is to retire those units. And generally they're older units that are less efficient than -- than new standards today, so that -- that is the primary focus.

Q. Okay. Well, let me ask you this: Say I'm a -- say the program does get approved by the Commission as it's been submitted. And I'm a Progress customer. And I decide I want to buy a new refrigerator, so I've bought a new refrigerator and I'm getting ready to take delivery and I find out about your program. I believe it's $50?

A. Yes, sir.

Q. And I call Progress Energy up and I say, I want to take advantage of your refrigerator program. I've just bought myself a new refrigerator and I'm getting ready to get my new refrigerator delivered and I want this old one of mine taken away and I want to get $50 from you. What's Progress' response going to be? Are you going to come out there and get my refrigerator and pay me $50 or not?

A. Absolutely. We're going to come get your refrigerator to ensure that, one, it doesn't end up in your garage.

However, we've taken that into account, that you

might very well have been taken that action as you just described, so, therefore, this program, in fact -- and we've talked a little bit about free ridership -- again has the highest level of free ridership of any program that we've brought before this Commission for that very fact, that several people are -- have already gone with the condition or the intent of replacing that refrigerator. Taking into account that very high free ridership and applying that back to total resource costs still results in the projected cost-effectiveness, which we brought before this Commission thus far.

Q. Okay. So under that factual scenario, I would be considered to be a free rider, is that what you're saying?

A. Well, it -- we wouldn't make that determination when we picked your refrigerator up. It would be made -- the determination, in essence, would be made by the M&V evaluation company.

So they do post-surveys on a sample of customers. And if they -- and that determination with free ridership, in essence, would be what were you planning to do with that refrigerator that you pulled out of your kitchen. And if it was divulged within that survey questions that it was intended to go in the garage, then no, you wouldn't be a free rider because we did exactly what we intended to

do, which was eliminate the possibility of that entering -- entering the secondary market.

If the intent was that you were -- you were already going to replace it and, in essence, it was going to get picked up by a home improvement, although some of those enter secondary markets, but let's say it's a home improvement store that was going to pick it up and retire it, then in that case you would be a free rider.

Q. Okay. Well, again, not being all that familiar with the details of the program as it's been presented, I -- and I understood that there was a high percentage of free ridership that was built into the program. I seem to recall the amount of 55 percent. Am I recalling the figure correctly?

A. It was a net to gross of 55 percent, which would indicate a free ridership of 45 percent.

Q. Okay. So the free ridership is 45 percent?

A. Yes, that's correct.

Q. Well, just based on what you just said, is that percentage already built into the program or are you going to determine the actual percentage when you go to do your measurement and verification with your surveys?

A. That's the percentage that we built in into the assumptions of how the program will perform. And that was

benchmarked against post-evaluation reports of other utilities that have operated in similar programs.

So when we've presented the cost test before this Commission, the cost of the program incorporated the full cost of all participants whether they were free riders or not. The benefits, the avoided cost benefits only included the net benefits, which would deduct the 45 percent. So I hope that I've answered your question, but --

Q. Well, you're doing a good job.

A. I --

Q. Who you're dealing with is the problem.

A. Well, no, sir. I don't -- you're giving me --

Q. I said that.

A. -- a lot of credit, that's for sure.

Q. I said that, you didn't say it. Okay. Well, in other words, then, the percentage then may -- I understand you use that percentage to determine whether it was cost-effective.

A. Yes, sir.

Q. I understand that. But when you go to get compensated later on and when you go, you have your measurements and your verification, are you going to come up maybe with a different percentage of free ridership

based on the survey?

A. Absolutely. That is the -- that's why an M&V is so important. It's to reassess the free ridership and the net to gross; it's to reassess that the -- we take a market inventory of those refrigerators and refreezers [sic] that were removed to actually verify that the presumed gross savings per refrigerator and freezer were reasonably accurate based on the inventory and the age and then we'd reassess cost-effectiveness moving forward.

And if any of those parameters changed that deemed it not cost-effective, soon we -- we -- I assume we would be asked by this Commission or we would come before this Commission and ask to shut the program down or make a modification of the program.

Q. Okay. Well, let me ask you this: Suppose I -- you just heard my factual scenario and I get included in your survey. Somebody -- you know, whoever you hire to do your measurement and verification, they happen to call me up and find out what I did and I told them exactly what I just got through telling you, they would classify me as a free rider if I didn't have a garage?

A. Or a basement or weren't --

Q. Well, I wouldn't --

A. -- intending to put it in a secondary bedroom. But -- but based on your description, it sounds as if you're a free rider, yes.

Q. All right. Okay. I'd be a free rider there.

All right. Now, if I've got a refrigerator and -- if I do have a garage and I've got this refrigerator that's been out in my garage and it ain't been working for like a year and I call you up and I'm real honest about the thing, I said, I understand y'all got this $50 program here to retire old refrigerators. So I've got this refrigerator in my garage that hadn't been working for two years. I'd like for you to come out here and get that refrigerator and carry it away from here and pay me $50. What's Progress going to do then?

A. We wouldn't pick it up. A condition of participation in the program is it has to be operating. So one of the conditions, when the crew is dispatched to your home, is that we have to visibly observe that it's still in working condition and cooling to some capacity as well. So we'll physically plug it in and make a general observation as to its working condition. If it's inoperable, then it's not a -- it's not a participant in the program.

Q. Okay. Let's get back to my earlier example where

I do have a working refrigerator and I just decide I want something better looking or something and Progress has come and gotten my refrigerator. How do you calculate your net loss revenues on that refrigerator?

A. And are you a free rider or a participant? I can't --

Q. Well, I'm a free rider.

A. -- remember at this point.

Q. Well, I'm a free rider.

A. The -- in the assumptions of the program as we've analyzed the cost benefit analysis, there are numerous estimates and databases, including a measures database that we created along with Dominion and Duke that estimates the -- the operating characteristics of the inventoried refrigerators and freezers. So we sometimes refer to that as deemed savings.

So in presenting to this Commission and as we're identifying the net loss margins associated to that, we would only being asking for the -- the lost margins or the lost revenues inherently of -- of net participants. And those are based on the deemed values or the assumptions as which we first presented it before the Commission.

Now, if you'll recall as well, within the settlement that was approved by the Commission, it

requires that any of the net loss margins are subject to true-up based on M&V evaluation. So if, in fact, we presumed -- and again, as Mr. Fonvielle pointed out, I'm not good at math with my -- or alluded to that -- if we presumed in our deemed savings that a average freezer was 1,000 kWh, and on like real rough numbers, and we in essence have embedded that into the recovery requirements of our rider, on post-evaluation if it had turned out, in fact, that it was only 800 kWh, then we were responsible -- we were only allowed to collect 800 kW -- loss margins associated with 800 kWh and we have to account for that in a true-up within our cost recovery.

So we're only entitled to that which is verified. And that's what we would be asked to recover relative to loss margins, that of which is verified under the X-plus [sic] basis.

Q. Okay. All right. Let me continue on. Now, again, the situation I gave you, I'm a free rider because I was going to give up my old refrigerator anyhow, so it wasn't going to go out in my garage or in my basement or anything like that, so I'm determined to be free rider. And if you determine that I'm a free rider, then I'm not going to count toward any kind of --

A. That is --

Q. -- money that Progress Energy is going to get?
A. I'm sorry, ask the question again.
Q. If I end up being a free rider --
A. Right.
Q. -- then does Progress get any kind of recovery at all monetary wise based on my participation and what happened?
A. Not for the margins, both the loss margin component and not for any portion of the incentive, but cost --
Q. But the cost you --
A. -- we could -- we would get recoupment of that. But that, again, is costs that we've already captured and that you can almost think of as an acquisition cost. It's a cost that inherently didn't provide any avoided cost benefit, but it's a cost that's captured.

And within the settlement provisions, it is a cost that we would recover based at the program operating costs, that is correct.

Q. Yeah. And what I'm trying to get around to is to try to get something straight in my head that I couldn't understand earlier this week. And that is under my scenario when you come and you -- you come and you get my refrigerator and you're going to get to recover -- if I

was not a free rider, you would get to recover some net loss revenues and you would calculate the energy that my refrigerator would have used --

A. Yes.

Q. -- and you would get that. But I was concerned about the fact that I've got a replacement refrigerator and it's going to be using energy. And I thought that would be a factor. But what I'm learning from you is that it's not a factor --

A. No.

Q. -- because you've gotten my old refrigerator and if I was a free rider, then it doesn't matter what I replaced it with.

A. That's correct.

Q. Right.

A. We're not claiming any of the savings differential between your old refrigerator and your new refrigerator.

Q. All right. I think I understand it now. Well, I do appreciate it. Now, other questions from the Commission?

(No response.)

Questions based on the Commission's questions from the utilities?

MS. BOWMAN: No. No, sir.

COMMISSIONER CULPEPPER: All right. Public Staff? Yes, sir, Mr. Gillam.

MR. GILLAM: Just a few.

RECROSS EXAMINATION BY MR. GILLAM:

Q. Mr. Fonvielle, going back to Chairman Finley's question about the RFP for the wood generators, is the -- do you know whether the RFP was worded to the effect that we're soliciting bids from generators who will burn wood waste or whether it was worded in terms of we're soliciting bids from generators that burn wood?

A. I don't know the specific language that was in there, so I really can't tell you if it said wood waste or if it was just from wood biomass facilities. You know, it may have been some general term.

In answering Chairman Finley's question, once we got those bids in and we looked at the details of those bids, we certainly would follow up with questions. Some of the questions would certainly go to the fuel supply and what type of fuel supply, where is it coming from and -- and would it meet what we understand to be the definitions.

Q. Well, I certainly understand nobody told you we --

A. Yes.

Q. -- were going to be asking you such detailed --

A. Sure.

Q. -- questions as this. But in the filing that was recently received relating to the use of old tree biomass at a couple of Duke facilities, there was attached -- well, not to the proposal, but to the protest there was attached a report from the Environmental Management Commission that included legal arguments from Duke and from the environmental groups about whether old tree biomass should be considered a renewable resource or not.

And the -- and both sides presented well-argued legal positions. And my question to you, if you know the answer, is those comments of Duke, did PEC join in them?

A. I -- I'm not aware.

Q. Okay. Now, I remember that you had a proposed -- a proposal for a plant which did not come to fruition that would have been wood-fired or wood-waste-fired cogeneration and would have produced thermal RECs. And this was in South Carolina and it was known that the thermal RECs would not be eligible and it went away.

Now, I noticed that in your discussion of the potential -- of the potential kinds of generation and the number of megawatts that could be generated from each that you did not make any reference to cogenerating with wood, wood waste, whatever, and biomass and generating thermal

RECs. Is that because the plant in South Carolina was unique and you would not expect to see any similar plant?

I'm sure that anything could happen, but were you going on the assumption that it would be unlikely that within the forecast period that a similar plant would reappear on the scene in North Carolina?

A. No. And it's a good question. It was simply just to look at a -- an estimate of the amount of wood -- you know, renewable wood waste available and how many megawatts of, you know, wood waste boilers would that support.

In fact, one of our renewable facilities that we have under contract, it is a cogeneration facility, a wood cogeneration facility and we purchased both the -- the RECs that come from the renewable electricity as well as the RECs that are created by the renewable thermal energy from that facility.

To the extent that we have additional facilities that -- that propose a similar arrangement, we would look at that and we would take the totality of the RECs and the incremental costs and, you know, calculate, you know, what's the most cost-effective resource, that one or others. So I would anticipate there could be others that could come up.

MR. GILLAM: That's all the questions I have.

COMMISSIONER CULPEPPER: Additional questions based on questions by the Commission, Mr. Green?

MR. GREEN: No questions.

COMMISSIONER CULPEPPER: Other intervenors?

MR. OLSON: No questions.

MR. STYERS: I'm looking for a new refrigerator.

COMMISSIONER CULPEPPER: All right. Gentlemen, it looks like that concludes your testimony. You may stand down from the witness chair.

(Whereupon, the witnesses were dismissed.)

Mr. Styers, do you want to deal with CPI Progress Energy Cross-Examination Exhibit No. 2 now?

MR. STYERS: Yes, Commissioner Culpepper. I would ask that CPI Cross-Examination Progress Exhibit 2 be admitted into the evidence of the record.

COMMISSIONER CULPEPPER: That motion is allowed. Let the exhibit be received.

(Whereupon, CPI Progress Energy Cross-Examination Exhibit No. 2 was admitted into evidence.)

And in the event there have been other exhibits that have been identified throughout the course of this proceeding that have not been yet been introduced into

evidence, those exhibits are received into evidence.

Is there anything further from the utility side of the room in this proceeding?

MS. BOWMAN: No, sir.

MR. KAYLOR: No, sir.

COMMISSIONER CULPEPPER: Anything further from the intervenors? That would -- Ms. Thompson.

MS. THOMPSON: Mr. Chairman, just a housekeeping matter. In light of PEC's rebuttal stating that the ICF study was not confidential -- it was provided to us on a confidential basis and so we redacted those portions of John Wilson's testimony that discussed the study.

I have -- after conferring with counsel for PEC, I have corrected pages that -- where the redaction has been removed. And I'd be happy just to carry those up to the clerk's office and file them there. I thought it might be -- it might just expedite matters if I could -- if we could get them into the record during this proceeding. Whatever -- however you would --

COMMISSIONER CULPEPPER: I tell you what, Ms. Thompson, at this point in time I'd rather you just file it as a late-filed exhibit. And -- of course furnish copies to everybody and if anybody's got any problems with it, I'm sure they'll let us know.

MS. THOMPSON: Okay. Thank you.

COMMISSIONER CULPEPPER: Anything else before we talk about post-hearing filings?

(No response.)

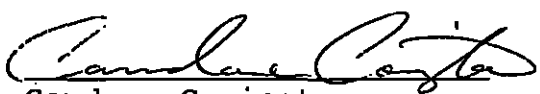
All right. I'm going to order that, as per our custom, that any post-hearing filings, briefs, proposed orders or any other post-hearing filings in that nature would be due to be filed with the Commission on or before 30 days from the date of the mailing of the transcript.

I believe that would conclude these proceedings, so we stand adjourned.

Whereupon, the hearing was adjourned.

CERTIFICATE

The undersigned Court Reporter certifies that this is the transcription of notes taken by her during this proceeding and that the same is true, accurate and correct.



Candace Covington
Court Reporter II