

PLACE: Dobbs Building, Raleigh, North Carolina

DATE: October 23, 2008

DOCKET NO.: E-7, Subs 856

TIME IN SESSION: 1:35 P.M. TO 5:25 P.M.

BEFORE: Commissioner Lorinzo L. Joyner, Presiding
Chairman Edward S. Finley, Jr.
Commissioner Sam J. Ervin, IV
Commissioner Robert V. Owens, Jr.
Commissioner William T. Culpepper, III
Commissioner Howard N. Lee

IN THE MATTER OF:

Application for Approval of
a Solar Photovoltaic Distributed Generation Program
and for Approval of the Proposed Method of Recovery
of Associated Costs

VOLUME 2

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1 P R O C E E D I N G S

2 COMMISSIONER JOYNER: I believe we had
3 just finished with Mr. Smith. Duke, you may call
4 your next witness.

5 MR. FRANKLIN: Janice Hager

6 WHEREUPON, JANICE HAGER WAS CALLED AS A WITNESS,
7 DULY SWORN, AND TESTIFIED AS FOLLOWS:

8 DIRECT EXAMINATION BY MR. FRANKLIN:

- 9 Q. Good afternoon, Ms. Hager.
- 10 A. Good afternoon.
- 11 Q. Please state your full name and business address
12 for the record.
- 13 A. My name is Janice Hager, and my address is 526
14 South Church Street, Charlotte, North Carolina.
- 15 Q. And would you please state your position with Duke
16 Energy?
- 17 A. I am Managing Director of Integrated Resource
18 Planning and Environmental Strategy for Duke Energy
19 Corporation.
- 20 Q. And not to tip your hat one way or the other in
21 this upcoming election, but, I mean, you do a mean
22 Sarah Palin impression; is that correct?
- 23 A. You betcha.
- 24 Q. For all to see. Did you cause to be prefiled in

1 this docket direct testimony consisting of nine
2 pages?

3 A. I did.

4 Q. And do you have any changes to your prefiled direct
5 testimony?

6 A. I do not.

7 Q. If the questions put to you in your direct
8 testimony were asked of you today at the hearing,
9 would your answers be the same?

10 A. They would.

11 MR. FRANKLIN: I'd move to have the
12 witness' prefiled direct testimony entered into the
13 record as if given orally from the stand.

14 COMMISSIONER JOYNER: That is allowed.

15 (THE PREFILED DIRECT TESTIMONY OF JANICE
16 HAGER WILL BE COPIED INTO THE RECORD AS
17 IF GIVEN ORALLY FROM THE WITNESS STAND.)

I. INTRODUCTION AND PURPOSE

Q: PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION WITH DUKE ENERGY CORPORATION.

A: My name is Janice D. Hager, and my business address is 526 South Church Street, Charlotte, North Carolina. I am Managing Director, Integrated Resource Planning and Environmental Strategy for Duke Energy Corporation's ("Duke Energy") operating utilities, including Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q: WHAT ARE YOUR CURRENT JOB RESPONSIBILITIES?

A: I have responsibility for integrated resource planning and environmental compliance planning for Duke Energy Corporation's regulated electric utilities, including Duke Energy Carolinas. In that role, I oversee the long-term resource planning for Duke Energy's Carolinas and Midwest operations, as well as planning for environmental compliance. Duke Energy's long-range resource planning process is conducted separately for each of the operating utilities.

Q: PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL AFFILIATIONS.

A: I am a civil engineer, having received a Bachelor of Science in Engineering from the University of North Carolina at Charlotte. I began my career at Duke Power Company in 1981 and have had a variety of responsibilities across the Company in areas of piping analyses, nuclear station modifications, new generation licensing, rates, and regulatory affairs. I am a registered Professional Engineer in North Carolina and South Carolina.

1 **Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NORTH**
2 **CAROLINA UTILITIES COMMISSION?**

3 A: Yes, I have testified before the North Carolina Utilities Commission
4 ("Commission") on several occasions. I most recently appeared to present
5 testimony in support of Duke Energy Carolinas' Energy Efficiency Plan, Docket
6 No. E-7, Sub 831.

7 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8 A. The purpose of my testimony is to discuss how Duke Energy Carolinas' proposed
9 solar photovoltaic ("PV") distributed generation program (the "Program")
10 conforms to the Company's most recent integrated resource plan ("IRP" or
11 "Annual Plan") as required by Commission Rule R8-61(b).

12 **II. THE PROGRAM CONFORMS TO THE COMPANY'S ANNUAL PLAN**

13 **Q: WHEN WAS DUKE ENERGY CAROLINAS' MOST RECENT ANNUAL**
14 **PLAN FILED IN NORTH CAROLINA?**

15 A: The Company filed the 2007 Annual Plan (the "2007 Annual Plan") with the
16 Commission on November 15, 2007, in Docket No. E-100, Sub 114. In its
17 application for approval of the Program filed on June 6, 2008, the Company
18 requested that the Commission take judicial notice of the 2007 Annual Plan. In
19 presenting the application at the Commission Staff Conference on July 7, 2008,
20 the Public Staff stated that it did not oppose the Commission taking judicial notice
21 of the 2007 Annual Plan. I therefore have not included another copy of the 2007
22 Annual Plan with my testimony. I note that item (2) of Commission Rule
23 R8-61(b) requires information and testimony on the extent to which the proposed

1 construction of the solar generating facilities under the Program conforms to the
2 Company's most recent biennial report. The Company's first biennial report is
3 required to be filed with this Commission by Sept. 1, 2008. In light of this fact, I
4 will discuss instead in my testimony how the application conforms to the 2007
5 Annual Plan.

6 **Q: PLEASE DESCRIBE THE PURPOSE OF THE COMPANY'S ANNUAL**
7 **PLAN?**

8 A: Duke Energy Carolinas' Annual Plan is developed with the objective of meeting
9 customers' needs for a highly reliable energy supply at the lowest reasonable cost.
10 Annually, Duke Energy Carolinas develops a resource plan for meeting
11 customers' energy needs. The resource plan considers a combination of (1)
12 existing power contracts, (2) existing and new generation, and (3) customer
13 options, including demand-side management ("DSM") programs and energy
14 efficiency ("EE") programs.¹ The Annual Plan has traditionally been filed with
15 the Commission and the Public Service Commission of South Carolina on an
16 annual basis. Going forward, as required by the Commission's recently updated
17 rules, a biennial plan will be filed with this Commission in even numbered years,
18 and a short term action plan will be filed annually.

19 **Q. PLEASE PROVIDE AN OVERVIEW OF THE INTEGRATED**
20 **RESOURCE PLANNING PROCESS FOR DUKE ENERGY CAROLINAS'**
21 **2007 ANNUAL PLAN.**

¹ In this testimony, I use the terms DSM to refer to load management programs such as air conditioning load control or industrial interruptible programs and EE to refer to conservation programs.

1 A. Duke Energy Carolinas has been engaged in integrated resource planning since
2 the late 1980s. The annual planning process begins with a 20-year load forecast.
3 The forecast includes projections of summer and winter peak demands, as well as
4 energy use. Information is gathered for Duke Energy Carolinas' existing
5 resources, including Company-owned generation, purchased power agreements,
6 and DSM/EE resources. The information includes items such as capacity rating,
7 heat rate, fuel costs and emission allowance costs. Data is gathered on the costs
8 of additional resource options to meet customer needs. Such data includes lead
9 times for construction, capacity costs, fixed and variable operating and
10 maintenance costs and emissions costs for generation, as well as the costs of
11 demand-side options. Quantitative analyses are conducted to identify
12 combinations of options that will meet customer energy needs (plus reserve
13 margin) while minimizing the costs to customers. The 2007 Annual Plan
14 incorporates a target planning reserve margin of 17%, which Duke Energy
15 Carolinas' experience has shown to be sufficient based on the prevailing
16 expectations of reasonable lead times for the development of new generation,
17 siting of transmission facilities and procurement of purchased capacity. These
18 quantitative analyses enable the Company to identify potential portfolios that can
19 be tested under base assumptions, and for sensitivities and scenarios around those
20 base assumptions.

21 **Q. ARE DECISIONS REGARDING RESOURCE PLANNING MADE ON**
22 **THE BASIS OF QUANTITATIVE ANALYSES ALONE?**

1 A. No. Consistent with the responsibility to meet customer energy needs in a reliable
2 and economic manner, the Company's resource planning approach includes both
3 quantitative analysis and qualitative considerations. Quantitative analysis
4 provides insights on the potential impacts of future risks and uncertainties
5 associated with fuel prices, load growth rates, capital and operating costs, and
6 other variables. Qualitative perspectives such as the importance of fuel diversity,
7 the Company's environmental profile, the stage of technology deployment, and
8 regional economic development are also important factors to consider as long-
9 term decisions are made regarding new resources. In the context of this
10 proceeding, compliance with the North Carolina Renewable Energy and Energy
11 Efficiency Standards ("REPS") is both a quantitative and a qualitative
12 consideration. It is quantitative in that there are quantitative analyses of the cost
13 of meeting the REPS. It is qualitative in that the decision on the resources
14 selected to meet the REPS is not made purely on economics, but with
15 consideration of factors such as portfolio diversity.

16 Company management uses all of these perspectives and analyses to
17 ensure that Duke Energy Carolinas will meet near-term and long-term customer
18 needs, while maintaining flexibility to adjust to evolving economic,
19 environmental, and operating circumstances in the future. The environment for
20 planning the Company's system has never been more dynamic. As a result, the
21 Company believes prudent planning for customer needs requires a plan that is
22 robust under many possible future scenarios, and maintains a number of options

1 to respond to many potential outcomes of major planning uncertainties (e.g.,
2 federal greenhouse gas emission legislation).

3 **Q. DID DUKE ENERGY CAROLINAS CONSIDER RENEWABLE ENERGY**
4 **RESOURCES IN DEVELOPING THE 2007 ANNUAL PLAN?**

5 A. Yes. Because of North Carolina's recent enactment of the REPS, Duke Energy
6 Carolinas modified its consideration of renewable energy resources. In previous
7 annual plans, resources were screened on economics. Therefore, renewable
8 resources were screened out due to their higher cost than traditional supply-side
9 resources. In the 2007 Annual Plan, renewable resources were screened
10 separately to identify the most cost-effective resources among the renewable
11 options. For the Carbon Case with CO2 regulation, the Renewable Portfolio
12 Standard assumptions are based on the REPS requirements. The assumptions for
13 planning purposes are as follows:

14 Overall Requirements/Timing

- 15 • 3% of 2011 load by 2012
- 16 • 6% of 2014 load by 2015
- 17 • 10% of 2017 load by 2018
- 18 • 12.5% of 2020 load by 2021

19 A portion of the REPS requirements was also assumed to be provided by EE and
20 DSM, co-firing biomass in some of Duke Energy Carolinas' existing units, and by
21 purchasing Renewable Energy Certificates (RECs) from out of state, as allowed in
22 the legislation. These requirements were applied to all native loads served by
23 Duke Energy Carolinas (i.e., both retail and wholesale, and regardless of the

1 location of the load) to take into account the potential that a Federal RPS may be
2 imposed that would affect all loads. Accordingly, the 2007 Annual Plan includes
3 160 MWs of renewable energy by 2012 and about 1000 MWs by 2020.

4 **Q: HOW DOES THE PROGRAM CONFORM TO THE COMPANY'S**
5 **ANNUAL PLAN?**

6 **A:** The integrated resource planning process for the 2007 Annual Plan demonstrates
7 that a combination of renewable resources, DSM/EE programs, and additional
8 baseload, intermediate, and peaking generation are required over the next twenty
9 years to reliably meet customer demand and the REPS requirements.

10 Duke Energy Carolinas' 2007 forecast shows average annual growth in
11 summer peak demand of 1.6 percent, winter peak demand growth of 1.4 percent,
12 and the average territorial energy growth rate of 1.4 percent. This equates to an
13 average annual growth rate of approximately 350 MWs per year of capacity and
14 1,500,000 megawatt-hours per year of energy. In addition, we have some existing
15 resources that will no longer be available to meet our customers' needs. Each
16 MW of capacity that is no longer available must be replaced with new capacity,
17 either from supply-side or demand-side resources. Accordingly, the 2007 Annual
18 Plan identifies the need for an additional 990 MWs by 2010 and 10,680 MW of
19 new resources to meet customers' energy needs by 2027. As shown in the
20 Company's 2007 Annual Plan, Duke Energy Carolinas currently has no
21 Company-owned solar PV generation facilities among its generation resources.
22 Implementation of the Program, therefore, would allow the Company to diversify
23 its resources used to reliably meet the energy needs of its customers.

1 Additionally, the Program will allow the Company to partially fulfill its
2 obligations under the REPS imposed by Senate Bill 3.

3 **Q. IN CONCLUSION, ARE THE SOLAR PV GENERATION FACILITIES**
4 **PROPOSED UNDER THE PROGRAM NEEDED AND CONSISTENT**
5 **WITH DUKE ENERGY CAROLINAS' 2007 ANNUAL PLAN?**

6 **A. Yes. The facilities are an important and necessary part of Duke Energy**
7 **Carolinas' plans for meeting customer capacity and energy needs. I believe that**
8 **the Company's application is in the public convenience and necessity, and I ask**
9 **that the Commission approve it.**

10 **Q: DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

11 **A: Yes.**

12

1 Q. (By Mr. Franklin) Ms. Hager, did you prepare a
2 summary of your testimony?

3 A. I did.

4 Q. Will you please read your summary to the
5 Commission?

6 A. Yes.

7 (THE SUMMARY OF THE PREFILED TESTIMONY OF
8 JANICE HAGER WILL BE COPIED INTO THE
9 RECORD AS IF GIVEN ORALLY FROM THE
10 WITNESS STAND.)

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Sub 856
JANICE D. HAGER DIRECT TESTIMONY SUMMARY

1 The purpose of my testimony is to discuss how Duke Energy Carolinas' proposed
2 solar photovoltaic distributed generation program conforms to the Company's most
3 recent integrated resource plan.

4 Duke Energy Carolinas' Annual Plan is developed with the objective of meeting
5 customers' needs for a highly reliable energy supply at the lowest cost. We develop our
6 annual resource plan to meet customers' energy needs by considering a combination of
7 existing power contracts, existing and new generation and customer energy efficiency
8 options, including demand-side management programs and energy efficiency programs.

9 The Company's resource planning approach includes both quantitative analysis
10 and qualitative considerations. Quantitative analysis provides insights on the potential
11 impacts of future risks and uncertainties associated with fuel prices, load growth rates,
12 capital and operating costs, and other variables. Qualitative perspectives such as the
13 importance of fuel diversity, the Company's environmental profile, the stage of
14 technology deployment, and regional economic development are also important factors to
15 consider as long-term decisions are made regarding new resources. In the context of this
16 proceeding, compliance with the North Carolina Renewable Energy and Energy
17 Efficiency Standards is both a quantitative and a qualitative consideration. It is
18 quantitative in that there are quantitative analyses of the cost of meeting the Renewable
19 Energy and Energy Efficiency Portfolio Standard or REPS. It is qualitative in that the
20 decision on the resources selected to meet the REPS is not made purely on economics,
21 but with consideration of factors such as portfolio diversity.

1 Company management uses all of these perspectives and analyses to ensure that
2 Duke Energy Carolinas will meet near-term and long-term customer needs, while
3 maintaining flexibility to adjust to evolving economic, environmental, and operating
4 circumstances in the future. The environment for planning the Company's system has
5 never been more dynamic. We believe prudent planning for customer needs requires a
6 plan that is robust under many possible future scenarios, and maintains a number of
7 options to respond to many potential outcomes of major planning uncertainties.

8 Because of North Carolina's recent enactment of the REPS, Duke Energy
9 Carolinas modified its consideration of renewable energy resources. In previous annual
10 plans, resources were screened on economics. In the 2007 Annual Plan, renewable
11 resources were screened separately to identify the most cost-effective resources among
12 the renewable options.

13 A portion of the REPS requirements was also assumed to be provided by energy
14 efficiency, or EE, and demand-side management, or DSM, co-firing biomass in some of
15 Duke Energy Carolinas' existing units, and by purchasing Renewable Energy Certificates
16 from out of state, as allowed in the legislation. The 2007 Annual Plan includes 160 MWs
17 of renewable energy by 2012 and about 1000 MWs by 2020.

18 The integrated resource planning process for the 2007 Annual Plan demonstrates
19 that a combination of renewable resources, DSM or EE programs, and additional
20 baseload, intermediate, and peaking generation are required over the next twenty years to
21 reliably meet customer demand and the REPS requirements.

22 Duke Energy Carolinas currently has no Company-owned solar PV generation
23 facilities among its generation resources. Implementation of the Program would allow the

- 1 Company to diversify its resources used to reliably meet the energy needs of its customers.
- 2 The Program will allow the Company to partially fulfill its obligations under the REPS
- 3 imposed by Senate Bill 3.

4 The solar PV generation facilities proposed under the Program are an important
5 and necessary part of Duke Energy Carolinas' plans for meeting customer capacity and
6 energy needs, and I ask that the Commission approve the Company's Application.

7

8

1 Q. (By Mr. Franklin) Does this conclude your
2 testimony?

3 A. It does.

4 Q. Thank you.

5 MR. FRANKLIN: Ms. Hager is now available
6 for cross examination.

7 COMMISSIONER JOYNER: Mr. Cavros?

8 MR. CAVROS: Yes.

9 CROSS EXAMINATION BY MR. CAVROS:

10 Q. Good afternoon, Ms. Hager. I was going to ask this
11 question of Ms. McManeus, but I--it might be more
12 appropriate for you.

13 In relation to integrated resource
14 planning on a company-wide level, a couple of quick
15 questions. Would you agree that owning and
16 operating or rather delivering electricity from
17 solar generation is--is dropping in price and has
18 dropped in price?

19 A. I wouldn't have any basis to draw that conclusion.

20 Q. Okay. Perhaps I'll ask that of--would Ms.
21 McManeus, perhaps, be the--

22 A. I don't--I don't know that she would know that. It
23 certainly is not within her job responsibilities.

24 Q. So, then, your testimony is that you don't know if

1 solar energy has--the delivery of solar energy has
2 dropped in price over the last, say, 10 years?

3 A. That is not my testimony.

4 Q. Okay. I'll ask Ms. McManeus. Perhaps she--she can
5 answer that.

6 When Duke performs integrated resource
7 planning on its system as a whole, does--does it
8 run multiple iterations with varying levels of
9 timing of investment in various renewable energy
10 options?

11 A. Let me explain how we do our integrated resource
12 planning process very quickly and see if that
13 answers your question, and let me know if I don't.
14 We do an initial screening process where--with a
15 model that would have the option to choose various
16 forms of any type of resource, traditional
17 resources, renewable, energy efficiency, and it
18 could choose to--to put into that--could choose to
19 optimize the portfolio mix based on whatever
20 assumptions that model has been given. And an
21 outcome of that could be different types of
22 resource mixes. Some that had renewables. Some
23 that didn't. Some that had energy efficiency.
24 Some that didn't. And timing would be one of the

1 variations that you might see in those screening
2 steps.

3 From that we develop a portfolio that we
4 then run through detailed analyses. And within our
5 2007 IRP, we had--by the time we got to the
6 detailed stage, we had determined the portfolio of
7 renewable resources that would be used to meet the
8 REP standard, and all of our different portfolios
9 that we analyzed in that detailed step had the same
10 basic REP portfolio.

11 Q. And in running that model, did you apply a--I
12 understand that certainly you look at cost of
13 bringing certain resources online, but as part of
14 that modeling do you apply a cost risk factor for
15 certain energy choices? I'll give you an example.
16 Conventional wisdom, in any event, is that solar is
17 dropping and has been dropping for the last 10 or
18 15 years and will continue to drop. Conventional
19 wisdom also holds that the construction of
20 conventional generation and the fuel that runs it
21 is skyrocketing. Do you take that into
22 consideration--would you take something like that
23 into consideration, that risk factor, in
24 determining what resources you--you decide on?

1 A. Well, without accepting your conventional wisdom,
2 we do have--we do include an assumed amount of
3 escalation on costs, and we have a choice as to how
4 we do that. We have been recognizing the fact that
5 traditional resources have been increasing in price
6 rapidly and have attempted to capture that within
7 the planning process. We have not been applying as
8 high an escalation rate at this point to our
9 renewable resources.

10 Q. Thank you.

11 MR. CAVROS: No further questions.

12 COMMISSIONER JOYNER: Mr. Chamberlain?

13 MR. CHAMBERLAIN: No questions.

14 COMMISSIONER JOYNER: Mr. Olson?

15 CROSS EXAMINATION BY MR. OLSON:

16 Q. Good afternoon, Ms. Hager. My name is Kurt Olson,
17 and I am representing the North Carolina
18 Sustainable Energy Association. I just have a few
19 quick questions.

20 If you'd look at page 7 of your direct
21 testimony, and lines 9 through 12, it says, "In the
22 2007 annual plan, renewable resources were screened
23 separately to identify the most cost effective
24 resources among the renewable options. For the

1 carbon case with CO2 regulation, the renewable
2 portfolio standard assumptions are based on the
3 REPS requirement." Can you explain what you mean
4 there?

5 A. Within our modeling, we are able to--to place a--a
6 condition within the model which says you must
7 include within the result enough energy to meet the
8 REPS requirement, and then we gave the model
9 options to meet the REPS requirement. We used
10 solar, wind, various forms of biomass, RECs, energy
11 efficiency, and we--so that's the first sentence is
12 we--we screened on economics for meeting the REPS
13 requirement. And the second step is that the level
14 that we assumed was meeting the REPS requirement.

15 Q. Well, can you explain that a little further? I'm
16 not--I'm not quite sure I understand what you mean
17 by the level you assumed.

18 A. We assumed that we had to have, for example, three
19 percent of our energy--we had to have--we had to
20 meet that three percent requirement in 2012 as
21 required by the REPS rider. Now, we assumed that
22 we would be able to fully use our energy efficiency
23 as proposed under Save-a-Watt. We assumed that we
24 would be buying some out-of-state RECs. And then

1 we said, among the other ways we can meet--the
2 other options that we have to meet the rest of
3 that, here are the options we considered. Here are
4 the options the model could choose from.

5 Q. Did you assume at any point of purchasing in-state
6 RECs?

7 A. I think those would really be covered probably
8 indirectly in the sources of the various resources.
9 It was not--it's definitely not excluded at all.
10 It's just not considered explicitly within the
11 model.

12 Q. Is it fair to say, then, that your model came back
13 with a result that assumed the most cost effective
14 way to proceed was through the program that you're
15 now asking the Commission to consider?

16 A. No, that would not be a correct assumption. The
17 2007 plan was completed well in advance of this--of
18 this proposal.

19 Q. Does the 2007 plan contemplate the purchase of in-
20 state RECs at all? I mean, I don't see it in your
21 testimony anywhere?

22 A. Not explicitly.

23 MR. OLSON: I have no further questions.

24 COMMISSIONER JOYNER: Ms. Compton?

1 MS. COMPTON: I have no questions.

2 COMMISSIONER JOYNER: Mr. Green?

3 MR. GREEN: No questions.

4 COMMISSIONER JOYNER: Mr. Gillam?

5 CROSS EXAMINATION BY MR. GILLAM:

6 Q. Good afternoon, Ms. Hager.

7 A. Good afternoon.

8 Q. I have--do not have many questions. If I
9 understood you and Mr. Cavros correctly, he asked
10 you whether it was your testimony that you didn't
11 know whether the price of solar had dropped in the
12 past 10 years, and you said that was not your
13 testimony. Let me ask you more directly. Has the
14 price of solar dropped in the past 10 years?

15 A. I truly don't know.

16 MR. GILLAM: That's all.

17 COMMISSIONER JOYNER: Redirect?

18 MR. FRANKLIN: No.

19 COMMISSIONER JOYNER: Questions from the
20 Commission?

21 (NO RESPONSE.)

22 COMMISSIONER JOYNER: Mr. Franklin, I
23 noticed in Ms. Hager's prefiled testimony that in
24 the application the Company requested that the

1 Commission take judicial notice of its 2007 annual
2 plan, and quite frankly I can't remember whether or
3 not we have explicitly granted that request or not.
4 But if we have not, then the Commission will
5 judicially notice that 2007 plan.

6 (THE COMMISSION WILL TAKE JUDICIAL NOTICE
7 OF DUKE'S 2007 ANNUAL PLAN.)

8 COMMISSIONER JOYNER: With that, Ms.
9 Hager, you are excused.

10 THE WITNESS: Thank you.

11 (WITNESS EXCUSED.)

12 COMMISSIONER JOYNER: Call your next
13 witness.

14 MR. FRANKLIN: Jane McManeus.

15 (WHEREUPON, JANE McMANEUS WAS CALLED AS A WITNESS,
16 DULY SWORN, AND TESTIFIED AS FOLLOWS:)

17 DIRECT EXAMINATION BY MR. FRANKLIN:

18 Q. Good afternoon, Ms. McManeus.

19 A. Good afternoon.

20 Q. Would you please state your name and business
21 address for the record?

22 A. Yes, my name is Jane McManeus. My business address
23 is 526 South Church Street in Charlotte, North
24 Carolina.

1 Q. And after you get your water, would you please
2 state your position with Duke Energy?

3 A. I'm Director of Rates for Duke Energy Carolinas.

4 Q. And did you cause to be prefiled in this docket
5 direct testimony consisting of six pages?

6 A. I did.

7 Q. And do you have any changes to your prefiled direct
8 testimony, other than the updates contained in your
9 rebuttal testimony to reflect revisions to the
10 estimated cost impacts of the program, including
11 the Company's agreement to reduce the size of the
12 program?

13 A. No, I do not.

14 Q. If the questions put to you in your direct
15 testimony were asked of you today at the hearing,
16 would your answers be the same, other than the
17 updates contained in your rebuttal testimony to
18 reflect the Company's agreement to reduce the size
19 of the program?

20 A. Yes, they would.

21 Q. And did you also cause to be prefiled in this
22 docket rebuttal testimony that updates your direct
23 testimony consisting of nine pages?

24 A. Yes.

1 Q. And do you have any changes to your prefiled
2 rebuttal testimony?

3 A. No, I don't.

4 Q. If the questions put to you in your rebuttal
5 testimony were asked of you today at the hearing,
6 would your answers be the same?

7 A. Yes, they would.

8 MR. FRANKLIN: I move to have the witness'
9 prefiled direct testimony and rebuttal testimony
10 introduced into the record as if given orally from
11 the stand.

12 COMMISSIONER JOYNER: That's so ordered.
13 (THE PREFILED DIRECT TESTIMONY AND THE
14 PUBLIC VERSION OF THE PREFILED REBUTTAL
15 TESTIMONY OF JANE McMANEUS WILL BE COPIED
16 INTO THE RECORD AS IF GIVEN ORALLY FROM
17 THE WITNESS STAND. THE PROPRIETARY
18 VERSION OF THE REBUTTAL TESTIMONY HAS
19 BEEN FILED UNDER SEAL.)

1

2

I. INTRODUCTION AND PURPOSE

3 **Q: PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A: My name is Jane L. McManeus, and my business address is 526 South Church
5 Street, Charlotte, North Carolina.

6 **Q: WHAT IS YOUR POSITION WITH DUKE ENERGY CAROLINAS, LLC?**

7 A: I am Director, Rates for Duke Energy Carolinas, LLC ("Duke Energy Carolinas"
8 or the "Company"). Duke Energy Carolinas is a wholly-owned subsidiary of
9 Duke Energy Corporation ("Duke Energy").

10 **Q: WHAT ARE YOUR PRESENT RESPONSIBILITIES AT DUKE ENERGY**
11 **CAROLINAS?**

12 A: I am responsible for managing Duke Energy Carolinas' fuel recovery processes,
13 providing regulatory support for retail and wholesale rates, and providing
14 guidance on compliance with regulatory conditions and codes of conduct.

15 **Q: PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL**
16 **BACKGROUND AND PROFESSIONAL AFFILIATIONS.**

17 A: I graduated from Wake Forest University with a Bachelor of Science in
18 Accountancy and received a Master of Business Administration degree from the
19 McColl Graduate School of Business at Queens University of Charlotte. I am a
20 certified public accountant licensed in the state of North Carolina, and am a
21 member of the Southeastern Electric Exchange Rates and Regulation Section and
22 the EEI Rate and Regulatory Analysts group. I began my career with Duke
23 Energy Carolinas in 1979 as a staff accountant and have held a variety of

1 positions in the finance organizations. From 1994 until 1999, I served in financial
2 planning and analysis positions within the electric transmission area of Duke
3 Power. I was named Director, Asset Accounting for Duke Power in 1999, and
4 appointed to Assistant Controller in 2001. As Assistant Controller, I was
5 responsible for coordinating Duke Power's operational and strategic plans,
6 including development of the annual budget and performing special studies. I
7 joined the Rate Department in 2003 as Director, Rate Design and Analysis.
8 Beginning in April 2006, I became Director, Regulatory Accounting and Filings,
9 leading the regulatory accounting, cost of service, regulatory filings (including
10 fuel and fuel-related costs filings) and revenue analysis functions for Duke
11 Energy Carolinas. I began my current position in the Rate Department in October
12 2006.

13 **Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NORTH**
14 **CAROLINA UTILITIES COMMISSION?**

15 **A:** Yes, I have testified before the North Carolina Utilities Commission (the
16 "Commission") on several occasions. I most recently appeared to present
17 testimony in support of Duke Energy Carolinas' Fuel Filing, Docket No. E-7, Sub
18 847.

19 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

20 **A.** The purpose of my testimony is to (1) provide an overview of Duke Energy
21 Carolinas' proposed cost recovery model for its proposed solar photovoltaic
22 ("PV") distributed generation program (the "Program"); (2) estimate the impact of
23 the program on residential customer bills; and (3) describe how the Program's

1 costs relate to the annual customer class per-account caps specified in Senate Bill
2 3, the statute that established North Carolina's Renewable Energy and Energy
3 Efficiency Portfolio Standard ("REPS").

4 **II. COST RECOVERY AND RATE IMPACT OF PROGRAM**

5 **Q: WHAT METHODOLOGY IS THE COMPANY PROPOSING FOR**
6 **RECOVERY OF THE COST OF THE PROGRAM?**

7 A: As explained in Witness Ruff's testimony, the Program directly responds to the
8 North Carolina General Assembly's mandate to promote the development of
9 renewable energy, and contributes to the "Solar Carve Out" requirement in Senate
10 Bill 3. The Company, therefore, proposes to recover the cost of the Program
11 through the cost recovery mechanism provided for in Senate Bill 3 and the rules
12 the Commission has adopted under that statute (N.C. Gen. Stat. § 62-133.7(h) and
13 Commission Rule R8-67(e)). The Company plans to invest approximately \$100
14 million to install the solar facilities, and between \$700,000 and \$1.3 million
15 annually to operate and maintain the facilities. The Company believes that these
16 expenditures are reasonable and prudent costs that will be incurred in order to
17 comply with the requirements of the REPS (and specifically, N.C. Gen. Stat. § 62-
18 133.7 (b), (d), (e) and (f)), and therefore meet the definition of incremental costs
19 as defined in N.C. Gen. Stat. § 62-133.7(h)(1), to the extent the costs exceed the
20 Company's avoided costs. As such, the Company proposes to recover the excess
21 of the Program costs above its approved levelized avoided costs through the
22 annual rider provided for in Commission Rule R8-67(e)(2). Annual Program
23 costs will be determined on a levelized basis, using a fixed charge rate applied to

1 the investment, and compared to levelized avoided cost to determine the annual
2 incremental costs. The Company's recovery of its incremental costs through this
3 annual rider is capped based on specified per account annual charges for each
4 customer class. The Company expects that the cost of this Program would
5 represent roughly 40% of the annual cost cap in 2010 and 2011, declining to
6 approximately 25% in 2012 and approximately 10% in 2015.

7 **Q: IS THE COMPANY REQUESTING A RATE CHANGE AT THIS TIME?**

8 **A:** No, the Company is not requesting a rate change at this time. Commission Rule
9 R8-67 allows the Company to request a change in rates to recover its prudently
10 incurred REPS compliance costs by requesting approval to charge an annual
11 increment or decrement as a rider to its rates. Such request is to be made in the
12 same time frame as the Company's proposed fuel rate changes under Rule R8-55.
13 The Company would expect to make its request to recover its incremental costs
14 of this Program in early 2009. Given the newness of Senate Bill 3 and its related
15 rules, however, the Company requests that the Commission affirm that its
16 proposed approach is acceptable before the Company moves forward with the
17 Program.

18 **Q: WHAT IS THE EXPECTED IMPACT ON A RESIDENTIAL**
19 **CUSTOMER'S MONTHLY BILL?**

20 **A:** The recovery of the Company's incremental costs of the Program (equal to the
21 levelized annual costs of the Program in excess of the Company's currently
22 approved levelized avoided costs) will result in a REPS rider increment to base
23 rates of approximately \$0.34 per month per residential customer account.

1 Because the Company will incur other costs to comply with the REPS, recovery
2 of the incremental costs of this Program will be only one component of the
3 Company's proposed REPS rider to recover all incremental costs of meeting the
4 REPS requirements, subject to the annual per-account cost caps set forth in N.C.
5 Gen. Stat. § 133.7 (h) (4). The Company expects to implement any proposed
6 REPS rider increment or decrement as a "flat rate" fee or credit due to problems
7 of insufficient cost recovery associated with a rate per kwh methodology. The
8 Company filed comments on this issue in Docket E-2, Sub 930 on July 8, 2008.
9 In its application in this Docket on June 6, 2008, the Company stated the impact
10 to residential customers in the form of a typical residential customer bill of 1,000
11 kwh, which is an historically common approach to expressing customer rate
12 impacts. The Company, however, seeks to correct and make clear by this
13 testimony that it plans to use the "flat rate" approach in order to achieve full
14 recovery of its incremental costs of compliance with the REPS requirements.

15 **Q: WHEN DOES THE COMPANY EXPECT TO MAKE ITS NEXT**
16 **AVOIDED COST FILING?**

17 **A:** The Company expects to update its avoided costs in the upcoming biennial
18 proceeding under Docket E-100, Sub 117.

19 **Q: DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

20 **A:** Yes.
21

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jane L. McManeus, and my business address is 526 South Church Street, Charlotte, North Carolina.

Q. WHAT IS YOUR POSITION WITH DUKE ENERGY CAROLINAS, LLC?

A. I am Director, Rates for Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company"). Duke Energy Carolinas is a wholly-owned subsidiary of Duke Energy Corporation ("Duke Energy").

Q. HAVE YOU PREVIOUSLY FILED DIRECT TESTIMONY IN SUPPORT OF DUKE ENERGY CAROLINAS' APPLICATION IN THIS PROCEEDING?

A. Yes

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address concerns and questions raised by the Public Staff and intervenor testimony filed on October 10, 2008, regarding Duke Energy Carolinas' proposed solar photovoltaic ("PV") distributed generation program (the "Program") described in the Company's Application for Approval of a Solar Photovoltaic Distributed Generation Program and for Approval of Proposed Method of Recovery of Associated Costs (the "Application") and in my direct testimony. Specifically, I will (1) confirm that Duke Energy Carolinas will deduct both avoided capacity and avoided energy costs from its calculation of the incremental costs to be recovered through the REPS rider; (2) update the Company's calculation of the cost to customers, as well as the Program's impact

1 on the REPS customer cost caps; (3) address the Public Staff witnesses Cox and
2 McLawhorn's testimony recommending limitations on the level of Program costs
3 recoverable through the REPS rider; and (4) discuss net metering concerns
4 expressed by the North Carolina Sustainable Energy Association's ("NCSEA")
5 Witness Day and explain the benefits provided to net metering customers from the
6 Company's Small Customer Generator ("SCG") Rider.

7 **II. COST RECOVERY AND RATE IMPACT OF PROGRAM**

8 **Q. HOW DOES DUKE ENERGY CAROLINAS RESPOND TO THE**
9 **POSITIONS OF PUBLIC STAFF WITNESSES COX AND MCLAWHORN**
10 **AND NCSEA WITNESS DAY THAT AVOIDED ENERGY COSTS**
11 **SHOULD BE DEDUCTED FROM ITS CALCULATION OF THE**
12 **INCREMENTAL COSTS TO BE RECOVERED THROUGH THE REPS**
13 **RIDER?**

14 **A.** In the Application, the Company proposed that it be allowed to recover through
15 base rates an amount equivalent to the avoided cost of conventional generation
16 that would be displaced by the Program, and recover the incremental costs of
17 generation produced by solar installation under the Program through the REPS
18 rider. Both the Public Staff and NCSEA assert in their respective testimony that
19 the Company should deduct both avoided capacity and avoided energy costs from
20 its calculation of the incremental costs that it plans to recover through the REPS
21 rider. Duke Energy Carolinas agrees with their assertion and, accordingly, will
22 deduct both avoided capacity and avoided energy costs from its calculation.
23 Senate Bill 3 allows for the recovery of avoided energy costs associated with

1 renewable energy purchases for REPS compliance through the fuel and fuel-
2 related costs clause, which results in inconsistent rate treatment for the avoided
3 cost portion as between purchased renewable generation and utility-owned
4 renewable generation. The Company does not believe that the General Assembly
5 intended to afford less timely cost recovery to utility-owned renewable resources;
6 however, Duke Energy Carolinas has agreed that definition of the term
7 incremental cost in Senate Bill 3 may not be fulfilled unless both avoided capacity
8 and avoided energy costs are deducted in determining incremental costs.

9 **Q. IN LIGHT OF THE COMPANY'S DECISION TO REDUCE THE SIZE –**
10 **IN ACCORDANCE WITH THE PUBLIC STAFF'S RECOMMENDATION**
11 **– OF THE PROGRAM TO 10 MW, WHAT IS THE REVISED EXPECTED**
12 **IMPACT ON A RESIDENTIAL CUSTOMER'S MONTHLY BILL?**

13 **A.** The Company's estimate of the impact on the residential customer's monthly bill
14 as filed in my Direct Testimony was \$0.34 per month. Several revisions to the
15 underlying assumptions of this estimate have changed, resulting in a revised
16 estimate of approximately \$0.08 per month per residential customer account. The
17 revised assumptions include 1) a change in the size of the Program as discussed
18 by Company Witness Smith, 2) inclusion of both avoided capacity costs and
19 avoided energy costs in the definition of avoided costs for determination of
20 incremental costs, and 3) recognition of the tax benefits of the North Carolina
21 property tax exclusion for solar investment and extension of the federal income
22 tax credit to utilities. It should be noted that the costs of the Program will be just
23 one component of the Company's REPS compliance costs which will be

1 recovered through a REPS rider; all of which will be subject to the per account
2 costs caps stated in the REPS statute.

3 **Q. IN ITS TESTIMONY, THE PUBLIC STAFF WITNESSES STATE THAT**
4 **THE COMPANY, FOR PURPOSES OF REPS RIDER COST RECOVERY,**
5 **INTENDS TO REQUEST ANNUAL RECOVERY OF \$8,930,000. IS THIS**
6 **FIGURE AN ACCURATE REPRESENTATION OF THE COMPANY'S**
7 **INTENDED REPS RIDER COST RECOVERY?**

8 A. No. The \$8,930,000 estimate of incremental costs was the basis for the estimated
9 REPS rider increment stated in my Direct Testimony. It does not, however,
10 reflect the Company's agreement with the Public Staff and NCSEA positions that
11 the avoided cost used in determination of the incremental cost should include
12 avoided energy cost as well as avoided capacity cost. In addition, this amount
13 does not reflect the Company's agreement to reduce the size of the Program or tax
14 benefits recently made applicable to the Program. The revised estimate of the
15 annual incremental Program costs expected to be recovered through the REPS
16 rider is \$2.7 million.

17 **Q. THE PUBLIC STAFF WITNESSES ALSO TESTIFY THAT THE**
18 **COMPANY'S UTILITY-WIDE CEILING FOR REPS COMPLIANCE IS**
19 **APPROXIMATELY \$22,500,000 IN 2010 AND WILL INCREASE TO**
20 **APPROXIMATELY \$34,000,000 IN 2012. DOES THE COMPANY AGREE**
21 **WITH THIS ESTIMATE?**

22 A. The Company's utility-wide ceiling for REPS compliance is dependent on the
23 estimated number of customer accounts to which the cost cap amounts by

1 customer class will be applied. At the time it requests approval for a REPS rider,
2 the Company will propose modifications to the number of accounts as reported to
3 the Energy Information Administration in order to mitigate the impacts of the
4 REPS rider on low-usage customers. The Company's most recent estimate of the
5 number of customer accounts, using a modified definition, is approximately \$26
6 million in 2010 and 2011 and increases to \$45 million in 2012. The revised
7 estimate of the annual incremental Program costs expected to be recovered
8 through the REPS rider of \$2.7 million represents approximately 10% of the
9 aggregate cost cap in 2010 and 2011, declining to approximately 6% in 2012 and
10 to 3% in 2015.

11 **Q. WHAT IS THE ESTIMATED PROGRAM COST PER MWH?**

12 A. The estimated Program cost is [BEGIN CONFIDENTIAL] [REDACTED].
13 [END CONFIDENTIAL]. This number is revised from the [BEGIN
14 CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] estimated cost that
15 the Company previously provided to the Public Staff, and reflects refinement of
16 the impact of the federal energy investment tax credit and recognition of the tax
17 benefits of the North Carolina property tax exclusion for solar investment.
18 Additionally, as a public utility the Company is required to follow certain tax
19 normalization requirements with respect to the treatment of the federal energy
20 investment tax credit. Absent these requirements, the cost estimate would be
21 approximately [BEGIN CONFIDENTIAL] [REDACTED]. [END
22 CONFIDENTIAL]

1 Q. HOW DOES THE COMPANY RESPOND TO THE PUBLIC STAFF'S
2 RECOMMENDATION THAT THE COMMISSION LIMIT THE
3 AMOUNT OF PROGRAM COSTS RECOVERABLE THROUGH THE
4 REPS RIDER?

5 A. Duke Energy Carolinas disagrees with the Public Staff's position. In reaching
6 this conclusion, the Public Staff reviewed the solar bids that the Company
7 received in response to its renewable RFP to recommend a limitation on the
8 Company's cost recovery via the REPS rider for this Program. The Public Staff
9 witnesses concluded (at p. 12) that the Project would rank sixth among the eight
10 viable solar bids. This conclusion is based upon the cost estimate of [BEGIN
11 CONFIDENTIAL] [REDACTED]. [END CONFIDENTIAL] As I explained
12 above, the Company has revised this cost estimate to [BEGIN
13 CONFIDENTIAL] [REDACTED]. [END CONFIDENTIAL] The Public Staff
14 witnesses opine that it is the distributed nature of the Program that results in costs
15 that are higher than certain of the solar bids the Company received; however, the
16 impact of the tax normalization requirements I discussed above is the more
17 significant driver of this difference. The Public Staff admitted in its testimony,
18 however, that "[t]he choice of a specific dollar amount for a cap is somewhat
19 subjective," and added that their proposed limit "*seems* appropriate. . . ."
20 (emphasis added)

21 The Company believes that the Public Staff's comparison of bids for
22 purchased power agreements received via the renewable RFP to the Company's
23 proposed Program is misguided. As the Company stated in its Application and as

1 Mr. Smith states in his direct and rebuttal testimony, the goals of the Program are
2 different (and more varied) from the solar purchased power agreement that Duke
3 Energy Carolinas entered into as a result of its RFP. More importantly, the
4 Company would not have undertaken this initiative had the REPS legislation not
5 been enacted. Further, all of the kilowatt hours generated by the Program will go
6 towards Duke Energy Carolinas REPS compliance. The REPS statute places a
7 cost cap on the amount of compliance costs to be recovered from customers
8 through the annual REPS rider and offers no apparent mechanism for recovery of
9 compliance costs that exceed the cap. If the Commission approves the
10 Company's Program Application but a limitation is placed on the amount of
11 incremental REPS compliance costs recoverable through the REPS rider for the
12 approved Program, the Company has concerns that recovery of REPS compliance
13 costs above the imposed limit through its base rates will not honor the intent of
14 the cost cap.

15 **Q. NCSEA WITNESS DAY ASSERTS THAT IMPROVED NET METERING**
16 **RULES ARE NEEDED IN NORTH CAROLINA TO ENCOURAGE THE**
17 **DEVELOPMENT OF CUSTOMER-OWNED SOLAR GENERATION.**
18 **DOES DUKE ENERGY CAROLINAS PROVIDE OPTIONS TO**
19 **CUSTOMERS THAT SUPPORT THEIR INVESTMENT IN SOLAR**
20 **GENERATION?**

21 **A.** Yes. The Company offers several rate options for customers that own generators.
22 In addition to its Net Metering rider, the Company offers a second "net metering"
23 option, Small Customer Generator Rider SCG ("Rider SCG") for residential

1 Q. Ms. McManeus, did you prepare summaries of your
2 testimonies?

3 A. I did.

4 Q. Would you please read those summaries to the
5 Commission or that summary to the Commission.

6 A. Yes.

7 (THE SUMMARY OF THE PREFILED DIRECT AND
8 REBUTTAL TESTIMONY OF JANE McMANEUS WILL
9 BE COPIED INTO THE RECORD AS IF GIVEN
10 ORALLY FROM THE WITNESS STAND.)

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Sub 856
JANE McMANEUS DIRECT AND REBUTTAL TESTIMONY SUMMARY

1 My direct testimony provides an overview of Duke Energy Carolinas' proposed
2 cost recovery model for its proposed solar photovoltaic distributed generation program,
3 estimates the impact of the program on residential customer bills, and estimates how the
4 Program's costs relate to the annual customer class per-account caps specified in Senate
5 Bill 3.

6 My rebuttal testimony confirms that the Company will deduct both avoided
7 capacity and avoided energy costs from its calculation of the incremental costs to be
8 recovered through the Renewable Energy and Energy Efficiency Portfolio Standards, or
9 REPS, rider; updates the Company's calculation of the cost to customers, as well as the
10 Program's impact on the REPS customer cost caps; addresses the Public Staff's
11 recommendation of limitations on the level of Program costs recoverable through the
12 REPS rider; and explains the benefits provided to net metering customers from the
13 Company's Small Customer Generator, or SCG, Rider in response to concerns expressed
14 by NCSEA Witness Day.

15 The Company proposes to recover the cost of the Program through the cost
16 recovery mechanism provided for in Senate Bill 3 and the rules the Commission has
17 adopted under that statute. The Company plans to use the kilowatt hours generated by
18 Program facilities for REPS compliance, and to the extent the costs exceed the
19 Company's avoided costs, proposes to recover the excess of the Program costs above its
20 approved levelized avoided costs through the annual REPS rider. Annual Program costs
21 will be determined on a levelized basis, using a fixed charge rate applied to the

1 investment, and compared to levelized avoided cost to determine the annual incremental
2 costs.

3 The Company is not requesting a rate change at this time. The Company would
4 expect to make its request to recover its incremental costs of this Program in early 2009.
5 Given the newness of Senate Bill 3 and its related rules, however, the Company requests
6 that the Commission affirm that its proposed approach is acceptable before the Company
7 moves forward with the Program.

8 My direct testimony stated that the recovery of the Company's incremental costs
9 of the Program will result in a REPS rider increment to base rates of approximately \$0.34
10 per month per residential customer account. Several of the underlying assumptions of
11 this estimate have changed, however, resulting in a revised estimate of approximately
12 \$0.08 per month per residential customer account. The revised assumptions include a
13 change in the size of the Program, the inclusion of both avoided capacity costs and
14 avoided energy costs in the definition of avoided costs for determination of incremental
15 costs, and the recognition of the tax benefits of the North Carolina property tax exclusion
16 for solar investment and extension of the federal income tax credit to utilities.

17 The Company's recovery of its incremental costs through the REPS rider is
18 capped based on specified per account annual charges for each customer class. Based
19 upon the updated cost cap and Program projections, I estimate that the annual Program
20 costs represent 10% of the REPS cap in 2010 and 2011. This percentage declines to 6%
21 in 2012 and to 3% in 2015.

22 The Public Staff's \$8,930,000 estimate of incremental costs was the basis for the
23 estimated REPS rider increment stated in my Direct Testimony and does not reflect this

1 agreement. In addition, this amount does not reflect the Company's agreement to reduce
2 the size of the Program or tax benefits recently made applicable to the Program. The
3 revised estimate of the annual incremental Program costs expected to be recovered
4 through the REPS rider is \$2.7 million.

5 Duke Energy Carolinas disagrees with the Public Staff's position that the
6 Commission should limit the amount of program costs recoverable through the REPS
7 rider. In reaching this conclusion, the Public Staff reviewed the solar bids that the
8 Company received in response to its renewable RFP to recommend a limitation on the
9 Company's cost recovery via the REPS rider for this Program. The goals of the Program
10 are different from the solar purchased power agreement that Duke Energy Carolinas
11 entered into as a result of its RFP and, therefore, the Public Staff's comparison is
12 inappropriate. More importantly, the Company would not have undertaken this initiative
13 had the REPS legislation not been enacted. Furthermore, all of the kilowatt hours
14 generated by the Program will go towards Duke Energy Carolinas' REPS compliance.
15 The REPS statute offers no apparent mechanism for recovery of compliance costs that
16 exceed the per customer cost cap. If the Commission approves the Company's
17 Application but places a limitation on the amount of incremental REPS compliance costs
18 recoverable through the REPS rider, the Company has concerns that recovery of REPS
19 compliance costs above the imposed limit through its base rates will not honor the intent
20 of the cost cap.

21 Finally, NCSEA Witness Day asserts that improved net metering rules are needed
22 in North Carolina to encourage the development of customer-owned solar generation.
23 Indeed, the Company offers several rate options for customers that own generators. In

1 addition to its Net Metering rider, the Company offers a second “net metering” option,
2 Small Customer Generator Rider SCG. Rider SCG does not require customer-generators
3 to be on a time-of-use demand rate schedule and allows customers to offset their
4 electricity usage using their own generation, thereby receiving a credit when the
5 customer’s generator is offsetting the customer’s load. When the output of the generator
6 exceeds the customer’s load and the excess generation is delivered to the grid, the
7 Company pays the customer the Company’s avoided energy costs based on its approved
8 PP rate schedule. Customers retain all of the RECs associated with their generation. A
9 third option is available for customers who choose to sell all of the output of the
10 generator rather than offset their electricity usage. Under this option, rate schedule PP
11 compensates the customer with both capacity and energy credits for generation delivered
12 to the grid at the Company’s avoided generation cost as approved by the Commission.

13 This concludes the summary of my pre-filed direct and rebuttal testimony.

1 Q. (By Mr. Franklin) Thank you, Ms. McManeus.

2 MR. FRANKLIN: Ms. McManeus is now
3 available for cross examination.

4 COMMISSIONER JOYNER: Questions, Mr.
5 Cavros?

6 CROSS EXAMINATION BY MR. CAVROS:

7 Q. Good afternoon, Ms. McManeus. I just have a few
8 general and specific cost cap questions for you.

9 As you stated in your testimony, you now
10 agree that avoided capacity and energy costs should
11 not be recovered through the REPS rider; is that
12 correct?

13 A. That's correct.

14 Q. And the amount that you--that Duke Energy wants to
15 recover through the REPS rider, there appears to be
16 some disagreement with Staff; is that correct?

17 A. I don't think there's a disagreement any longer
18 with Staff.

19 Q. I was referring to the specific amount. Actually,
20 maybe I could read it to you. On page 14 of--
21 actually, it's of Staff's testimony. They state
22 that the Public Staff believes that only the actual
23 cost of solar energy, as distinguished from costs
24 attributable to Duke's other purposes in proposing

1 the project, should be recoverable through--through
2 the REPS rider. And they go on to say in the
3 second sentence, "Duke had other options it could
4 have pursued to meet its solar set-asides,
5 including a number of acceptable bidders with lower
6 costs than the cost of Duke's project."

7 A. Yes, I'm sorry. I misunderstood your original
8 question. We do have a disagreement in--in--with
9 the Public Staff's recommendation that the amount
10 that we would recover through the REPS rider should
11 be capped--artificially capped.

12 Q. Right. Okay. And how would you respond to the
13 argument that--that if there are less expensive
14 options out there for Duke to pursue, they should
15 pursue them in the interest of cost effective solar
16 energy supply to its customers?

17 A. Well, I think Witness Smith has addressed in a
18 number of ways the reason that we give value to our
19 program having multiple objectives. But what I
20 would say in response to the recommendation to
21 limit the amount that would flow through the REPS
22 rider are a number of things.

23 First of all, we--as I said in my
24 testimony, we would not have undertaken this

1 initiative if we did not have a REP standard to
2 meet. Secondly, the--all of the kilowatt hour
3 output from our program will be used to comply with
4 the standard. And assuming that the Commission
5 grants our application for a CPCN and thereby
6 judges undertaking this program to be prudent, then
7 I think that's sufficient evidence to flow the cost
8 of the program through the mechanism that is
9 allowed for by Senate Bill-3, you know, assuming
10 that we do our job to execute the approved program
11 prudently. There is no mechanism to recover costs
12 that would not be allowed through the REPS rider.
13 And so I believe the rider was the mechanism
14 intended by the legislators to recover these costs.
15 And if we sought to recover them in some other way,
16 we--the Company has concerns that it could be
17 viewed by customers as trying to circumvent the
18 cost caps that were placed into effect through the
19 legislation.

20 Q. Great. If I--if we could move to maybe just a
21 couple of more general cost cap questions. There's
22 been concern raised by Staff that could--that Duke
23 could or might, in their opinion, reach the cost
24 cap prematurely under the original proposal. Your

1 original proposal has since been--been cut in half
2 from 200 million 20 megawatts--200 million and 10
3 megawatts. At the time the program was proposed,
4 you had stated in your initial testimony that
5 roughly 40 percent of the annual REPS cost cap in
6 twenty--it would eat up 40 percent of that cap in
7 2010, 2011, declining to about 25 percent in 2012,
8 and at 10 percent 2015, and that the rate impact
9 would be 34 cents on the average residential
10 customer a month; is that correct?

11 A. That's correct. That's what was in my direct
12 testimony.

13 Q. And under the new proposal, the cost attributed to
14 the REPS rider now from this program will be 10
15 percent in 2010, 2011, 6 percent in 2012, and 3
16 percent in 2015 with a rate impact of 8 cents; is
17 that correct?

18 A. That's correct.

19 Q. The difference between the two rate impacts of
20 approximately 34 cents, I believe it was, and 8
21 cents, that's a reduction of about four times the
22 impacts of the initial proposal; is that correct?

23 A. Yes.

24 Q. And 8 cents per month is roughly a one dollar

1 annual rate impact; is that correct?

2 A. That's correct.

3 Q. And isn't it correct that the REPS statute allows a
4 \$10 annual residential rate impact between 2008 and
5 2011?

6 A. Yes, it is.

7 Q. So, at one dollar, this program is only occupying
8 10 percent of that cap; is that correct?

9 A. That's right.

10 Q. And that leaves 90 percent of the cap free; is that
11 right?

12 A. That's correct.

13 Q. What other solar resources might--might impact the
14 cap between--between now and 2011 besides this
15 program?

16 A. We'll be providing our REPS compliance plan in--
17 shortly. It's due in early November. We'll
18 address how we intend to comply with the REPS
19 requirement. But we have publicly--you know, we've
20 already discussed in this hearing that we have an
21 agreement with SunEdison. And, you know, I--I
22 don't--I don't have any additional information
23 about other options that we may be using.

24 Q. Okay. Let's step back for a second. Under the

1 REPS--the REPS cap, that--that's a maximum--under
2 the REPS price cap, the rate impact, you can't
3 exceed that--that charge; is that correct?

4 A. I don't have a cost recovery mechanism for costs
5 that exceed--I'm sorry. We cannot charge customers
6 through the REPS rider anymore than those cost
7 caps.

8 Q. Okay. For the acquisition of renewable energy, you
9 can in fact go--go beyond that; is that correct?

10 A. (No response.)

11 Q. Let me rephrase that. You have certain targets to
12 meet. If you go beyond those targets, that's
13 certainly allowable?

14 A. I--I think that if you just take--not--in a broader
15 context, of course, it would be allowable. I don't
16 think it would be prudent to do so, because I don't
17 have a mechanism to recover costs beyond that.

18 Q. Okay. Just a couple more questions. In your
19 opinion, the cost of solar electricity is dropping;
20 is that fair to say?

21 A. I really don't have any direct knowledge about the
22 cost of solar--the solar technology. I mean, I've
23 certainly heard what you have said when you asked--

24 Q. Sure.

1 A. --Witness Hager, but I do not have direct knowledge
2 about the--what the cost of solar has been
3 historically.

4 Q. Okay. Do you have an opinion?

5 A. My opinion would be based on the--well, I don't
6 have an opinion about what it has done
7 historically. Our Witness Smith has indicated
8 that, going forward, we're expecting the cost of
9 distributed generation in renewables to decline,
10 and we know the pressure's on traditional. But I
11 don't have any knowledge or opinion about
12 historical costs.

13 Q. Okay. Well, let's just assume, for argument's
14 sake, that the cost of electric solar energy has
15 been--has been and is dropping, and the cost of
16 electric traditional energy has increased and is
17 increasing. And the reason I pose that to you is
18 that is it possible that, under the cap scenario
19 that you posed here, 10 percent--of solar taking 10
20 percent of the cap or any renewable taking 10
21 percent of the cap, and if those renewables are
22 less costly or have less of a--I should say a
23 risk--a risk factor because the fuel is free,
24 because they're dropping in price, as opposed to

1 conventional where the fuel is going up and the
2 price to build a plant is going up, wouldn't it
3 make sense to maximize that cap as much as you can
4 with renewable energy to insulate customers from
5 the rate impacts of conventional energy?

6 A. I don't think I'm the appropriate person to address
7 your question. I'm addressing how the company
8 would recover any costs that were prudently
9 incurred. But, you know, the portfolio--the
10 prudent portfolio, I just don't think I'm the
11 appropriate person to address.

12 Q. Okay. And lastly, in your opinion, what should the
13 cost cap be or what impact should this program have
14 on--on the cost cap in the next years going
15 forward?

16 A. I'm not--

17 Q. Yeah, I'm sorry. Let me rephrase that. Because
18 your initial proposal had the cost cap--the impact
19 of the program taking up 40 percent of the REPS
20 cost recovery rider. Your new program has it at
21 less than 10 percent. You wouldn't have proposed
22 your initial program had you thought that it would
23 somehow put you over the cap, would you?

24 A. I don't think our proposal for the program was at

1 all dependent on the cost cap. You know, as
2 Witness Ruff and Smith have, you know, all
3 testified as to, you know, the objectives of the
4 program, and I don't think they have anything to do
5 with the cost cap.

6 Q. Okay. So, then, it's your testimony that you
7 didn't consider the cost cap when you proposed the
8 first--the first program or the impact of the REPS
9 recovery rider?

10 A. Well, I wouldn't say that we didn't consider what
11 the cost--impact on the cost cap was, because in
12 the--in all the testimony that's been filed, we've
13 provided the numbers, you know, to illustrate that.
14 So I wouldn't say that we didn't consider it. But
15 I'm just simply saying that we proposed the
16 program. We understood the impact on the cost cap,
17 which originally was thought to be 40 percent and
18 concluded that it was still an appropriate
19 proposal. And then having revised the program now,
20 we've simply restated what that impact is.

21 Q. Thank you.

22 MR. CAVROS: No further questions.

23 COMMISSIONER JOYNER: Mr. Chamberlain?

24 MR. CHAMBERLAIN: Yes, I do have a few.

1 CROSS EXAMINATION BY MR. CHAMBERLAIN:

2 Q. Good afternoon. I'm having a bit of a problem
3 understanding exactly what the Company is proposing
4 to recover and how it's proposing to recover those
5 costs, and I hope you can help me with that.

6 As I understand your testimony, the
7 Company is proposing to recover some costs through
8 the REPS rider; is that correct?

9 A. Yes. But first I would note that in this
10 proceeding we are not requesting approval for any
11 particular recovery from customers at this point.
12 We'll be doing so when we file a REPS rider. But
13 in this proceeding, we simply asked the Commission,
14 given the newness of Senate Bill-3, to consider and
15 affirm that the REPS cost recovery mechanism is the
16 appropriate mechanism to seek cost recovery.

17 Q. Okay. But, then, at some point, then, you're
18 going--Duke is going to seek to recover certain
19 costs through the REPS rider; is that correct?

20 A. That's correct.

21 Q. And then, if I understand your testimony, there are
22 other costs that are outside of the REPS rider that
23 will be recovered as well?

24 A. Well, I don't know if I would call them outside of

1 the REPS rider. The REPS rider allows for the
2 recovery of the incremental project costs through
3 the--through the annual rider but defines the
4 incremental cost as being the difference between
5 the total project cost and the Company's avoided
6 cost. So we would simply take the program costs
7 and separate it into two pieces, an amount that
8 represents the Company's avoided cost and then the
9 remaining incremental. And the remaining
10 incremental is to be recovered through the REPS--
11 the annual REPS rider.

12 Now, the--the avoided--I'll say that the
13 Senate Bill-3 legislation lacks clarity on how to
14 recover the cost of owned generation. It is very
15 specific on how one would recover the cost of a
16 renewable PPA by including the avoided cost through
17 the fuel clause and the incremental through the
18 REPS rider, and it's very clear about how a REC is
19 to be recovered solely through the REPS rider as
20 100 percent incremental. But it seems to be less
21 clear on recovering the cost of owned generation.
22 The fact that owned generation is equal in terms of
23 compliance method, it has equal standing with a PPA
24 or a REC, would suggest to me that perhaps it was

1 not the intent of the legislators to--to have owned
2 generation and not be on equal footing. But,
3 nevertheless, it seems to be silent as to the
4 avoided cost piece of the owned generation
5 renewable initiative.

6 Q. Okay. Let me try it this way. The Company is
7 proposing to invest, I believe is the term they
8 used, \$50 million in the current proposal; is that
9 correct?

10 A. That's correct.

11 Q. And how does the Company propose to recover that
12 \$50 million?

13 A. Well, we would--after the \$50 million is invested,
14 we would determine what the annual costs are for
15 that investment. That investment would create
16 annual costs of the need for a return on the
17 investment, depreciation, property taxes. So the
18 annual fixed cost of such an investment would be
19 determined, and you can use a levelized fix charge
20 rate to apply to the investment to determine that
21 amount.

22 And then the avoided costs are also
23 determined on a levelized basis and are set by the
24 Commission in the avoided cost proceeding. So we

1 would identify the appropriate level of avoided
2 costs related to this project, you know, based on
3 the life of the--the 25 year life of the project.
4 And I would subtract the levelized avoided cost
5 from the levelized annual cost of the \$50 million
6 investment to get the incremental amount that would
7 flow through the REPS rider. And my current
8 estimate in my testimony today is that that
9 incremental annual amount would be \$2.7 million.

10 Q. And then when you make reference--on page 2 of your
11 summary, you indicate that the Company is not
12 requesting a rate change at this time but would
13 expect to make its request in early 2009; what cost
14 would be--would you anticipate would be recovered
15 in early 2009?

16 A. Well, in 2009, we'll file an initial REPS rider,
17 and at that point we--the rider itself would become
18 effective September 1, 2009, through August 2010.
19 So we would estimate the cost that would be
20 incurred under this program, as well as any other
21 compliance initiative that we have in place. And
22 we would also take into account anything that we
23 will have spent to date, you know, when Senate
24 Bill-3 became effective and when we make our REPS

1 rider filing. So we would estimate all of those
2 costs for that time period and include them in the
3 proposed rider that we would file in early March.

4 Q. And you mentioned in your previous answer, I
5 believe, a return component?

6 A. Yes.

7 Q. Would the Company earn a return on this--the dollar
8 that they invest in this program?

9 A. Yes, Duke's program is really no different from a
10 cost recovery mechanism than any other--well, I
11 hesitate to say no different. I'll say it's very
12 similar to our investment in other types of
13 generating facilities, because with this--this
14 solar investment, as well as any others as has been
15 presented in previous testimony, the funds are
16 advanced by the investors of the Company. And then
17 we need to recover them from the customers, just
18 like we need to recover the cost of the PPA or any
19 other operating expenses.

20 So, in this case, the--you know, one of
21 the main differences is that a special rider was
22 created to allow us to recover these costs, but the
23 revenue requirement associated with investing in a
24 generating plant is really no different for this

1 than, you know, a fossil plant. So we would--we
2 would determine the revenue requirement that we
3 need to recover--to recover through the special
4 mechanism, the REPS rider, but also because the
5 avoided cost component is levelized, then it--it
6 seems to force us into levelizing the costs of the
7 \$50 million investment also. But other than that,
8 we would be recovering this in a similar fashion
9 and need to earn a return, depreciation, you know,
10 the annual fixed costs.

11 Q. Does the Company earn a return on power that
12 purchases under a PPA?

13 A. The Company does not earn a return on that power,
14 because there are no investor funds that have been
15 supplied, you know, other than perhaps some working
16 capital needed. But the--you know, I think it's a
17 good presumption that the third party supplier has
18 an investment and is, you know, recovering return
19 in that.

20 Q. Certainly. Now, as I understand the Company's
21 proposal, you are asking that the program be
22 determined to be prudent in this proceeding; is
23 that correct?

24 A. I think in requesting the--the blanket CPCN, we are

1 in effect asking the Commission that--to determine
2 that it is, you know, in the public interest to--to
3 grant it to us and, therefore, is a prudent thing
4 to do.

5 Q. And would it follow, then, that any dollars spent
6 or invested in the pursuit of this program will be
7 determined prudent?

8 A. I think that there will be another opportunity for
9 the Commission to make that determination. I think
10 that if the program is approved, then it's saying
11 that undertaking the initiative is a prudent thing
12 to do. And I think it will be incumbent upon Duke
13 Energy Carolinas to execute the program in a
14 prudent fashion. And then we will bring those
15 costs before the Commission to request recovery.
16 And at that time, the Commission will have an
17 opportunity to--to determine if they agree that the
18 costs are prudently incurred and, therefore,
19 recoverable through the REPS rider.

20 MR. CHAMBERLAIN: That's all the questions
21 I have. Thank you.

22 COMMISSIONER JOYNER: Mr. Olson?

23 MR. OLSON: Thank you.

24 CROSS EXAMINATION BY MR. OLSON:

1 Q. Good afternoon, Ms. McManeus. My name is Kurt
2 Olson, and I represent North Carolina Sustainable
3 Energy Association. I just have a few quick
4 questions.

5 Did I understand your testimony
6 correctly--and someone stop me if I'm
7 mischaracterizing it--did you say that the statute
8 SB-3 was very specific with respect to the cost
9 recovery provisions dealing with customer-owned
10 generation?

11 A. No, I did not mean--I was saying it was very
12 specific with respect to the recovery of a
13 purchased power agreement that is used to meet the
14 REP standard or the purchase of RECs.

15 Q. As compared to the amount of detail in the statute
16 that relates to cost recovery for owned generation;
17 is that right?

18 A. I'm sorry. Could you ask the question--

19 Q. You didn't understand? I'm sorry. When you said
20 it was very specific, I'm comparing that to--
21 compared to what?

22 A. Compared to the recovery of the cost of complying
23 with the standard through owned renewable
24 generation.

1 Q. Okay.

2 CHAIRMAN FINLEY: Utility-owned
3 generation? Utility-owned generation, you're
4 saying? Duke-owned generation?

5 THE WITNESS: Yes.

6 Q. (By Mr. Olson) Okay. Thank you. And so did I
7 understand your testimony, then, that--that you--
8 you didn't think that meant that the statute had a
9 preference one way or the other, in terms of where
10 the generation came from?

11 A. My opinion is that if the utility-owned generation
12 is an appropriate mechanism of compliance, as would
13 be a PPA or a purchase of a REC, you know, if
14 they're given equal footing, that I would--I would
15 expect that the cost recovery should be given equal
16 footing.

17 Q. When you say "equal footing," do you mean equal
18 detail in the statute?

19 A. Yes, and equal footing in terms of the mechanism
20 and timeliness of recovery.

21 Q. All right. So you're--you're not saying--well,
22 strike that. I'll go on from here.

23 Let's turn to your direct or rebuttal
24 testimony, if you would, on page 8, and if you want

1 to talk about what's on page 9 as well. And while
2 you're getting there, this is a question about what
3 NCSEA Day asserts that improved net metering rules
4 are needed in North Carolina to encourage the
5 development of customer-owned solar generation; do
6 you see that question?

7 A. Yes.

8 Q. And in response to that--and I didn't read the
9 whole question. But, in response to that, you go
10 through a series of options that are being offered
11 by the Company, in that case, Duke; is that right?

12 A. Right.

13 Q. And one of those options is the small customer
14 generator rider, SCG; is that correct?

15 A. That's correct.

16 Q. Can you tell me, first of all, how many customer
17 generators you have within your service area?

18 A. I think that we have--I think 76 in North Carolina.
19 I don't remember how many are in South Carolina.

20 Q. Okay. And of those 76, can you tell me how many
21 are--have opted to use the small customer generator
22 rider?

23 A. No, I don't know today the breakdown of who's on
24 net metering, PP, SCG. I don't know.

1 Q. Okay. Well, thank you.

2 MR. OLSON: I have no further questions.

3 COMMISSIONER JOYNER: Ms. Compton?

4 MS. COMPTON: I have no questions.

5 COMMISSIONER JOYNER: Mr. Green?

6 MR. GREEN: No questions.

7 COMMISSIONER JOYNER: Mr. Gillam?

8 CROSS EXAMINATION BY MR. GILLAM:

9 Q. Good afternoon, Ms. McManeus. Looking at page 4 of
10 your rebuttal testimony, lines 6 to 8, you say, do
11 you not, Duke Energy Carolinas has agreed the
12 definition of the term "incremental cost" in Senate
13 Bill-3 may not be fulfilled unless both avoided
14 capacity and avoided energy costs are deducted in
15 determining incremental costs?

16 A. Yes.

17 Q. And we appreciate your agreeing to our position in
18 this regard, but we couldn't tell--we couldn't tell
19 whether Duke now intends to seek recovery of these
20 costs through the fuel adjustment clause or only
21 through base rates. Has Duke formulated its
22 position on this issue?

23 A. In the fuel statute, I do not see a place that
24 seems to explicitly allow the recovery of avoided

1 costs unless it is related to a purchase of power.
2 And as such, I don't see where I can include this
3 in the fuel statute through our fuel adjustment
4 clause, which, in my mind, leaves me with the
5 recovery mechanism of base--you know, through a
6 general rate case through my base rates, even
7 though, as I've said before, you know, I think that
8 seems, in my mind, to be a flaw with the
9 legislation that has been written.

10 Q. Okay. Thank you. Now, going to the sentence that
11 begins on line 22 of page 4, you say, do you not,
12 that costs of the program will be just one
13 component of the Company's REPS compliance costs
14 which will be recovered through a REPS rider? Is
15 your point here simply that Duke will also be
16 making other purchases, such as the SunEdison
17 purchase, and also perhaps developing other self-
18 renewable generation projects, or were you
19 intending to make some different point here?

20 A. The point I was trying to make is that we know that
21 there are specific cost caps, like, \$10 for a
22 residential account, and this is only, you know,
23 not quite a dollar of it. But I didn't want anyone
24 to expect that my REPS rider may be simply limited

1 to a dollar for residential customers, because
2 there may be other things that will be included in
3 our compliance with the REPS standard and need to
4 flow through the REPS rider.

5 Q. Okay. On page 5 of your rebuttal, lines 3 to 8,
6 you say the Public Staff witnesses state that the
7 Company intends to request annual recovery of
8 \$8,930,000. Is this figure an accurate
9 representation of the Company's intended REPS rider
10 cost recovery, and you answered no; did you not?

11 A. That's right.

12 Q. That figure of \$8,930,000 was based on the document
13 Duke provided to the Public Staff; was it not?

14 A. Yes.

15 Q. So Mr. McLawhorn and Ms. Cox didn't just decide to
16 put forth a false statement about Duke, did they?

17 A. No, they did not. This question was intended to
18 make clear that we have changed the program. And,
19 therefore, \$8.9 million is not the appropriate
20 number. And, you know, I guess also I would
21 reiterate again that we're not asking for recovery
22 of any particular REPS rider amount in this
23 proceeding but are providing estimates of what we
24 would intend to recover. And, yes, that was the

1 original estimate and now the estimate has changed.

2 Q. Staying on the same page of your rebuttal, and
3 looking at lines 17 to 21, you say the Public Staff
4 witnesses also testify that the Company's utility-
5 wide ceiling for REPS compliance is approximately
6 \$22,500,000 in 2010 and will increase to
7 approximately \$34,000,000 in 2012. Does the
8 Company agree with this estimate, and you answered
9 that you do not agree and the actual numbers are
10 higher; isn't that correct?

11 A. That's correct.

12 Q. But here again, the Public Staff's numbers are
13 based on customer account totals that were given to
14 us by Duke; are they not?

15 A. They are, and those have now been revised.

16 Q. Right. And you recalculated your customer numbers
17 and calculated the new utility-wide ceiling amounts
18 which the Public Staff does not disagree with;
19 isn't that right?

20 A. That's right.

21 MR. GILLAM: All right. This is the point
22 where I come to questions about the confidential
23 testimony.

24 COMMISSIONER JOYNER: Counsel for Public

1 Staff has indicated that he is about to delve into
2 matters covered by the confidentiality agreement.
3 If you have not signed such an agreement, I would
4 ask that you clear the room, and we will have you
5 back in just as soon as possible.

6 (BECAUSE OF THE PROPRIETARY NATURE OF THE
7 TESTIMONY CONTAINED ON PAGES 70 THROUGH
8 90, IT WAS FILED UNDER SEAL.)

1 MR. OLSON: Remember, you're under oath.

2 So anything you say from here on to anybody--

3 COMMISSIONER JOYNER: Let the record
4 reflect that as an accommodation--as a partial
5 accommodation to the--some of the witnesses, we are
6 interrupting the presentation of Duke's case-in-
7 chief to hear from intervenor witnesses.

8 Mr. Chamberlain, would you please call your
9 first--your witness?

10 MR. CHAMBERLAIN: Yes. Thank you to the
11 bench and to the parties for accommodating us.
12 Wal-Mart and Sam's would call Ken Baker, please.

13 (WHEREUPON, KENNETH BAKER WAS CALLED AS A WITNESS,
14 DULY SWORN, AND TESTIFIED AS FOLLOWS:)

15 MR. BAKER: And thank you very much for
16 allowing me to go forward.

17 DIRECT EXAMINATION BY MR. CHAMBERLAIN:

18 Q. Would you please state your name for the record?

19 A. My name is Kenneth Baker.

20 Q. Mr. Baker, did you cause to be filed certain
21 responsive testimony in this docket, consisting of
22 eight pages?

23 A. Yes, I did.

24 Q. And if I were to ask you the same questions posed

1 in that testimony today, would your answers be
2 substantially the same?

3 A. They would.

4 Q. And I understand that you have a summary prepared
5 to read; is that correct?

6 A. Correct.

7 MR. CHAMBERLAIN: And, Your Honor, we do
8 not have copies to hand out to the parties. I
9 apologize for that. We will submit that as a late-
10 filed exhibit, if that's acceptable.

11 COMMISSIONER JOYNER: Without objection?

12 COUNSEL: No objection.

13 COMMISSIONER JOYNER: Proceed.

14 A. First of all, Wal-Mart--

15 MR. CHAMBERLAIN: Just one moment. If I
16 could, I would move the admission of Mr. Baker's
17 testimony, please, into the record.

18 COMMISSIONER JOYNER: That's allowed. The
19 testimony is copied into the record as if given
20 orally from the stand.

21 (THE PREFILED DIRECT TESTIMONY OF KENNETH
22 BAKER WILL BE COPIED INTO THE RECORD AS
23 IF GIVEN ORALLY FROM THE WITNESS STAND.)

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 856

Application of Duke Energy Carolinas, LLC)
For Approval of Solar Photovoltaic)
Distributed Generation Program)
And for Approval of Proposed Method of)
Recovery of Associated Costs)

Responsive Testimony of Ken Baker

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Ken Baker. My business address is 2001 SE 10th St.,
Bentonville, AR, 72716-0550.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS DOCKET?

A. I am testifying on behalf of Wal-Mart Stores East, LP, and Sam's East,
Inc., (collectively, "Wal-Mart").

Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.

A. In 1992, I completed my Juris Doctor degree from the University of
Arkansas at Little Rock School of Law. I practiced general law in Little
Rock from 1992 -1999 before joining Wal-Mart in October of 1999. After
joining Wal-Mart, I worked primarily in the real estate department where I
located and negotiated sites to build distribution centers. In September of
2006, I transferred to Wal-Mart's Energy Department where I am currently
the Sr. Manager of Sustainable Regulation.

My duties include managing the intervention and participation in
non-rate regulatory proceedings across the country. I also work with our
internal government relations department on sustainable legislation. I have
given several presentations on Wal-Mart's energy conservation measures.

**Responsive Testimony of Ken Baker,
Docket No. E-7, Sub 856**

I have also assisted in the negotiation and drafting of Wal-Mart's renewable energy agreements. I have given testimony before the regulatory commissions in both New Hampshire and South Carolina.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE NORTH CAROLINA UTILITIES COMMISSION?

A. No, this is the first time I have submitted testimony before the North Carolina Utilities Commission (the "Commission").

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE OTHER STATE REGULATORY COMMISSIONS?

A. Yes, I have submitted testimony before the New Hampshire Public Utilities Commission and the South Carolina Public Service Commission.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to set out Wal-Mart's perspective on the issues being addressed in this docket. As a large customer of Duke Energy Carolinas, LLC, ("Duke") Wal-Mart is obviously sensitive to the costs of the proposal in this case. Wal-Mart is also interested in its own renewable energy systems and how they will be impacted by this Application should Wal-Mart expand its renewable program into North Carolina.

Q. IS WAL-MART CURRENTLY USING RENEWABLE ENERGY AT ANY OF ITS LOCATIONS?

A. Yes. Wal-Mart currently has, either in operation or undergoing installation, photovoltaic systems at 22 locations in California and Hawaii.

Q. HAVE YOU REVIEWED DUKE'S APPLICATION IN THIS CAUSE?

A. Yes.

Q. DOES WAL-MART HAVE CONCERNS REGARDING DUKE'S APPLICATION?

A. Yes. Wal-Mart's primary concern is that the proposed program appears to mandate that Duke receive ownership of the renewable energy certificates ("RECs") produced by photovoltaic facilities in its service territory. Wal-Mart requests that there be further discussions of this and surrounding issues concerning the filing.

Q. BRIEFLY DESCRIBE WAL-MART'S CONCERNS FOR THE COMMISSION.

A. Wal-Mart's concerns can be summarized as follows:

- 1) The filing does not allow for the host of a photovoltaic system to receive the RECs generated by the system;
- 2) The filing lacks information on the form of lease contract to be used by Duke;
- 3) The filing contains no provision for the host to take any of the renewable power at their facility; and
- 4) The filing does not provide enough information to explain how Duke proposes to acquire solar panels at \$5,000.00 per KW.

Q. DO YOU HAVE RECOMMENDATIONS FOR THE COMMISSION REGARDING WAL-MART'S CONCERNS WITH THE APPLICATION?

A. Yes.

**Q. BRIEFLY DESCRIBE YOUR RECOMMENDATIONS TO THE
COMMISSION.**

A. My recommendations to the Commission are as follows:

- 1) In order to help customers achieve their own renewable energy goals, Wal-Mart requests that the Commission allow facility site hosts to retain a certain percentage of all RECs generated by the system as part of the compensation in the lease contract. In order to make certain that a customer desiring REC ownership is in fact given that opportunity, Duke should not be allowed to deny or decline a contract based solely on the fact that the customer chooses to own a portion of the RECs generated by the particular system.
- 2) As part of Duke's application Wal-Mart requests that the form of lease contract to be used for the distributed generation program be included in the filing. Failure to have the contract as a part of this filing leaves far too many open questions, such as:
 - a) What lease rate does Duke plan to pay to the host of the facility?
 - b) What indemnities will Duke provide?
 - c) What access to the host facility will be required?
 - d) What type of warranty will Duke give with regards to the host roof?

- e) What type of structural studies does Duke intend to perform before installation?

The terms and conditions for these items should be specified in a form lease contract. The provisions of the form contract should be thoroughly evaluated and discussed during this proceeding and should be made exhibits to the initial filing of Duke.

- 3) Wal-Mart recommends that the host customer be allowed to use a portion of the renewable energy generated by the system installed on their facility. Moving energy from rooftops to Duke's transmission and distribution system – and then back to the customer – simply adds unnecessary cost. Allowing a customer to take a portion of the power generated would not only help the host become more energy efficient, it would also be more cost effective than Duke's current plan.

Q. DOES SENATE BILL 3 ("S.B. 3") IMPOSE RENEWABLE ENERGY AND ENERGY EFFICIENCY STANDARDS FOR ELECTRIC UTILITIES IN NORTH CAROLINA?

- A. Yes. S.B. 3 imposes renewable energy and energy efficiency standards ("REPS") for electric utilities in North Carolina (§ 62-133.7(b)(1)). The bill also requires that a certain percentage of REPS must be met through the use of solar energy resources (§ 62-133.7(d)).

Q. DOES S.B. 3 PROVIDE A VARIETY OF WAYS IN WHICH ELECTRIC UTILITIES MAY MEET RENEWABLE ENERGY REQUIREMENTS?

**Responsive Testimony of Ken Baker,
Docket No. E-7, Sub 856**

A. Yes. The bill provides a variety of ways in which electric utilities may meet those requirements. These include:

- 1) Generating electricity at a utility-owned renewable energy facility (§§ 62-133.7(b)(2)(a) & (b));
- 2) Purchasing electricity from a renewable energy facility owned and operated by third-party (§ 62-133.7(b)(2)(d)); and
- 3) Purchasing REC derived from a non-utility renewable energy facility (§ 62-133.7(b)(2)(e)).

**Q. IS IT INSTRUCTIVE THAT THE GENERAL ASSEMBLY ALLOWED
OPTIONS OTHER THAN UTILITY-OWNED RENEWABLE ENERGY
FACILITIES?**

A. Yes, I believe it is. S.B. 3 clearly envisions both utility-owned and non-utility-owned renewable energy facilities. Duke's proposal in this docket appears to focus exclusively on the first option, with no provision for any of the other options. More importantly, as proposed, the scope of Duke's proposal would place the second and third options at a significant disadvantage to the first, and may well eliminate those options altogether. In effect, Duke's proposal would completely preempt the field of solar generation in its service territory and extend Duke's exclusive monopoly to include that industry. Non-utility competitors will be hard pressed to compete with Duke's access to ratepayer funding for constructing solar generation facilities. Further, given Duke's proposal in this docket

and the current uncertainty surrounding net metering in North Carolina, there is no assurance that Duke customers wishing to construct and operate their own solar generation facilities will be able to receive the benefits of those facilities or the RECs they generate.

Q. WHAT IS YOUR FINAL RECOMMENDATION?

A. Wal-Mart recommends that the Commission:

- 1) Require Duke to submit for review, comment and approval a standardized lease contract that includes terms such as the lease rate Duke plans to pay to the host of the facility, what indemnities will Duke provide to the owner of the host facilities, what access to the host facility will be required, what type of warranty will Duke give with regards to the host roof and what type of structural studies Duke intends to perform before installation. The terms and conditions for these items should be specified in a form contract and the provisions should be thoroughly evaluated and discussed during this proceeding.
- 2) As part of the standardized lease contract, Duke should be required to allow the host of a photovoltaic facility to retain a portion of RECs generated by the facility as compensation.
- 3) Also as part of the standardized lease contract, Duke should be required to allow the host of a photovoltaic facility the option to take some portion of the renewable electricity generated by the facility,

rather than all of it going to Duke's system only to be repurchased by the facility host.

- 4) Require Duke to give further detailed explanation of how it intends to purchase solar panels at \$5,000.00 per KW. It would be very useful if the Commission would require Duke to produce evidence of firm offers for the panels before approval of their application is considered.

Wal-Mart also recommends that the Commission require Duke to give an estimate of the point in time that the price of solar panels will be reduced due to the achievement of economies of scale. Additionally, given Duke assertion that it will be able to purchase panels at \$5,000.000 per KW, Wal-Mart asks the Commission to consider capping the cost of panels supplied by Duke at \$5,000.00. If economies of scale allow Duke to acquire panels at a lesser price, that savings should be passed on to customers. In order to assure that these panels are acquired in the most cost effective manner possible, Duke should also be required to request bids for their solar installation in a very transparent manner that assures they are acquiring the best deal possible for ratepayers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

1 MR. GILLAM: In the interest of time
2 saving, would it be helpful to dispense with the
3 reading of summaries and delivery of summaries?

4 COMMISSIONER JOYNER: That's going to be
5 up to Mr. Chamberlain and his witness.

6 MR. CHAMBERLAIN: I tell you what, in the
7 interest of time, we will dispense with the reading
8 of the summary at this point and tender Mr. Baker
9 for cross.

10 COMMISSIONER JOYNER: We will first
11 entertain cross from the intervenor side of the
12 room.

13 MR. OLSON: I have no questions.

14 MS. COMPTON: I have no questions.

15 MR. GREEN: No questions.

16 MR. GILLAM: No questions.

17 MR. CAVROS: I have no questions.

18 COMMISSIONER JOYNER: Okay. Duke, do you
19 have any cross examination?

20 MS. NICHOLS: Just a few.

21 CROSS EXAMINATION BY MS. NICHOLS:

22 Q. Mr. Baker, your--you made four recommendations in
23 your testimony, correct?

24 A. I did.

1 Q. And of those four recommendations, it would be fair
2 to characterize two of those as essentially asking
3 for additional information; is that correct?

4 A. That's correct.

5 Q. And are you aware that Duke filed its application
6 in this case on June 6th, 2008?

7 A. Yes.

8 Q. And are you aware that Duke filed its direct
9 testimony in this case on July 25th, 2008?

10 A. Yes. Uh-huh.

11 Q. And are you aware that Wal-Mart never served Duke
12 with any discovery in this case?

13 A. Yes.

14 Q. And are you aware that Wal-Mart never asked Duke
15 any questions about the program on an informal
16 basis?

17 A. I am. I am also aware that we were contacted by
18 Duke about that, and we requested that we wait
19 until our referral--our rebuttal testimony were
20 filed, and then we would be happy to talk to Duke.

21 Q. Okay. So--

22 A. And we received no response from that.

23 Q. --so you're aware that Duke's contacted your
24 counsel shortly after you intervened and offered to

1 talk to you informally about the program?

2 A. Yes. And we made it clear that we would prefer to
3 file our rebuttal testimony and then have
4 discussions.

5 Q. Okay. Thank you.

6 MS. NICHOLS: Nothing further.

7 COMMISSIONER JOYNER: Redirect?

8 MR. CHAMBERLAIN: No redirect.

9 COMMISSIONER JOYNER: Questions from the
10 Commission?

11 (NO RESPONSE.)

12 COMMISSIONER JOYNER: With that, Mr.
13 Baker, you are excused.

14 THE WITNESS: Okay. Thank you.

15 COMMISSIONER JOYNER: Thank you.

16 (WITNESS EXCUSED)

17 COMMISSIONER JOYNER: Okay. Who's the
18 next witness?

19 MS. COMPTON: Thomas Starrs.

20 COMMISSIONER JOYNER: Mr. Starrs, if
21 you'll come around and be sworn, please.

22 (WHEREUPON, THOMAS STARRS WAS CALLED AS A WITNESS,
23 DULY SWORN, AND TESTIFIED AS FOLLOWS:)

24 DIRECT EXAMINATION BY MS. COMPTON:

1 Q. Would you please state your full name for the
2 record?

3 A. Yes. My name is Thomas Starrs, S-T-A-R-R-S.

4 Q. And would you please state where you are employed.

5 A. I'm self-employed as an independent consultant.

6 Q. And would you please state for the Commission what
7 your duties and responsibilities are in this
8 employment and describe your background.

9 A. Well, I guess I would say my duties are to generate
10 enough income to keep the peanut butter on the
11 table. And my background is, I spent about 25
12 years basically working in and around the renewable
13 energy industry, both--focusing both on wind energy
14 and solar energy and have focused my work for the
15 last 12 years on solar energy ranging in scale from
16 small-scale residential systems up to large
17 utility-scale systems.

18 Q. Prior to appearing here today, did you cause to be
19 filed with the Commission 10 pages of prefiled
20 direct testimony?

21 A. I did.

22 Q. Were there any exhibits attached to your testimony?

23 A. There were.

24 Q. And three; is that correct?

1 A. That's correct.

2 Q. Okay. Do you have any changes to your prefiled
3 direct testimony?

4 A. I do not.

5 Q. If I were to ask you today the same questions that
6 are in your prefiled direct testimony, would your
7 answers be the same?

8 A. They would.

9 MS. COMPTON: Commissioner Joyner, I ask
10 that the prefiled direct testimony of Thomas Starrs
11 and the exhibits attached thereto be copied into
12 the record as if given here today.

13 COMMISSIONER JOYNER: The prefiled
14 testimony will be copied into the record as if
15 given orally from the stand. The exhibits will be
16 identified as pre-marked.

17 MS. COMPTON: Thank you.

18 (THE PREFILED DIRECT TESTIMONY OF THOMAS
19 STARRS WILL BE COPIED INTO THE RECORD AS
20 IF GIVEN ORALLY FROM THE WITNESS STAND.)

1 **Q: Please state for the record your name, position, and business address.**

2 A: My name is Dr. Thomas Starrs. I am currently self-employed as an independent
3 consultant. My consulting practice is focused on solar energy business
4 development, market analysis and policy advocacy, with an emphasis on both
5 distributed- and utility-scale solar power development. My business address is
6 5808 SW 41st Avenue, Portland OR 97221.

7 **Q: Please describe your experience and qualifications.**

8 A: I have 25 years of academic and professional experience in renewable energy.
9 My recent career experience includes senior management positions with PPM
10 Energy/Iberdrola Renewables, one of the nation's largest developers of utility-
11 scale wind and solar projects; with the Bonneville Environmental Foundation, a
12 not-for-profit organization dedicated to renewable energy and watershed
13 restoration that funds its mission primarily through the sale of renewable energy
14 certificates (RECs); and Schott Solar, a leading global manufacturer of solar
15 photovoltaic cells and modules. Prior to holding these positions, I spent seven
16 years as an independent consultant in support of the design and implementation of
17 net metering and streamlined interconnection requirements across the United
18 States. In addition, I have served on the board of directors of the American Solar
19 Energy Society, the Prometheus Institute, the Solar Alliance, and the Solar Energy
20 Industries Association. I am on the Advisory Board of The Vote Solar Initiative
21 (Vote Solar) and have been retained by Vote Solar to review Duke Energy
22 Carolinas LLC (Duke) Application and analyze the issues contained therein. My
23 experience and qualifications are described in Exhibit 1, attached hereto.

1 **Q: Please summarize the recommendations you present in this testimony.**

2 **A: My testimony recommends that the North Carolina Utilities Commission (NCUC)**
3 expand the options for compliance with the Renewable Energy and Energy
4 Efficiency Portfolio Standard's (REPS) solar requirement by requiring that Duke
5 also provide a standard offer for RECs. At a minimum, the Commission should
6 require that Duke determine a long-term contract price for the solar RECs
7 obtained through this program, and make that same price available to third-party
8 customers alongside the Duke-provided program. Such a program would expand
9 the options available to Duke for meeting its REPS obligations; provide Duke
10 with an alternative mechanism for meeting its solar energy resource goals,
11 potentially at a lower cost; and would create a more competitive framework for
12 solar energy investment in North Carolina, better enabling the Commission to
13 evaluate the effectiveness of the Duke program.

14 **Q: Does Vote Solar support elements of Duke's Proposal?**

15 **A: Vote Solar is supportive of many elements of Duke's Proposal to expand into**
16 solar photovoltaic (PV) generation. Vote Solar applauds Duke's commitment "to
17 supporting the development of solar PV technology into a flourishing and self-
18 sustaining industry that can complement more conventional technologies to
19 supply the electricity needs of the Company's customers." (Duke Application
20 (Duke App.) at 2.)

21

22 Vote Solar also commends Duke Energy's recognition that "distributed energy
23 could offer solutions to some of the nation's pressing energy and electric power

1 problems, including power quality issues, tighter emissions standards, and
2 transmission bottlenecks.” (Duke App. at 3.)

3 **Q: What changes to the Duke Proposal does Vote Solar recommend?**

4 A: The Duke Proposal—purchasing and installing solar systems throughout the
5 company’s service territory—represents one potential path by which the utility
6 can achieve compliance with the solar requirement of the REPS. There is another
7 possible approach. Instead of purchasing solar systems outright, Duke could
8 purchase the solar RECs from customers choosing to install solar systems that are
9 designed principally to generate electricity to serve their own loads. Vote Solar
10 recommends that NCUC require Duke to also support customer-sited and
11 customer-owned solar generation by establishing a solar REC purchase program.

12 **Q: What are the advantages of the approach Vote Solar recommends?**

13 A: The advantages are several. First, this approach leverages significant private
14 investment, potentially reducing costs to ratepayers. Under this approach, a utility
15 customer would put up its own capital to install a solar system and use the
16 electricity generated by the system to meet its own facility needs, thereby
17 offsetting part of the electricity it otherwise would purchase from Duke. The
18 primary value of the system to the customer would come from these avoided
19 utility purchases. In addition, the utility would purchase the associated RECs
20 from the customer and use the RECs for REPS compliance purposes. The
21 combination of the cost savings (from avoided utility purchases) and the revenue
22 stream (from the sale of RECs to the utility) are likely to make the solar system
23 economics attractive enough to stimulate direct customer investments in solar

1 power projects. As a result, more solar power generating capacity may be
2 installed for the same ratepayer investment...

3
4 Second, the approach recommended by Vote Solar will allow Duke customers to
5 enjoy other benefits of serving their own electricity demand. In addition to
6 reducing utility bills, these benefits include fixing future energy costs, hedging
7 against future rate increases, demonstrating and supporting their environmental
8 values, and contributing directly to a safer and more secure energy future. These
9 benefits of self-generation have proven quite popular in other states, including
10 California, Colorado, Connecticut, New Jersey, and Oregon.

11
12 Third, Duke states that one of the goals of its proposed program is to support "the
13 development of solar PV technology into a flourishing and self-sustaining
14 industry that can complement more conventional technologies to supply the
15 electricity needs of the Company's customers." (Duke App. at 2.) Under Duke's
16 Proposal, solar is treated as a wholesale generating resource, and competes with
17 other wholesale resources. Under Vote Solar's proposal, solar systems would
18 deliver electricity on the customer side of the meter, displacing retail electricity
19 purchases. One significance of the difference is that under Vote Solar's proposal,
20 solar no longer needs incentives once it can deliver electricity at retail grid parity.
21 Under Duke's proposal, the relevant benchmark is a marginal wholesale rate—a
22 more difficult economic proposition for making solar power economically viable,
23 since wholesale rates typically fall substantially below comparable rates.

1 **Q: Does a standard REC offer provide more certainty regarding the amount of**
2 **PV generation acquired in return for a commitment of ratepayer funds?**

3 A: Yes. With a standard REC offer, ratepayer funds are used to buy RECs from a
4 customer generator over a specified contract period. The price is paid to the
5 customer-generator only after the PV electricity is generated. A REC offer
6 guarantees that ratepayer funds support actual systems producing actual electricity
7 on a "pay for performance" basis, rather than rewarding utility investment in
8 generating equipment that may or may not perform in accordance with
9 expectations.

10 **Q: Are there precedents in other states for the approach Vote Solar**
11 **recommends?**

12 A: Yes. Twelve states, in addition to North Carolina, have renewable energy
13 standards that include specific requirements for solar. Several of these states have
14 adopted Vote Solar's proposed approach, requiring utilities to purchase solar
15 RECs from non-utility customer-generators as a mechanism for achieving
16 compliance.

17 **Q: Is Vote Solar providing any evidence to support its contention regarding**
18 **ratepayer benefits?**

19 A: Yes. In response to Duke's application, Vote Solar undertook an analysis of the
20 economics of a hypothetical 200 kW PV installation on the roof of a big-box store
21 in the Raleigh area to determine what REC price would be necessary to
22 incentivize customer investment in self-generation for solar. This analysis
23 provided in Exhibit 2 attached hereto.

1
2 Vote Solar then extrapolated the results to compare the amount of solar that could
3 be incentivized under the two different approaches for the same \$100 million
4 dollars investment. The very significant result is provided in Exhibit 3 attached
5 hereto.

6 **Q: Can you explain Exhibit 2?**

7 **A:** Yes. Vote Solar used the 'OnGrid Solar Financial Analysis Tool', a widely used
8 commercial solar sales tool, to model the economics of a hypothetical 200 kW PV
9 installation on the roof of a 'big-box' retail store in the Raleigh area in order to
10 determine a REC price necessary to deliver an internal rate of return (IRR)
11 between 9% and 12%. Direct communication with a representative customer in
12 Raleigh provided the energy usage and demand data, and the model incorporates
13 actual utility tariffs (in this case, Duke OPT-G) and predicted system performance
14 by location based on the National Renewable Energy Laboratory's PV
15 Watts/TMY2 data. More information on the model can be found at
16 <http://www.ongrid.net/PVPayback.html>.

17
18 Vote Solar used a 'big box' retail store because many commercial PV systems
19 have been installed on the buildings of this type of retailer. Solar sales
20 professionals have indicated that there is a general consensus that a PV
21 installation must have above a 9% internal rate of return to make a solar project
22 investment attractive. We ran the model under both a 3% and 6% background
23 electricity escalation pricing scenario and for both 10 and 15 year contract

1 lengths. Using the target IRR, the model determined that a REC value of
2 \$0.17/kWh or higher would drive private investment in PV systems.

3 **Q: Can you explain Exhibit 3?**

4 A: Yes. Using the results from our analysis, we took a conservative estimate of the
5 REC value necessary to drive customer investment in solar power projects, and
6 used a value of \$0.18/kWh over a 15 year contract term. At that rate, an
7 equivalent investment to what Duke is proposing (\$100 million) could be
8 leveraged to incentivize 29.3 MW of customer-sited, customer-owned solar power
9 installations, i.e. nearly 50% more capacity than Duke has indicated will be
10 supported through its direct investment of \$100 million in utility-owned solar
11 generating capacity.

12 **Q: What conclusion do you draw from these analyses?**

13 A: For all the reasons cited in my testimony, I conclude that Duke ratepayers would
14 be well-served if Duke were to expand its approach to compliance with the REPS
15 to include a standard-offer REC purchase program.

16 **Q: Does Duke provide a breakdown of PV generation costs?**

17 A: No, Duke provides no indication of the cost of electricity and/or solar RECs per
18 kWh of solar power generation that which would result from implementation of
19 its Proposal. The only indication of comparative cost that Duke provides is
20 anticipated cost per Watt of installed generating capacity. Duke's Owen Smith
21 testifies that "between 80-90% of the program's installed capacity [20 MW DC]
22 will consist... [of] individual facilities in this category ranging from 500 kW to 3
23 MW." The cost projections are given as only \$5 per Watt installed for systems

1 over 1 MW and \$6.50 per Watt for 250 kW to 500 kW. The projected costs are
2 not broken down into further details regarding component, labor, or
3 administrative costs.

4 **Q: Can you cite examples of other utilities that offer a standard REC offer to**
5 **customers?**

6 **A:** Yes, there are several illustrative examples, as follows:

7 ➤ Arizona Public Service offers 10 and 15 year contracts with REC prices at
8 0.202/kWh and 0.187/kWh respectively. Small systems are offered an up-
9 front payment of \$3/watt DC, in exchange for the estimated REC
10 production from the system.

11 ➤ Public Service Company of New Mexico offers 20-year contracts for solar
12 RECs at \$0.13/kWh for systems under <10kW. It recently proposed
13 expanding that program to commercial-scale systems between 10 kW and
14 1,000 kW.

15 ➤ Xcel Energy in Colorado offers 20-year REC contracts with both an
16 upfront buydown of \$2/Watt for all systems up to 100 kW, plus an
17 additional buydown of \$2.50/Watt for systems under 10 kW or an
18 additional \$0.115/kWh produced for systems between 10 kW and
19 100 kW.

20 The varying pricing of REC offers reflects the cumulative effect of other
21 incentives specific to each state (i.e. various preferential tax treatment), and the
22 retail value of electricity within each utility service territory.

23

1 **Q: Does this conclude your testimony?**

2 **A: Yes, it does.**

3

4

1 (STARRS DIRECT EXHIBIT NOS. 1 THROUGH 3
2 WERE MARKED FOR IDENTIFICATION.)

3 Q. (By Ms. Compton) Mr. Starrs, did you prepare a
4 summary of your prefiled direct testimony for
5 presentation today?

6 A. I did.

7 MS. COMPTON: We could waive the reading
8 again and just have it entered into the record--

9 COMMISSIONER JOYNER: Okay. Without--

10 MS. COMPTON:-- for purposes of time.

11 COMMISSIONER JOYNER: --without objection,
12 the oral reading of the summary will be waived. It
13 will be copied into the record. Copies have been
14 provided to all of the parties and to the
15 Commission.

16 (THE SUMMARY OF THE PREFILED DIRECT
17 TESTIMONY OF THOMAS STARRS WILL BE COPIED
18 INTO THE RECORD AS IF GIVEN ORALLY FROM
19 THE WITNESS STAND.)

**SUMMARY OF TESTIMONY OF THOMAS STARRS ON BEHALF
OF INTERVENOR THE VOTE SOLAR INITIATIVE**

Docket No. E7, Sub. 856

The Vote Solar Initiative (Vote Solar) is supportive of many elements of Duke's Proposal to expand into solar photovoltaic (PV) generation. Vote Solar applauds Duke's commitment "to supporting the development of solar PV technology into a flourishing and self-sustaining industry that can complement more conventional technologies to supply the electricity needs of the Company's customers." (Duke Application (Duke App.) at 2.)

Vote Solar also commends Duke Energy's recognition that "distributed energy could offer solutions to some of the nation's pressing energy and electric power problems, including power quality issues, tighter emissions standards, and transmission bottlenecks." (Duke App. at 3.)

My testimony, however, recommends that the North Carolina Utilities Commission (NCUC) expand the options for compliance with the Renewable Energy and Energy Efficiency Portfolio Standard's (REPS) solar requirement by requiring that Duke also provide a standard offer for RECs. At a minimum, the Commission should require that Duke determine a long-term contract price for the solar RECs obtained through this program, and make that same price available to third-party customers alongside the Duke-provided program. Such a program would expand the options available to Duke

for meeting its REPS obligations; provide Duke with an alternative mechanism for meeting its solar energy resource goals, potentially at a lower cost; and would create a more competitive framework for solar energy investment in North Carolina, better enabling the Commission to evaluate the effectiveness of the Duke program.

1 COMMISSIONER JOYNER: With that, is the
2 witness available for cross?

3 MS. COMPTON: Yes, he is.

4 COMMISSIONER JOYNER: Is there any
5 intervenor cross of the witness? Mr. Cavros?

6 MR. CAVROS: Yes, please.

7 COMMISSIONER JOYNER: If you pull that mic
8 as close to you--

9 MR. CAVROS: Thank you.

10 CROSS EXAMINATION BY MR. CAVROS:

11 Q. Mr. Starrs, George Cavros on behalf of Southern
12 Alliance for Clean Energy. Just a couple quick
13 questions. In your summary testimony, on the first
14 page, you state, at a minimum, the Commission
15 should require that Duke determine a long-term
16 contract price for the solar RECs obtained through
17 this program.

18 Earlier in the day, Mr. Smith referenced
19 the NC Green Power program as an option for solar
20 generation providers. He mentioned it as an option
21 or as a source for RECs. Could you respond to the
22 benefit or the--or the drawbacks of NC Green Power,
23 as best as you understand the program?

24 A. Yes. I don't pretend to be an expert on that

1 program, but there are a couple of elements to that
2 program that would differ substantially and
3 significantly with respect to our discussion here
4 today from something like a standard offer
5 agreement from Duke.

6 One--probably the key one is that my
7 understanding is that the NC Green Power program
8 doesn't provide a long-term contract price. It
9 provides a price for RECs in any given year, and
10 that there's no long-term commitment to purchase
11 the RECs at a particular price. And that's
12 particularly relevant, because people are unlikely
13 to make a substantial investment in a solar power
14 project without a long-term commitment to recover
15 those costs through a REC purchase.

16 So having a commitment to procure the
17 RECs just for one year would not provide the long-
18 term certainty required from the customers to
19 ensure that they actually would get--recover the
20 cost of their systems over time. That's the key--
21 that's the key difference.

22 Q. And why is certainty important?

23 A. Well, it's just a matter of calculating a return on
24 investment, just like any other return. The REC

1 prices in the ranges that we've discussed today are
2 actually a key component in the overall return from
3 the customer's perspective. Or to put it a little
4 bit differently, if I chose to invest in a solar
5 power system for my home or my business here in
6 Raleigh, the return on that investment would be
7 measured basically in terms of the energy benefit
8 to me, which for a net metering customer would
9 effectively be the avoided retail price of energy
10 and the REC price to me.

11 As we know, again, from the discussion
12 today, the REC price is actually substantially
13 higher than the energy price. So those are the two
14 components that I would account for in trying to
15 figure out whether it's a good investment or not.
16 And if that second investment, which indeed is--or
17 second component, which, indeed, is the larger
18 component, is guaranteed to me only for a one-year
19 period, then that doesn't provide the certainty
20 that I would need to justify that investment.

21 Q. And the last--one last question. You mentioned
22 that such a program--that, at a minimum, the
23 Commission require Duke determine a long-term price
24 REC obtained through this program and such a

1 program could provide an alternative mechanism for
2 meeting its own energy resources goal and
3 potentially lower costs. And I just want to touch
4 this issue of--touch on this issue of lower cost
5 with you and how it relates to the--to the--to the
6 price of solar power. I'd asked some questions
7 earlier of Duke's witnesses regarding the--
8 generally the price of solar energy. And are you
9 willing to offer an opinion on that, in terms of,
10 you know, is the cost coming down on solar energy?
11 And if so, you know, any specifics on how much it's
12 dropped in the last few years?

13 A. Yes. I'd be happy to do that. The price of solar
14 photovoltaic power has been dropping more or less
15 steadily since the technology was first deployed as
16 far back as the 1950s. At that time, it was only
17 really used in--for very remote--actually,
18 literally, extraterrestrial, meaning, space-based
19 applications.

20 As the costs have come down, it's become
21 cost-effective for a wider variety of applications,
22 including most recently grid-tied applications.
23 The costs--the cost declines have been pretty
24 steady, but in the last few years, supply/demand

1 imbalance in the market means that prices actually
2 have been pretty level--not increasing or
3 decreasing, but pretty level for the last, say,
4 four or five years. But my professional opinion is
5 that the cost of solar photovoltaic power is likely
6 to decline fairly substantially in the coming, say,
7 three to five years.

8 Q. Thank you.

9 MR. CAVROS: No further questions.

10 COMMISSIONER JOYNER: No questions, Mr.
11 Chamberlain? Mr. Olson?

12 MR. OLSON: Yes. I just have a few.

13 CROSS EXAMINATION BY MR. OLSON:

14 Q. Good afternoon, Mr. Starrs.

15 A. Good afternoon.

16 Q. My name is Kurt Olson. You had mentioned a little
17 bit--given an opinion about NC Green Power and some
18 of the drawbacks to that program. I was wondering
19 if you could expand on that at all in terms of the
20 pricing that NC Green Power offers for RECs. Are
21 you familiar with that?

22 A. I--again, I don't pretend to be an expert on every
23 aspect of that program. I do understand that
24 they're currently offering a price of 15 cents a

1 kilowatt hour for--for solar RECs.

2 Q. And what about the funding, are you familiar with
3 that, whether there's unlimited funding in NC Green
4 Power to buy RECs, or is there a cap on the
5 funding? Are you familiar with that at all?

6 A. Yeah, I am. And I'm glad you mentioned that,
7 because that was the other--the other drawback that
8 I--that I feel is associated with that program is
9 that it relies on voluntary contributions to NC
10 Green Power to basically fund the monies that are
11 paid out for the purchase of those RECs. And so,
12 again, that provides a lack of certainty, because
13 the program administrators can't rely on that
14 funding being available from year to year and,
15 therefore, can't commit really to any long-term
16 payment of RECs under that program.

17 Q. And does that have a chilling effect on private
18 investment? I mean--and I'm not talking about
19 independent-owned utilities as a private investor.
20 I'm talking about real private investors, whether
21 that has--

22 MS. NICHOLS: Objection to the suggestion
23 that we're not real on this side of the stage.

24 MR. OLSON: I'm sorry. Let me rephrase

1 that.

2 Q. (By Mr. Olson) Other than independent-owned
3 utilities, people who might be investing in them,
4 does the lack of or the uncertainty of funding have
5 a chilling effect on entering the market and making
6 those kinds of investments in your opinion?

7 A. Yes, absolutely. In my opinion, the only people
8 who would find the participation in that program
9 beneficial to them are people who essentially have
10 already decided to invest in that solar power
11 system anyway.

12 Based on the economics and the absence of
13 that REC payment, or to be more precise, based on
14 the economics of the one-year REC payment that is
15 likely to be available or committed to being
16 available under the NC Green Power program, and it
17 would not stimulate investment from customers who
18 would need the certainty of that longer-term REC
19 payment stream to make the economics viable,
20 meaning, to generate returns that are adequate for
21 their--for their needs.

22 Q. Were you present earlier today when the--I believe
23 it was Witness Owen Smith talked about Duke's
24 attempts to develop a REC--or a standard offer for

1 RECs?

2 A. Yes, I was.

3 Q. And you're familiar with Vote Solar's concerns
4 about a standard offer for RECs; is that correct?

5 A. Well, I'm not--I'm not exactly sure what you're
6 alluding to, so maybe you should clarify that.

7 Q. Well, I--in your testimony, you express some
8 concerns about the--a standard offer being
9 available for RECs; is that right?

10 A. Well, my concern is that--is that Duke has
11 indicated in its testimony, and again today, that
12 they are interested in developing a standard offer,
13 but I have two concerns. One is that being
14 interested in it and having it in place are two
15 very different things. So we have no certainty
16 today as we sit here that that program actually
17 would be available.

18 And the second thing that concerns me is,
19 I believe Mr. Smith testified that it would be
20 really essentially at Duke's discretion whether
21 to--whether to commit to purchasing the RECs under
22 that standard offer really on a project-by-project
23 basis. And that also, to use your words, would
24 have a chilling effect on the market. Because if

1 you think about the progression involved in someone
2 deciding to make an investment, you know, there's a
3 lot of work associated just with putting together
4 essentially a proposal to Duke. And if that
5 potential solar power investor--non-utility,
6 private solar power investor doesn't have a firm
7 offer essentially on the table to purchase those
8 RECs at a fixed price for a certain term of years,
9 and instead is relying on Duke's discretion down
10 the road as to whether or not Duke will ultimately
11 choose to buy those RECs, then that will discourage
12 investors from pursuing those opportunities and I
13 think limit the level of participation in such a
14 standard offer.

15 Q. Thank you very much.

16 MR. OLSON: I have no further questions.

17 COMMISSIONER JOYNER: Questions from the
18 Attorney General?

19 MR. GREEN: No.

20 COMMISSIONER JOYNER: Mr. Gillam?

21 MR. GILLAM: No questions.

22 COMMISSIONER JOYNER: Duke?

23 CROSS EXAMINATION BY MS. NICHOLS:

24 Q. Good afternoon, Dr. Starrs.

1 A. Good afternoon.

2 Q. Can you tell me a little bit about the Vote Solar
3 initiative, what the types of people or companies
4 are that are the members?

5 A. Uh-huh. Basically, it's a grassroots organization
6 that's--so it's membership--loosely membership-
7 based and seeks contributions from members of the
8 general public to support an agenda that
9 essentially focuses on advocating for disseminating
10 information and promoting--encouraging the
11 development of pro-solar policies around the
12 country.

13 Q. Would the membership include solar equipment
14 suppliers?

15 A. No.

16 Q. Okay. What about solar installers?

17 A. No.

18 Q. So that's how it differs a bit from the Solar
19 Alliance?

20 A. Correct. Now, to be clear, there's nothing that
21 would preclude someone who is employed by one of
22 those companies from making a contribution to Vote
23 Solar, but Vote Solar doesn't seek or accept
24 company members--

1 Q. Okay.

2 A. --per se.

3 Q. Thank you. You've been talking about your proposal
4 for a standard REC offer, and I want to turn to
5 page 3, lines 5 through 8 of your testimony. You
6 talk about requiring that Duke determine a long-
7 term contract price for solar RECs and essentially
8 price that at the same price as Duke's program
9 that's proposed here. Is that accurate?

10 A. I--

11 MS. COMPTON: Which page?

12 MS. NICHOLS: I'm sorry. Page 3, lines 5
13 through 8.

14 A. Let me read this and see--

15 Q. Sure.

16 A. --if it concurs with what you just said. (Witness
17 reviews document.) Yes. I think that's a fair--

18 A. --characterization of what I said.

19 Q. (By Ms. Nichols) I can't tell exactly from these
20 statements. Are you suggesting that this is a
21 mandatory REC purchase option?

22 A. You mean the proposed program by Duke?

23 Q. No. Your proposed--your proposal, your
24 counterproposal.

- 1 A. I'm sorry.
- 2 Q. Would it be mandatory that the company buy any RECs
3 that any generator had that wanted to sell them at
4 the price that would be set?
- 5 A. Essentially, yes. I mean, there could be some
6 constraints on the program. You just made it
7 pretty open-ended. But, yeah, essentially, the
8 idea is that Duke would offer a program where
9 private non-utility solar system owners could
10 install their systems and rely on a stream of
11 payments--or a stream of REC payments from Duke as
12 the foundation for basically supporting their
13 investments in those projects.
- 14 Q. And one of your criticisms of Duke's proposal is
15 that it's not--that it's at the Company's
16 discretion to determine if it needs to purchase
17 those RECs, correct?
- 18 A. From the testimony that I heard today, yes, that's
19 correct.
- 20 Q. Are you aware that the Commission rejected a
21 mandatory REC purchase obligation in its rule-
22 making under Senate Bill-3?
- 23 A. No, I was not aware of that.
- 24 Q. So you aren't aware that the Commission ruled that

1 unlike the PURPA obligation to purchase power
2 produced by QFs, the electric power suppliers are
3 not obligated to purchase all RECs offered for
4 purchase; the Commission is not persuaded that it
5 is appropriate to impose such an obligation?

6 A. I suppose the question is whether there's any
7 foundation for distinguishing the solar REC program
8 from the broader SB-3 implementation, and whether
9 the specific parameters for the solar carve out
10 would justify a different approach. I don't know
11 whether the Commission addressed that issue or not.

12 Q. Fair enough. On your Exhibit 2--if we could look
13 at your Exhibit 2, page 2. I want to ask you about
14 some of the assumptions that you made to derive a
15 REC purchase price of 18 cents. On page 2, you
16 talk about the escalation rate, and you look at
17 either a variable from three or six percent per
18 year.

19 A. Yes.

20 Q. And that's--your assumptions are on how much the
21 price of electricity is going to go up year-over-
22 year for 15 years, correct?

23 A. Correct. And that's for the retail price of
24 electricity, since the presumption here is these

1 are customer investments that are offsetting retail
2 rates.

3 Q. And then down further, when you talk about the
4 target IRR of 9 to 12 percent, that's the--that's
5 the return that the customer would have to make in
6 order to justify their investment in a solar PV
7 system, correct?

8 A. Yeah. That's a typical IRR that's used. It's a
9 non-levered IRR that's the typical range for
10 private investors in solar power projects in my
11 experience.

12 Q. And to arrive at the 17 or 18 cents that you
13 arrived at, you have to assume the high end of the
14 escalation, the six percent, and the low end of the
15 IRR, the nine percent; is that correct?

16 A. Yeah. I don't think it was the very high end and
17 very low end, but it was--but it was certainly
18 the--but, yes, in general, your characterization is
19 correct.

20 Q. And so if you were to assume the low end on the
21 price escalation--

22 A. Uh-huh.

23 Q. --and the high end on the IRR, your REC price could
24 go up to as high as 32 cents; is that correct?

1 A. I don't--I don't have that information in front of
2 me, but that sounds reasonable.

3 Q. And you're also assuming a PV cost per watt at
4 \$6.50; is that correct?

5 A. Yes. In my experience, that's a reasonable price
6 for--even for larger systems, actually, that are
7 being installed these days across the country.

8 Q. And for a single residential customer to install a
9 system, that price is likely to be higher, more
10 along the lines of, perhaps, \$8.00 a watt?

11 A. That's correct.

12 Q. Okay. And, lastly, you were talking about the NC
13 Green Power program. And it was my understanding
14 that the NC Green Power program offers a five-year
15 contract at a fixed price. Are you perhaps aware
16 of that?

17 A. No. That was not my understanding. I will say
18 that even if there--even a five-year contract at
19 that price would not be enough to stimulate
20 significant investment in my experience.

21 Q. Okay. Thank you.

22 MS. NICHOLS: Nothing further.

23 COMMISSIONER JOYNER: Redirect?

24 MS. COMPTON: I just have one question.

1 COMMISSIONER JOYNER: Okay. Can someone
2 give Ms. Compton a mic?

3 REDIRECT EXAMINATION BY MS. COMPTON:

4 Q. You've been talking about the NC Green Power
5 program in answering questions from Mr. Cavros and
6 Ms. Nichols. Is the significance of that the fact
7 that the NC Green Power program is not structured
8 in a way that you think will increase investment in
9 North Carolina, and that, therefore, it's not a
10 valid argument as to why Duke should not allow for
11 more private or non-utility-owned facilities?

12 A. That's exactly right.

13 MS. COMPTON: Thank you.

14 COMMISSIONER JOYNER: Questions from the
15 Commission?

16 (NO RESPONSE.)

17 COMMISSIONER JOYNER: Dr. Starrs, thank
18 you. Ms. Compton, would you like to move admission
19 of the three exhibits attached to the prefiled?

20 MS. COMPTON: Yes, please.

21 COMMISSIONER JOYNER: Without objection,
22 those three exhibits are admitted into evidence,
23 and you are excused, Dr. Starrs.

24 THE WITNESS: Thank you very much.

1 (WITNESS EXCUSED)

2 (STARRS DIRECT EXHIBIT NOS. 1 THROUGH 3

3 WERE ADMITTED INTO EVIDENCE.)

4 COMMISSIONER JOYNER: Call your next
5 witness.

6 MS. COMPTON: Carrie Cullen Hitt.

7 (WHEREUPON, CARRIE CULLEN HITT WAS CALLED AS A
8 WITNESS, DULY SWORN, AND TESTIFIED AS FOLLOWS:)

9 DIRECT EXAMINATION BY MS. COMPTON:

10 Q. Would you please state your full name for the
11 record?

12 A. It's Carrie Cullen Hitt.

13 Q. And where are you employed?

14 A. I'm President of the Solar Alliance.

15 Q. And would you please state for the Commission what
16 your duties and responsibilities are of the Solar
17 Alliance. Describe a little bit about your
18 background.

19 A. Sure. As President of the Solar Alliance, I run a
20 national trade association which is made up of a
21 number of providers in the solar industry. My--as
22 my background, I've been in the energy business for
23 the past 20 years. Half of that, and most
24 recently, as Vice President of Regulatory Affairs

1 for Constellation NewEnergy.

2 Q. Prior to appearing here today, did you cause to be
3 filed with the Commission 12 pages of prefiled
4 direct testimony?

5 A. Yes, I did.

6 Q. Were there any exhibits attached to your testimony?

7 A. No, there were not.

8 Q. There was Attachment A, your--

9 A. Oh, I apologize.

10 Q. --curriculum vitae.

11 A. Yes, excuse me. My--I believe my resume was
12 attached as Attachment A.

13 Q. Correct. Do you have any changes to your prefiled
14 direct testimony?

15 A. I do not.

16 Q. If I were to ask you today the same questions that
17 are in your prefiled direct testimony, would your
18 answers be the same?

19 A. Yes, they would be.

20 MS. COMPTON: Commissioner Joyner, I ask
21 that the prefiled direct testimony of Carrie Cullen
22 Hitt and the exhibit attached thereto marked as
23 Attachment A be copied into the record as if read
24 or given orally here today.

1 COMMISSIONER JOYNER: That is allowed.
2 MS. COMPTON: Thank you.
3 (THE PREFILED DIRECT TESTIMONY OF CARRIE
4 CULLEN HITT WILL BE COPIED INTO THE
5 RECORD AS IF GIVEN ORALLY FROM THE
6 WITNESS STAND.)

1 * * * * *
2

3 **Q: Please state for the record your name, position, and business address.**

4 A: My name is Carrie Cullen Hitt. I am President of the Solar Alliance. My business
5 address is 132 Front Street, Scituate Massachusetts. My mailing address is PO Box 534,
6 North Scituate, Massachusetts 02060.

7
8 **Q: Please describe your experience and qualifications.**

9 A: My experience and qualifications are described in my *curriculum vitae*, which is
10 Attachment A to this testimony. I have experience and knowledge with respect to the
11 matters to be decided in this case. As the former Vice President for Regulatory Affairs at
12 Constellation New Energy, I was involved in or oversaw participation in numerous cases
13 throughout the United States related to utility retail rates and cost recovery. In addition, I
14 am familiar with policies and industry frameworks that ensure competition among
15 industry participants, particularly as they relate to the treatment of utility-owned
16 generation. With respect to solar issues, I am familiar with the technical and economic
17 characteristics of the solar photovoltaic (PV) industry. In addition, as an owner of a new
18 solar energy rooftop system, I am aware of the myriad technical and cost issues from the
19 consumer's perspective.

20

21 **Q: Please summarize the recommendations you present in this testimony.**

22 A: My testimony recommends that NCUC not limit ownership of PV systems in any
23 market segment to any particular entity or market participant. Rather, in order to support
24 North Carolina's ongoing efforts aimed at helping PV achieve grid parity, NCUC should

25 encourage a wide range of ownership structures to maximize both
26 competition and innovation in the solar PV industry and thereby maximize the use of
27 solar energy. Specifically, NCUC should require that Duke establish a long-term contract
28 price for the solar renewable energy certificates (RECs) obtained through this program,
29 and make that same price available to non-utility, third-party customers alongside the
30 Duke-provided program.

31
32 Policies should support the deployment of large, utility scale projects as well as smaller,
33 distributed generation. Programs and policies that maximize competition and innovation
34 are critical to encouraging deployment of PV in North Carolina.

35
36 Q: Do you agree with Duke's statement that a utility-owned solar PV distributed
37 generation program of this size will enable Duke to develop competency as an owner
38 of renewable assets, leverage volume purchases . . . facilities?

39
40 Yes, the Solar Alliance agrees that a utility-owned PV distributed generation
41 program will enable the Company to learn more about solar PV. The solar PV
42 market and industry, however, is broader than utility-owned systems. As stated
43 earlier, customer-owned and third party owned systems are also viable models.
44 Encouragement of alternative ownership models will result in a more diverse
45 experience in terms of types of technology deployed, location of facilities, number
46 and types of market participants/providers. Duke will learn considerably more if
47 deployment of other models is also encouraged.

48 Q: Does Duke's Proposal Exclude Other Models for the Future Development of the
49 Solar PV market in Duke Territory?

50

51 Yes, in part. The Solar Alliance supports Duke's interest in promoting utility-owned
52 solar PV. However, the size of the Duke program as proposed is such that (in
53 combination with the existing utility-scale solar projects proposed by the Company),
54 it could represent the entirety of the solar market in Duke territory for the foreseeable
55 future.

56

57 Promoting utility-owned solar PV to the exclusion of other ownership models is
58 detrimental to future development of the industry, because it would result in only
59 one type of ownership model being deployed. This situation would eliminate any
60 possibility of competition and reduce supplier interest in the market. Competition
61 among ownership models, providers, installers, etc. is essential to meet some of the
62 State's goals for renewable energy production. In its application, Duke states that its
63 proposed program would 1) meet the demands of customers, 2) enable Duke to learn
64 more about solar PV, and 3) enable Duke to build relationships with PV developers,
65 etc.¹ Although laudable, all of these goals would be better served with a program
66 that encouraged customer and third-part ownership of solar energy systems.

67

68 In promoting only the utility-owned model, Duke assumes that customers only
69 want utility owned solar. For example, the Company proposal will keep all RECs

¹ Application of Duke Energy Carolinas, Inc. LLC for Approval of a Solar Photovoltaic Distributed Generation Program and for Approval of Proposed Method of Recovery of Associated Costs (Duke App.), at 4.

created as a result of this program. In many cases, however, customers would like to keep RECs so they may lay claim to their environmental benefits. A third scenario would allow developers to provide financial payment to customers in order to purchase and own the RECs. If the utility-owned model were the only model in North Carolina, these potential options would not be available to customers.

It is also obvious that Duke would learn a great deal more about solar energy production if more than one model of ownership were employed.

As for building relationships with providers, it is Solar Alliance's experience that many providers support the use of different models. Duke's proposal would limit its experience with providers.

Q: Do you support Duke's proposal to identify, collect, and analyze the similarities and differences in local requirements which Duke hopes will yield benefits including, but not limited to the following:

- Development of standardized requirements for PV system installation
- Reduced administrative burden for utilities and installers;
- Lower installed costs as installation efficiencies are gains; and

92 ○ Education and familiarization with solar PV solar facility installation
93 for local inspection authorities?

94

95 The Solar Alliance supports Duke's proposal to collect data and other key
96 information to learn more about the economic and physical impacts (positive and
97 negative) of solar PV facility installations. We also support utility efforts to educate
98 local building code officials so that solar installations can be installed effectively and
99 efficiently with the lowest overall costs to North Carolina consumers.

100

101 **Q: Should Duke Be Required to Collect the Same Information from Facilities**
102 **Owned by Customers or Third Parties?**

103

104 I recommend that the same data be collected from systems that are not owned by
105 Duke. In fact, Duke is likely to gather more comprehensive information if it
106 encourages and permits non-utility-owned systems and collects information from
107 those systems as well. In order to facilitate this, in exchange for its payment for
108 RECs, Duke could require any customer or third party owned system to install
109 necessary data equipment, preferably at Duke's expense.

110

111 **Q: Should Duke be required to make Public, via the NCUC, the Findings of the**
112 **Information Collected as referenced in Section 17 of its Application?**

113

Yes. As Duke itself points out, the data and related information collected could yield benefits including reduced administrative burden for utilities and installers and lower installed costs. Installers, manufacturers, and other market participants may use such information to modify practices and seek system improvements.

Q: Does Duke's Requirements for Vendor Participation in the Utility-Owned Program Limit the Interest of Some Potential Providers, and Thereby Limit Private Investment in Solar Energy?

Yes, it could in several ways. The Company states that it may issue a competitive solicitation to fulfill its needs.² The Solar Alliance supports this effort but notes that one solicitation has already been issued and a contract awarded early this year.

In effect, the Duke program solicits contractors to construct systems on facilities identified by Duke, using a finance model supplied by Duke; there is some suggestion in the discussion of volume purchasing and the like that the contractors will even be using materiel supplied by Duke. Again, this will discourage competition in the field and ultimately negatively affect Duke's ratepayers. At the least, Duke should allow solar equipment suppliers to meet competitive solicitations by doing what they do best while Duke focuses on providing brand identification, scale of operations, rate supported financing, etc.

² Duke App., at 7.

136 Duke's approach will no doubt result in some growth in the business of solar
137 contracting and installation in Duke's territory, a commendable outcome. However,
138 under this scenario *only* the installation component of the industry would be
139 developed because it would be apparently impossible or unnecessary for contractors
140 to develop their own customers – stunting development of sales, marketing, finance,
141 and other key components of the industry.

142

143 In fact, Duke's proposal, intended to increase investment in solar energy, may limit
144 most if not all private investment in favor of public utility investment. As designed,
145 the Duke proposal for the creation of 20MW of solar power would not include any
146 private investment and apparently will exhaust the available RECs. Such a system
147 will discourage other entities from participating in and developing solar energy in
148 North Carolina.

149

150 As opposed to a more traditional project model, wherein a private developer
151 provides value-added in all phases of project development (sales, marketing, design,
152 finance procurement, construction, operations and maintenance,) the Duke proposal
153 would place the majority of the value stream within the sphere of utility control.
154 Further, the utility customer hosting the solar system would bring no financial
155 resources to the table; in fact, it would receive additional utility money, in the form
156 of the yet to be determined lease payment from Duke.

157

158 Q: Do you concur with Duke's assertion that its commercial deployment of solar
159 distributed generation will promote "faster, larger, and coordinated installations as
160 opposed to sporadic installations by individual owners?"

161

162 A: Not as stated. The choice is not simply between sporadic, individual installations
163 on the one hand, and the Duke program on the other. In fact, if Duke's program
164 foreclosed on customer use of RECs, it would prevent the expansion into North
165 Carolina of some of the largest and most expeditiously and best-coordinated
166 installations of solar energy to date. Significantly, several individual solar clients
167 (very large retailers) have programs underway that are of a scale comparable to the
168 entirety of the Duke program including:

169

170 • Kohl's Department Stores, with 63 California stores and more than 25 MW
171 of total capacity underway with Sun Edison, LLC
172 (<http://www.sunedison.com/images/press/092607-kohls.pdf>)

173

174 • Macy's, Inc. with 28 stores and 8 MW of capacity with SunPower
175 Corporation),
176 (<http://investors.sunpowercorp.com/releasedetail.cfm?ReleaseID=266457>),

177

178 • Wal-Mart with 22 stores producing 10 MW with SunPower, SunEdison, and
179 BP Solar) (, <http://walmartstores.com/FactsNews/NewsRoom/6442.aspx>)

180

- Safeway Stores with 23 locations with Solar Power Partners, LLC)
(http://shop.safeway.com/corporate/safeway/windenergy/solar_stores_release.pdf)

On the residential side, similarly significant, rapid, and systematic installations are becoming commonplace. (See <http://www.sunpowercorp.com/For-Homes/Homebuilders/New-Home-Communities.aspx> or <http://www.ocrsolarandroofing.com/en/homebuilders/solar-communities.php> for a list of more than 78 residential developments where either 100% of homes are solar – powered, or where it is an option on all available homes). These residential systems, developed by Solar Alliance members SunPower Corporation and BP Solar (in BP's case, through exclusive partner OCR Solar & Roofing), were systematically and rapidly built using standardized techniques and in partnership with leading production homebuilders.³

However, these efficient large scale solar deployment programs could not be employed in Duke's territory under the contemplated program, for the simple reason that all available solar RECs would have been consumed, and thus the only economically competitive way to obtain rooftop solar energy would be through

³ These homebuilders include Atherton Homes, Castle & Cooke, Centex, Christopherson, Community Dynamics, Davidson Communities, D.R. Horton, Elliott Homes, Grupe, Heartwood Communities, Hugh Futrell, JKB Homes, Kirk Enterprises Lennar, Mertiage, Pardee, Pinn Brothers Fine Homes, Ponderosa Homes, Premier Homes, , Shea Homes, Standard Pacific, Tim Lewis Communities, Homes by Towne, William Lyon Homes, Wilson Homes, and Woodside homes.

200 Duke's program.⁴ Because this leaves little or no room for a contractual or
201 developer relationship other than that between Duke and the end use customer, there
202 is no ability to leverage the national programs described above (with their specialized
203 financing and construction terms, negotiated with each host customer according to
204 their varying facilities and requirements.)

205

206 Under Duke's proposal there would be a potentially significant loss of efficiency, as
207 it precludes the employment of those customers most familiar with streamlined, pre-
208 existing arrangements between solar developers and their customers. Several
209 national solar developers have already negotiated agreements with host customers
210 that contemplate myriad contract terms, any one of which could introduce
211 unforeseen delay in the implementation of Duke's proposed programs.

212

213 The existing contractual understandings and rapid deployment programs already in
214 place are not workable in a program where a customer merely leases its roof space
215 for a utility-owned power plant.

216

217 In my opinion, then, the Duke program is a significant improvement over "sporadic
218 installations by individual owners" and should in fact be approved on that basis. It
219 should not, however, be permitted to serve as the sole means of obtaining rooftop
220 solar in Duke's territory, thereby foreclosing existing national customer – developer

⁴ In the specific case of residential integrated construction, it is difficult to contemplate how Duke's proposal could adequately accommodate them.

221 relationships that are to date the best example of "larger and coordinated"
222 installations.

223

224 Approval of Duke's Proposal should be accompanied with a NCUC directive that
225 Duke continue to expand its exploration of various business models beyond the
226 utility ownership in the distributed solar market.

227

228 Does this conclude your testimony?

229 Yes.

1 (HITT ATTACHMENT A WAS MARKED FOR
2 IDENTIFICATION AND ADMITTED INTO EVIDENCE.)

3 Q. (By Ms. Compton) Ms. Hitt, did you prepare a
4 summary of your prefiled direct testimony for
5 presentation today?

6 A. Yes, I have.

7 MS. COMPTON: Okay. Again, we are happy
8 to waive reading of that and ask that it be entered
9 into the record.

10 COMMISSIONER JOYNER: Without objection,
11 the summary will be entered into the record without
12 the witness having to read it orally from the
13 stand.

14 (THE SUMMARY OF THE PREFILED DIRECT
15 TESTIMONY OF CARRIE CULLEN HITT WILL BE
16 COPIED INTO THE RECORD AS IF GIVEN ORALLY
17 FROM THE WITNESS STAND.)

**SUMMARY OF TESTIMONY OF CARRIE CULLEN HITT ON BEHALF OF
INTERVENOR THE SOLAR ALLIANCE**

Docket No. E7, Sub. 856

My testimony on behalf of The Solar Alliance recommends that the North Carolina Utility Commission (NCUC) not limit ownership of photovoltaic (PV) systems in any market segment to any particular entity or market participant. Rather, in order to support North Carolina's ongoing efforts aimed at helping PV achieve grid parity, NCUC should encourage a wide range of ownership structures to maximize both competition and innovation in the solar PV industry and thereby maximize the use of solar energy. Specifically, NCUC should require that Duke establish a long-term contract price for the solar renewable energy certificates (RECs) obtained through this program, and make that same price available to non-utility, third-party customers alongside the Duke-provided program.

NCUC policies and actions should support the deployment of large, utility scale projects as well as smaller, distributed generation. Programs and policies that maximize competition and innovation are critical to encouraging this deployment of PV in North Carolina.

1 MS. COMPTON: And the witness is now
2 available for cross examination.

3 COMMISSIONER JOYNER: Intervenors? Mr.
4 Cavros?

5 CROSS EXAMINATION BY MR. CAVROS:

6 Q. Good afternoon, Ms. Hitt. Just one quick question
7 for you, if I could. In your summary, you state
8 specifically the Commission should require that
9 Duke establish a long-term contract price for solar
10 renewable energy certificates obtained through this
11 program and make that same price available to non-
12 utility third-party customers alongside the Duke
13 provided program. Earlier today, Mr. Smith
14 referred to a standard offer contract that the
15 company was developing. Were you here for that
16 testimony?

17 A. I believe I heard part of it, yes.

18 Q. Okay. Great. Yeah, it was--basically, it was
19 going to be discretionary in nature and on an as-
20 needed basis, and I was wondering if that was a
21 viable option for you?

22 A. It would be. I think that the concern, again, is
23 that, as the application is currently written, it
24 is not something that is--seems to be guaranteed

1 that would occur. And I think we heard earlier
2 today that it could be in development for up to a
3 year or so. So, while the concept is there, I
4 would like to see some more certainty around that
5 it would actually occur and sooner rather than
6 later.

7 Q. Okay.

8 MR. CAVROS: No further questions.

9 MR. CHAMBERLAIN: No questions.

10 MR. OLSON: I have no questions.

11 COMMISSIONER JOYNER: Mr. Green?

12 MR. GREEN: No questions.

13 COMMISSIONER JOYNER: Mr. Gillam?

14 MR. GILLAM: No questions.

15 COMMISSIONER JOYNER: Duke?

16 MS. NICHOLS: Thank you.

17 CROSS EXAMINATION BY MS. NICHOLS:

18 Q. Ms. Hitt, it's fair to say, isn't it, that the
19 Solar Alliance is supportive of utility-owned solar
20 generation, correct?

21 A. Yes, in part.

22 Q. Okay. And, in fact, on the front page of the Solar
23 Alliance website, it says that forward-thinking
24 utilities can use solar energy to increase

1 shareholder value by creating new revenue sources
2 and increasing rate-based assets. Are you aware of
3 that?

4 A. Yes, I am.

5 Q. And I'll ask you the same question I asked of Dr.
6 Starrs. Looking at page 3 of your testimony, line
7 29--

8 A. Uh-huh.

9 Q. --is your proposal a mandatory REC purchase
10 obligation?

11 A. Ideally, yes.

12 Q. And so when you made that recommendation, you were
13 not aware that this Commission had already decided
14 that a mandatory REC option--there was not a
15 mandatory obligation for utilities to purchase
16 RECs, correct?

17 A. In that--yes.

18 Q. And turning to page 4 of your testimony, at line
19 58, you criticize promoting utility-owned solar PV
20 to the exclusion of other ownership models; is that
21 fair? That's what you state there?

22 A. Yes. The issue at hand--and this is the bulk of my
23 testimony--is programs that solely depend on
24 utility ownership only to the exclusion of any

1 other ownership model would be detrimental to the
2 development of the PV market.

3 Q. And then on page 5, at line 70, you suggest that
4 Duke--I'm sorry--yeah, oh, it's--they must be--

5 A. Yeah, they go--the numbers--

6 Q. I'm sorry. My co-counsel is trying to help me. On
7 page 5, line 70, you do suggest, in fact, that Duke
8 is promoting a utility-owned--is only promoting the
9 utility-owned model, correct?

10 A. For this application, yes. And the issue--at least
11 the initial application was of such a significance
12 size, under 20 megawatts, and indeed, with the--
13 even with the adjustment--at that size, if you're
14 only going to do a utility-owned program, it would,
15 in effect, really exclude other market models from
16 developing.

17 Q. But are you aware that Duke has entered into a PPA
18 with one of your board members, SunEdison?

19 A. Absolutely, I'm aware. Yes. But that's outside of
20 this application, as I understand it.

21 Q. So Duke, in fact, is not solely advocating a
22 utility-only model?

23 A. Not solely. But under this application, and even
24 in conjunction with that other model, you would

1 only have two types of models in place. And if
2 Duke were to ultimately end up with only a handful
3 of providers, you'd really end up with only a
4 handful of people in the market in North Carolina--
5 entities in the market, excuse me.

6 Q. Are you aware that in August 2008 Duke issued an
7 RFP for solar suppliers to participate in
8 implementing this program should it be approved?

9 A. Yes.

10 Q. And are you aware that at least five of the Solar
11 Alliance members have submitted notices of intent
12 to bid in that RFP?

13 A. Yes, I am aware.

14 Q. Okay. Turning to page 9 of your testimony, on
15 pages 9--I'll wait for you to get there--on pages 9
16 and 10 of your testimony, you discuss large
17 retailer projects involving Kohl's, Macy's, Wal-
18 Mart, and Safeway Stores, correct?

19 A. Yes.

20 Q. And all of these projects are located in either
21 California or Hawaii, correct?

22 A. The ones listed here, yes. That's correct.

23 Q. And are you aware that the average rate for
24 commercial customers in California is about 14

1 cents?

2 A. Yes. I'm well aware of that.

3 Q. And in Hawaii it's 21 cents?

4 A. Yes.

5 Q. And are you aware of the average commercial rate
6 for Duke customers?

7 A. I think I know what it is on an average.

8 Q. Would you accept 6.5 cents?

9 A. I was going to say 6 to 8 cents, yes.

10 Q. And so, as I believe Dr. Starrs testified, one of
11 the significant factors in evaluating whether to
12 install a solar PV system is the cost that the
13 customer would offset by not having to pay--by
14 offsetting their electric usage, correct?

15 A. Yes. That is one of the factors, yes.

16 Q. And are you also aware that California law allows
17 customers such as Kohl's and Macy's to purchase
18 solar power from third-party suppliers like
19 SunEdison and SunPower?

20 A. Yes, I am.

21 Q. And the regulatory framework in this state would
22 not permit that model?

23 A. I am aware of that.

24 MS. NICHOLS: Nothing further.

1 COMMISSIONER JOYNER: Redirect?

2 MS. COMPTON: No. I have no questions.

3 COMMISSIONER JOYNER: Questions from the
4 Commission?

5 (NO RESPONSE.)

6 COMMISSIONER JOYNER: Thank you, Ms. Hitt.
7 You are excused.

8 THE WITNESS: Thank you.

9 (WITNESS EXCUSED)

10 MS. NICHOLS: Oh, at this point, do we--
11 are we planning to recall Ms. McManeus?

12 COMMISSIONER JOYNER: I think--

13 MR. OLSON: If I may, Commissioner, Ms.
14 Day actually has to be in Wilmington tomorrow--or
15 actually, Wrightsville Beach.

16 MR. KAYLOR: Well, I want to be in
17 Charlotte tomorrow.

18 COMMISSIONER JOYNER: At the--at the bench
19 conference, Mr. Olson did indicate that he wanted
20 to get his witness up today, as does everybody.
21 Does Duke object to Ms. Day going?

22 MS. NICHOLS: We don't object.

23 COMMISSIONER JOYNER: Okay.

24 MR. OLSON: I'll make it quick.

1 COMMISSIONER JOYNER: Call your witness.

2 MR. OLSON: Rosalie Day.

3 MR. GILLAM: Your Honor, could we--I don't
4 know if this is the right time to raise the issue--
5 it seems like it's not.

6 COMMISSIONER JOYNER: No, it isn't. But
7 at the first opportunity, I'll give you a sign.

8 (WHEREUPON, ROSALIE DAY WAS CALLED AS A WITNESS,
9 DULY SWORN, AND TESTIFIED AS FOLLOWS:)

10 DIRECT EXAMINATION BY MR. OLSON:

11 Q. Good afternoon, Ms. Day. Would you please state
12 your name for the record, please?

13 A. Rosalie Day.

14 Q. And would you state where you are currently
15 employed?

16 A. The North Carolina Sustainable Energy Association.

17 Q. Okay. And can you just briefly describe what the
18 North Carolina Sustainable Energy Association does.

19 A. NCSEA works to ensure a sustainable future by
20 promoting renewable energy and energy efficiency in
21 North Carolina through education, public policy and
22 economic development.

23 Q. Just--well, I'd like to make two clarifications.

24 Is NCSEA strictly a solar advocacy group?

1 A. NCSEA is technology-neutral and supports rules to
2 make all renewable energy technology markets viable
3 in North Carolina.

4 Q. Okay. And can you just please quickly explain for
5 the Commission what your duties and
6 responsibilities are at NCSEA.

7 A. I'm the Policy Director. My role is to formulate
8 sustainable energy policy based on research,
9 analysis and best practices. I'm an expert in
10 renewable energy certificates, creation markets and
11 tracking systems.

12 Q. Okay. Prior to appearing today, did you cause to
13 be filed with the Commission on October 8th, 2008,
14 nine pages of prefiled direct testimony?

15 A. Yes.

16 Q. And would you like to make any kind of global sort
17 of clarification with regard to using certain
18 terminology in your testimony? Specifically, I'm
19 referring to the terms "private investor" and
20 "private investment."

21 A. Yeah. When I refer to private investment in my
22 testimony, I did not include a fully-regulated
23 utility investment. That was, in my understanding,
24 the--not the policy intent of the REPS legislation.

1 Q. Okay. Thank you. Ms. Day, at this point, would
2 you like to make any changes to your prefiled
3 direct testimony?

4 A. Yes. I would--I'd like to make a change. On page
5 9, line 26, replace the word "not" with "should be
6 seeking," and start a new sentence with "The
7 appropriate measure of incremental costs should
8 be." And then deleting the bundled energy price
9 less the avoided cost, again including the avoided
10 energy and capacity cost, plus the, and inserting,
11 the new distributed generation programs, operation,
12 leasing and maintenance costs and research costs
13 for implementing distributed generation.

14 COMMISSIONER ERVIN: Could you read that
15 sentence as it should be corrected in its entirety,
16 please?

17 COMMISSIONER JOYNER: Well, actually,
18 before you do that--

19 COMMISSIONER ERVIN: Okay.

20 COMMISSIONER JOYNER: --could you confirm
21 for me the--the first revision is to delete the
22 word "not" and to insert the words "should be"?

23 THE WITNESS: Should be seeking.

24 COMMISSIONER JOYNER: Well, we've already

1 got seeking, right?

2 THE WITNESS: Oh, yes.

3 MR. OLSON: Seeking is already there.

4 COMMISSIONER JOYNER: Okay. And then you
5 have a period after--the sentence ends with
6 "financing." Is that--

7 THE WITNESS: Conventional power plant
8 financing.

9 COMMISSIONER JOYNER: Period?

10 THE WITNESS: Yes.

11 COMMISSIONER JOYNER: Okay. Now, forgive
12 me, Commissioner Ervin.

13 COMMISSIONER ERVIN: Go ahead.

14 COMMISSIONER JOYNER: No, no. I'm going
15 to let you finish that.

16 COMMISSIONER ERVIN: So read the sentence
17 that starts, "Because Duke."

18 THE WITNESS: Okay. Because Duke is
19 proposing to construct and own these solar power
20 plants, but should be--

21 COMMISSIONER ERVIN: Should it be, "it
22 should be"?

23 THE WITNESS: --it should be seeking
24 conventional power plant financing.

1 COMMISSIONER ERVIN: Period?

2 THE WITNESS: Yes.

3 COMMISSIONER ERVIN: And then what's the
4 next sentence as it is would stand correct?

5 THE WITNESS: Right. The appropriate
6 measure of incremental costs is the new
7 distribution generation program's operations,
8 leasing and maintenance costs, and research costs
9 for implementing distributed generation.

10 COMMISSIONER ERVIN: Try that one more
11 time.

12 THE WITNESS: Okay. The last sentence?

13 COMMISSIONER ERVIN: Yes, ma'am.

14 THE WITNESS: Okay. The appropriate
15 measure of incremental costs should be the new
16 distributed generation--the new distributed
17 generation program's operations, leasing, and
18 maintenance costs, and research costs for
19 implementing distributed generation.

20 And I would like to correct a error in
21 the testimony. It occurs on page 3, line 13. And
22 it says 1.5 - 0.5 kW. And it should say 1.5 - 5.0
23 kW direct current--

24 COMMISSIONER ERVIN: 5.0?

1 THE WITNESS: Yeah. 5.0 instead of .5.

2 Q. (By Mr. Olson) Okay. Ms. Day, is there anything
3 else you would like to do to modify or clarify your
4 prefiled testimony at this time?

5 A. No.

6 Q. Okay.

7 Q. Given the changes and modifications we've noted, if
8 I asked you the same questions today that are
9 listed in your prefiled testimony, would your
10 answers be the same?

11 A. Yes.

12 Q. Okay.

13 MR. OLSON: Commissioner Joyner, I'd like
14 to move the prefiled direct testimony of Ms. Day
15 into the record as though it had been given orally
16 from the stand.

17 COMMISSIONER JOYNER: So ordered.

18 (THE PREFILED DIRECT TESTIMONY OF ROSALIE
19 DAY, AS CORRECTED, WILL BE COPIED INTO
20 THE RECORD AS IF GIVEN ORALLY FROM THE
21 WITNESS STAND.)

OFFICIAL COPY**NORTH CAROLINA UTILITIES COMMISSION****DOCKET NO. E-7, SUB 856****FILED****OCT 08 2008**Clark's Office
N.C. Utilities Commission**DIRECT TESTIMONY OF ROSALIE R. DAY
ON BEHALF OF THE NORTH CAROLINA
SUSTAINABLE ENERGY ASSOCIATION**

1 **Q. PLEASE STATE YOUR NAME AND PRESENT OCCUPATION FOR**
2 **THE RECORD.**

3 **A.** My name is Rosalie R. Day. I am presently employed as the Policy Director of the
4 North Carolina Sustainable Energy Association ("NCSEA").

5 **Q. PLEASE DESCRIBE YOUR DUTIES AND RESPONSIBILITIES AS**
6 **NCSEA'S POLICY DIRECTOR.**

7 **A.** My duties as NCSEA's Policy Director are to formulate and communicate NCSEA's
8 positions and policy on matters related to sustainable energy. I accomplish this primarily with
9 staff and national and volunteer experts through participation in legislation and proceedings
10 before the North Carolina Utilities Commission ("Commission"), and other executive agencies
11 with jurisdiction over matters affecting sustainable energy. We are actively involved in
12 responding to requests for comments or testimony on matters related to sustainable energy and
13 interpreting Orders and developing plans on how to best implement the requirements adopted in
14 the Orders. NCSEA also, responds to legislative' actions and requests for information from the
15 General Assembly, and we respond to requests by organizations across the Southeast for input on
16 proposals related to sustainable energy programs. I am specifically responsible for ensuring that
17 NCSEA's efforts, programs and policy positions are based on the intent of the General Assembly
18 and sound public policy. I am charged with assuring that NCSEA's positions arise out of
19 rigorous legal, economic and technical analysis and reflect best practices. In this regard, it is my
20 job to understand, evaluate and promote regulatory regimens that will foster the growth of a
21 viable and reliable sustainable energy sector in North Carolina. Ultimately, I am responsible for
22 assuring that NCSEA's objectives are advanced with integrity, credibility and transparency so
23 that the Association's positions can be unconditionally relied upon by the Commission and other
24 interested parties as being based on fact and the most advanced thinking on sustainable energy.

1 To carry out my duties and responsibilities I have to know how the industry works, stay abreast
2 of technology and understand effective regulatory policies from around the country. I am
3 required to convey my expertise, via comments, testimony and other means in a clear, objective
4 way to the Commission, the public, and others interested in sustainable energy.

5 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND EMPLOYMENT EXPERIENCE.**

6 **A.** I have a Masters degree and an additional year of graduate work in Public Policy from the
7 University of Chicago. During my graduate studies, I focused on market structures. I have a
8 Bachelors degree in Public Policy from the University of North Carolina.

9
10 I worked for five years at the United States Environmental Protection Agency in a variety
11 analytical and management positions. For the last eleven years, I have been employed in the
12 electricity industry. I was the Regulatory Manager for Reliant Energy, formerly Houston Light
13 and Power, and was responsible for representing Reliant Wholesale's interest in the technical
14 market design of regional transmission organizations in states where we were interested in
15 building or acquiring generation. From that position, I was hired by Automated Power Exchange
16 ("APX") to design and market software service products to the Electricity Reliability Council of
17 Texas ("ERCOT"), the Southwest Power Pool and any transmission grid operators in the
18 Southeast. Also, I managed the team that developed the qualified power scheduling services in
19 ERCOT and the renewable energy certificates tracking system for Texas portfolio compliance.
20 Before I came to NCSEA, I was Vice-President of Wholesale Operations and Regulatory Affairs
21 for a small competitive retail electricity provider in ERCOT.

22 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NORTH CAROLINA**
23 **UTILITIES COMMISSION?**

24 **A.** Yes. I provided testimony on Progress Energy Carolinas' proposal for cost recovery under
25 North Carolina's Renewable Energy and Efficiency Portfolio Standard ("REPS" or "REPS
26 Law"), Docket No. E-2, Sub 930.

27 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY TODAY?**

28 **A.** The purpose of my testimony is to comment on Duke Energy Carolinas' ("Duke")
29 Application for Approval of a Solar Photovoltaic Distributed Generation Program (the
30 "Application") and Duke's request for the Approval of the Proposed Method of Recovery of
31 Associated Costs filed on June 6, 2008.

I. PROGRAM DESIGN, COMPONENTS AND MARKET DEVELOPMENT

Q. HOW DID YOU PREPARE FOR YOUR TESTIMONY?

A. I reviewed Duke's Application filed on June 6, 2008, the Direct Testimony of Jane L. McManeus filed on July 25, 2008, and the Direct Testimony of Owen A. Smith filed on behalf of Duke on July 25, 2008. I also had a series of discussions with representatives from Duke about the program on multiple occasions.

Q. CAN YOU SUMMARIZE YOUR UNDERSTANDING OF DUKE'S PROPOSAL?

A. Yes. According to the Application, Duke is asking for \$100 million for capital investments to install a total of 20 MW ^{Direct Current ("DC")} of solar photovoltaic distributed generation. Duke estimates that this installed DC capacity will yield 16-17 MW ^{Alternating Current ("AC")}. There are essentially three levels to the program which are based on installed system size. These levels are 0.5 – 3 MW_{DC} installed capacity ("large or utility scale"), 15kW – .5 MW_{DC} installed capacity ("medium"), and 1.5 – ^{5.6}~~0.5~~ kW_{DC} installed capacity ("small or residential"). The large projects will be installed on the premises of commercial and industrial customers. These projects may either be ground-mounted or roof-mounted installations and will comprise between 80 and 90 percent of the proposal's total capacity. The medium projects also will be installed on the premises of commercial and industrial customers. These projects may also be ground-mounted or roof-mounted installations and will comprise up to 10 percent of the proposal's total capacity. The small projects will be installed on the roofs of Duke's residential customers and could comprise up to 10 percent of the proposal's total capacity. Duke expects residential installations to number between 700 and 750 and would account for most of the installations under the proposal.

Q. HAS NCSEA DEVELOPED A POSITION AS TO THE MERITS OF DUKE'S PROPOSED PROGRAM?

A. Yes.

Q. WHAT IS NCSEA'S POSITION?

A. NCSEA has no objection to the portions of Duke's program relating to large or utility scale installations. However, NCSEA objects to the portions of Duke's program relating to medium and small scale installations, particularly installations of less than 10 kW in size.

1 **Q. WHAT IS THE BASIS FOR YOUR POSITION?**

2 **A.** Our position is based on two factors. First, utilities were regulated as vertically integrated
3 monopolies because it was in the public interest to do so. This arrangement avoided duplication
4 of electricity grids and supported the investment in central generation. Distributed generation
5 (“DG”) does not comport with that model and certain economies inherent in the traditional
6 model are not translated to DG. Second, in enacting the “REPS Law” the General Assembly
7 foresaw a market change with respect to DG. Accordingly, the REPS Law provided little
8 guidance with respect to a public utility’s building or purchasing and operating of renewable
9 energy generation facilities. Comparatively, the REPS speaks directly to the arrangements
10 involving the purchasing of renewable energy and renewable energy certificates (“RECs”) from
11 new renewable energy facilities built, owned and operated by private investors and foresaw the
12 emergence of a new renewable energy market supported by the private sector. Our conclusion is
13 that the General Assembly expected and intended for a significant portion of the energy needed
14 to meet the REPS obligations to come from private investment in sustainable energy facilities.
15 Our position is supported by the policy declaration in G.S. 62-2(a)(10) which states that the
16 creation of a REPS would further the following goals:

- 17 a. Diversify the resources used to reliably meet the energy needs of consumers in
- 18 the State.
- 19 b. Provide greater energy security through the use of indigenous energy
- 20 resources available within the State.
- 21 c. Encourage private investment in renewable energy and energy efficiency.
- 22 d. Provide improved air quality and other benefits to energy consumers and
- 23 citizens of the State.

24 Taken in its entirety, Duke’s proposal appears to touch upon subsections (a), (b), and (d) but
25 creates a barrier to (c) “private investment.”

26
27 Duke argues in its application that its proposed program will spur market development in the
28 state. NCSEA agrees that in the short-term this may be the case, and multiple small scale PV
29 installations may provide an impetus for industry growth. However, the bulk purchases at
30 reduced cost of solar equipment that Duke touts did not come to fruition in the recent request for
31 proposal for turnkey projects. Contrary to Duke’s other predictions, NCSEA believes that this

1 proposal and its precedent, if not modified, would make the regulated utilities monopoly
2 providers of small scale PV installations in North Carolina. With Duke and possibly the other
3 investor owned utilities dominating the small PV generation market and satisfying the mandated
4 solar portion of the REPS ("solar carve out" or "solar set-aside") by their own solar generation,
5 the long-term viability of the State's solar industry would be in serious jeopardy.

6
7 Moreover, the economic reasons for awarding monopoly power to electric service providers,
8 reducing duplication in the electricity grid and investing in large-scale central generation, simply
9 do not hold when it comes to small scale DG.

10
11 We submit that there are more appropriate ways, involving private investment, to stimulate long-
12 term sustained growth in this industry. Duke's meeting its entire solar carve-out obligation with
13 its own facilities would produce the opposite effect.

14 **Q. TO BE CLEAR, DOES NCSEA SUPPORT ANY COMPONENT OF DUKE'S**
15 **PROPOSAL?**

16 **A.** Yes, we support 90% of Duke's proposal. Duke should be investing in utility scale PV
17 generation because large scale generation coincides with Duke's core business. Indeed, larger
18 installations are more cost-effective on a per installed capacity basis and that benefit the
19 ratepayers. We also support Duke's assessment that DG is the wave of the future and as Duke
20 has stated as one of its goals for the PV program, we want them to acquire the experience of
21 operating reliably using solar DG of all sizes.

22
23 NCSEA respects Duke's obligation to provide cost-effective service to its customers and thus its
24 desire to be able to meet its solar REPS obligations through a mix of REC purchase agreements,
25 private capital built renewable projects and utility owned new renewable projects. Where it
26 makes sense for ratepayers for Duke to be involved in owning and operating PV DG systems,
27 NCSEA offers its support.

28
29 However, a certain amount of market share should be reserved for private investment to fulfill
30 the legislative goals of the REPS law and ensure North Carolina's solar market development.

1 **Q. WHAT FACTORS DOES NCSEA CONSIDER IN FINDING OPPOSITION TO THE**
2 **10 PERCENT OF DUKE'S PROGRAM THAT YOU DO NOT SUPPORT?**

3 A. Duke's per installed capacity cost for small projects is not as advantageous as the per
4 installed capacity for larger, utility scale, solar projects. The small to medium sized projects are
5 where the NC-based solar companies can further develop the state's PV market. The solar
6 company component of our membership is made up of both in- and out-of-state companies.
7 These companies play a variety of key roles within the solar energy market in the state.
8 Depending on their business models, they operate on a spectrum from building, owning and
9 operating large projects to specializing in small PV turnkey projects, similar to what Duke is
10 proposing. We would be artificially limiting the NC solar market either if Duke is allowed to
11 pursue owning all the small projects to meet its solar obligation or if Duke is not allowed to
12 pursue some of the small projects it is proposing.

13 **Q. CAN YOU EXPLAIN THE CONCEPT OF "PER INSTALLED CAPACITY"?**

14 A. Yes. "Per installed capacity" simply refers to the amount of cost associated with the
15 additional installed capacity from the project. In evaluating the cost per installed capacity of
16 Duke's proposal, a rough estimate would be \$100M divided by 20 MW_{DC}, which equates to
17 \$5/installed MW_{DC} of capacity.

18 **Q. WHAT DOES COST-EFFECTIVE PER INSTALLED CAPACITY MEAN TO A**
19 **DEVELOPING SOLAR MARKET?**

20 A. In general, small projects are not as cost-effective as large projects when compared on a cost
21 per installed capacity basis. On pages 13 and 14 of the Direct Testimony of Owen A. Smith filed
22 on behalf of Duke on July 25, 2008, Duke estimates the average installed cost of its residential
23 installations to be between \$8-9/watt. Duke's estimate of the average installed cost of its larger
24 installations is \$5/watt. From a ratepayer's standpoint, it would be better to have some private
25 investment shoulder the capital investment for small projects. As noted above, this arrangement
26 also would be better for the renewable energy sector as well because it allows a market for small
27 investors that might otherwise be foreclosed by Duke's presence. Indeed, that market would be
28 debilitated if Duke were allowed to meet all of its REPS requirements through its own
29 generation. This clearly was not the intent of the REPS Law as the General Assembly
30 specifically stated its goals of wanting to diversify the industry and "encourage private
31 investment in renewable energy and energy efficiency."

**Q. IN YOUR OPINION, IS EVALUATING DUKE'S PROPOSAL ON A PER
INSTALLED CAPACITY BASIS THE MOST APPROPRIATE METRIC TO
DETERMINE COST-EFFECTIVENESS?**

A. No. Different technology types are associated with various PV systems. Those different technology types produce varying amounts of energy per the amount of capacity that is actually installed. Therefore, the most appropriate metric to determine the cost-effectiveness of Duke's proposal would instead be a measurement based on the cost per kWh produced.

**Q. CAN YOU EXPLAIN HOW PRIVATE INVESTMENT CAN BE MORE COST-
EFFECTIVE FOR RATEPAYERS THAN INVESTMENT BY A UTILITY IN OWNING
RENEWABLE DISTRIBUTED GENERATION?**

A. Yes. Under Duke's proposal, ratepayers would assume all of the risk associated with the project and additional costs. These costs would include the capital investment costs, the cost of operations and maintenance, and the compensation payments made to those residential and small business customers under lease for their rooftops. Further, the ratepayers would be responsible for Duke's return on the investment.

Provided the barriers to privately funded solar development are removed, there will be a more cost-effective means for Duke to meet its compliance obligations under the REPS Law, other than Duke owning all the solar generation it needs. By owning all the solar capacity that Duke needs for compliance, it effectively creates an insurmountable financial barrier to market entry for private investors. Those investors will be deprived of the opportunity to sell solar RECs for REPS compliance to Duke, the largest electric utility in the state. Although I am not suggesting that sustaining its monopoly presence in the electricity market is the underlying goal of Duke's PV proposal, it would be the effect of the program, intended or otherwise.

**Q. WHAT ARE THE BARRIERS THAT NEED TO BE REMOVED FOR PRIVATELY
FUNDED SOLAR DEVELOPMENT?**

A. First, improving net metering rules in North Carolina would go a long way toward financial feasibility. Witness after witness at the public hearings on net metering held on September 29 and October 2, 2008 stressed that good rules allowing the energy value and REC ownership to remain with the renewable generator is critical to encouraging private investment in renewable energy. As stated by each testifying witness, without these changes, investment in PV DG

1 simply is not economically viable and the investment will not be made. Further, the market
2 diversity and private investment envisioned by the General Assembly simply will not be realized.
3 Second, there needs to be a market for RECs. Utilities could institute a REC offer program for
4 their net metering customers, similar to the program currently in place in New Mexico. The
5 combination of these policies changes, among others, would promote private solar project
6 investment, be less expensive in total and would be more in line with the General Assembly's
7 intent than a massive utility-sponsored leased residential rooftop program like the one Duke is
8 proposing. The effect of increased private investment is that ratepayers would reap the benefits
9 of diversified, indigenous and clean energy sources without paying for the bulk of the capital
10 investment and a utility's return on investment. The goal of the REPS Law equally promoted
11 diversifying the sources of energy via a balance of private and utility investment. As an essential
12 input to the state's economy, private sector investment is stimulated, jobs are created, and
13 economic growth is realized.

14 **Q. BASED ON THE INFORMATION AVAILABLE TO YOU AT THIS TIME, ARE**
15 **YOU AWARE OF HOW THIS PROPOSAL WILL IMPACT DUKE'S SOLAR SET-**
16 **ASIDE REQUIREMENTS?**

17 **A.** Yes. It is our understanding that this proposal, when coupled with Duke's existing contract
18 with SunEdison, will be in excess of Duke's solar set-aside requirements through 2015 and using
19 banked solar RECs will satisfy its compliance obligation through 2018. If Duke plans to keep
20 these assets beyond their accelerated depreciation period of five years, Duke will likely not be
21 looking to purchase additional solar RECs until at least 2018 which could in turn retard the
22 market for private investment in the interim.

23 **Q. BASED ON THE INFORMATION AVAILABLE TO YOU AT THIS TIME, HAVE**
24 **YOU FORMED AN OPINION REGARDING HOW THIS PROPOSAL MIGHT AFFECT**
25 **DUKE'S COST CAP?**

26 **A.** Yes. Based on the McManeus Testimony, page 5 lines 4 – 6, Duke expects that this program
27 "would represent roughly 40% of the annual cost cap in 2010 and 2011, declining to
28 approximately 25% in 2012 and approximately 10% in 2015." Of these estimates, between 20
29 and 40% of the program's cost are attributable to small scale projects which only account for 10
30 to 20% of the overall installed PV capacity. Therefore, to make room for more renewables under
31 the cost cap, it is essential that Duke's program be revised.

Q. BASED ON THE INFORMATION AVAILABLE TO YOU AT THIS TIME, DO YOU HAVE A RECOMMENDATION FOR THE COMMISSION AS TO THE BASIC MERITS OF DUKE'S PROPOSAL?

A. A majority of Duke's proposal is good and we are pleased that Duke has decided to invest in solar DG. The negative aspects are the non-existent opportunities for small DG investors to enter the market. They will be unable to sell their solar RECs to Duke thus being foreclosed from an essential component of the economic plan that makes investment viable as envisioned by the General Assembly. For ratepayers, Duke's proposed plan requires them to absorb the capital investments and an additional return on investment. We suggest that a more diverse approach would relieve rates payer of these burdens and the associated risk.

II. COST-RECOVERY

Q. HAS YOUR ORGANIZATION DEVELOPED A POSITION ON DUKE'S PROPOSED COST-RECOVERY OF THE PROGRAM?

A. Yes.

Q. WHAT IS YOUR POSITION?

A. Our organization contends that the avoided cost, including both capacity and energy costs, should be subtracted from the incremental costs to be recovered through the REPS rider.

Q. WHAT IS THE BASIS FOR YOUR POSITION?

A. The incremental costs are intended to cover the REC Premium and the program cost directly attributable to the program.

Q. WHAT METHOD WOULD YOU PROPOSE TO CALCULATE THE INCREMENTAL OR REC PREMIUM COSTS?

A. In a power purchase agreement for a non-utility owned renewable energy resource, the REC premium equals the bundled energy price less the avoided cost, which includes the avoided energy and avoided capacity costs. Because Duke is proposing to construct and own these solar power plants, ^{it should be} ~~not seeking conventional power plant financing.~~ ^{is the new distribution generation} The appropriate measure of incremental costs ~~should be the bundled energy price less the avoided cost, again including the avoided energy and avoided capacity costs,~~ ^{leasing} ~~plus the program's operations, and maintenance costs.~~ ^{and research costs for implementing distributed generation}

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

1 MR. OLSON: Thank you.

2 Q. (By Mr. Olson) Ms. Day, did you prepare a summary
3 of your prefiled testimony for presentation to the
4 Commission today?

5 A. Yes.

6 MR. OLSON: We're willing to waive reading
7 of the summary if that's not objectionable to
8 anybody.

9 MS. NICHOLS: No objection.

10 MR. OLSON: We did provide copies to
11 everybody.

12 COMMISSIONER JOYNER: That's right. You
13 provided them this morning.

14 MR. OLSON: Early this morning. That's
15 correct. It seems like a long time ago, and--

16 COMMISSIONER JOYNER: Without objection,
17 the reading of the summary is waived. We have a
18 new court reporter, so you probably will need to
19 provide a copy to our court reporter so that it is
20 copied into the record as if it were read from the
21 stand.

22 MR. OLSON: Thank you. I actually did
23 that before we started, so I appreciate it.

24 COMMISSIONER JOYNER: Ah, thank you.

1
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MR. OLSON: Thank you.

(THE SUMMARY OF THE PREFILED DIRECT
TESTIMONY OF ROSALIE DAY WILL BE COPIED
INTO THE RECORD AS IF IT GIVEN ORALLY
FROM THE WITNESS STAND.)

**SUMMARY OF THE DIRECT TESTIMONY OF ROSALIE R. DAY
DOCKET NO. E-7, SUB 856**

The purpose of my direct testimony is to comment on Duke Energy Carolinas' ("Duke") Application for Approval of a Solar Photovoltaic Distributed Generation Program (the "Application") and Duke's request for the Approval of the Proposed Method of Recovery of Associated Costs filed on June 6, 2008.

The North Carolina Sustainable Energy Association ("NCSEA") has no objection to the portions of Duke's proposal relating to large or utility scale installations. However, NCSEA objects to the portions of Duke's program relating to medium and small scale installations, particularly installations less than 10 kW in size.

Our position is based on two factors. First, utilities were regulated as vertically integrated monopolies because it was in the public interest to do so. This arrangement avoided duplication of electricity grids and supported investment in central generation. Distributed generation ("DG") does not comport with that same model and certain economies inherent in the traditional model are not translated to DG. Second, in enacting the "REPS Law," we conclude the General Assembly expected and intended for a significant portion of the energy needed to meet the REPS obligations to come from private investment in renewable energy facilities. Duke's proposal creates a barrier to private investment in solar because it would essentially occupy this opportunity space.

Duke argues in its Application that its proposed program will spur market development in the state. NCSEA agrees that in the short-term installations may provide a limited opportunity for certain segments of the industry to grow for entities engaged in contract installation work. However, NCSEA believes that this proposal and its

precedent, if not modified, would make regulated utilities the monopoly providers of small scale PV installations in North Carolina and would seriously jeopardize the long-term viability of the State's solar industry.

NCSEA respects Duke's obligation to provide cost-effective service to its customers and thus its desire to be able to meet its solar REPS obligations through a mix of REC purchase agreements, private capital built renewable projects and utility owned new renewable projects. Where it makes sense for ratepayers for Duke to be involved in owning and operating PV DG systems, NCSEA offers its support.

Under Duke's proposal, however, ratepayers will assume all of the risk and absorb all of the additional costs of the project. From a ratepayer's standpoint, it would be better to have some private investment shoulder the investment costs and risks for small PV projects. Also, this mix of financing and ownership would be better for the renewable energy sector. The market would be debilitated if Duke were allowed to meet all its REPS compliance obligations through its own generation. Further, if Duke were permitted to meet all its solar set-aside, the opportunity for small solar investors would be foreclosed because their RECs would have no value for a significant portion of the state's set aside obligation.

NCSEA is concerned that Duke's solar program as proposed will significantly impact Duke's cost cap. This program, coupled with Duke's project with SunEdison, will meet all of Duke's solar set-aside requirements through 2018. Further, Duke estimates between 20 and 40% of the program's costs are attributable to small scale projects which only account for 10 to 20% of the overall installed PV capacity. To make room for more and a greater variety of renewable resources under the cost cap, it is

essential that Duke's program is revised and that the market for private investment is made viable.

Provided the barriers to privately funded solar development are removed, it would be more cost-effective for Duke to meet its compliance obligations under the REPS Law by purchasing RECs generated from small PV systems. First, improvements to the net metering rules in North Carolina, that Duke is opposing, need to be passed. Witnesses at the two public hearings stressed that good rules, allowing the energy value and REC ownership to remain with the renewable energy generator, are critical to encouraging private investment in renewable energy. Second, a market for RECs needs to exist. Utilities could institute a REC offer program to their net metering customers, similar to the program currently in place in New Mexico. The combination of these policy changes, among others, would promote private solar investment, would be less expensive for ratepayers, and would be more in line with the General Assembly's intent than Duke's proposal. The ratepayers would reap the benefits of diversified, indigenous and clean energy sources without paying for the bulk of the utility's capital investment and a return on that investment.

As it relates to the cost-recovery of Duke's proposal, NCSEA contends that the appropriate measure of incremental costs to be recovered through the REPS rider should be the new distributed generation program's operations and maintenance costs.

This concludes my summary.

1 MR. OLSON: Okay. Well, the
2 Commissioners--and the witness is now available for
3 cross examination.

4 COMMISSIONER JOYNER: Okay. We will hear
5 first from the intervenors. Mr. Cavros?

6 CROSS EXAMINATION BY MR. CAVROS:

7 Q. Ms. Day, George Cavros on behalf Southern Alliance
8 for Clean Energy.

9 A. Hello.

10 Q. Hi. I just had a couple quick questions. On page 5
11 of your testimony, you say that you support 90
12 percent of Duke's proposal; is that correct?

13 A. The 90 percent that is utility-scale solar.

14 Q. And I assume that means that--I'm sorry. Go ahead.

15 A. Well, or 80 or 90. It's--they don't--they don't
16 specify that.

17 Q. Okay. Generally you believe that both utility-
18 owned solar and privately third-party-owned solar
19 is--are both important in growing the solar energy
20 industry in North Carolina and implementing solar
21 technology throughout the state?

22 A. I believe that the utility-scale solar, the medium-
23 size solar potentially from third-party or from
24 customer generators, and the small-size from

1 customer generators is essential to providing a--a
2 vibrant solar market.

3 Q. Great. Thanks. And one last question. You state
4 in your testimony that by owning all of the solar
5 capacity that Duke needs for compliance, it
6 effectively creates an insurmountable financial
7 barrier to market entry for private investors.
8 What would you propose to open up that market to
9 private investors?

10 A. Well, a combination of sort of net metering and a
11 RAC offer. We've heard here that it can't be a
12 mandated solar REC offer, but it's my understanding
13 that Duke's--

14 COMMISSIONER JOYNER: If you'll just wait.
15 We can find out whether we have an emergency.

16 (SPEAKER ANNOUNCEMENT INTERRUPTION)

17 COMMISSIONER JOYNER: Don't you feel safe
18 knowing your Commission operates this way?

19 Ms. Day, you may proceed. If you--if you
20 need your counsel to--

21 THE WITNESS: No.

22 A. It is my understanding that Duke hasn't made a REC
23 offer to a small--a small solar provider.

24 Q. (By Mr. Cavros) Okay. Thank you very much.

1 MR. CAVROS: That's all I have.

2 COMMISSIONER JOYNER: Mr. Chamberlain?

3 MR. CHAMBERLAIN: No questions.

4 MS. COMPTON: I have no questions.

5 COMMISSIONER JOYNER: Mr. Green?

6 MR. GREEN: No.

7 COMMISSIONER JOYNER: Mr. Gillam?

8 MR. GILLAM: No questions.

9 COMMISSIONER JOYNER: Duke?

10 MR. FRANKLIN: We do.

11 CROSS EXAMINATION BY MR. FRANKLIN:

12 Q. Good afternoon, Ms. Day. How are you?

13 A. Fine.

14 Q. I'm going to revisit actually the same--or a little
15 bit of the same subject that Mr. Cavros just talked
16 about. In your testimony, specifically page 5,
17 line 16, you say that NCSEA supports specifically
18 90 percent of Duke's program; isn't that right?

19 A. Yes.

20 Q. And you were present during your counsel's cross
21 examination of Witness Smith--Duke Energy Witness
22 Smith, correct?

23 A. Yes. Uh-huh.

24 Q. Well, it's a little confusing to me, because based

1 upon your counsel's examination of Witness Smith,
2 it sounded like y'all support a lot less than 90
3 percent of our program. Am I right about that or--
4 I'm not a math whiz, but if you could explain it to
5 me, that--

6 Q. Well, you know, there's 80 to 90 percent--you--
7 Duke is proposing to have 80 percent of capacity
8 from large utility-scale projects, and that--those
9 projects would be sort of cost prohibitive for 95
10 percent of other people to engage in. And so we
11 support the use of solar in utility-scale projects.
12 So I don't know if that's 90 or 80, but we support
13 that.

14 Q. Well, your testimony did say 90. I'm right about
15 that, correct?

16 A. Yes.

17 Q. All right. And in your testimony also expressed
18 some dissatisfaction with the metering rules of
19 North Carolina; am I correct?

20 A. Yes.

21 Q. And it is true that in some of the discussions that
22 you've had with Duke Energy Carolinas regarding the
23 program, you've communicated some--some
24 improvements that you'd like to see regarding those

1 rules; am I right?

2 A. That's right.

3 Q. And one of those improvements is that the customer
4 would stay on whatever retail schedule that they
5 previously were on; am I right?

6 A. That's right.

7 Q. And another is that the customer would receive one-
8 to-one retail pricing; am I right?

9 A. Yes.

10 Q. And another is that annual true-up of the excess is
11 paid at avoided cost rates; am I right?

12 A. That's what we've said.

13 Q. And another is that the customer generator would
14 own all of the RECs that they generate; am I right?

15 A. Right.

16 Q. And you heard Witness McManeus earlier today
17 testify about Duke Energy Carolinas' Rider SCG; am
18 I right?

19 A. Yes.

20 Q. And you--and you heard her testify that under this
21 rider, a customer doesn't have to be on an
22 underlying time of use demand rate; am I right?

23 A. Yes.

24 Q. And this directly addresses your position that the

1 customer should stay on whatever retail schedule
2 they previously were on; am I right?

3 A. Duke's SCG Rider does that.

4 Q. And you also heard Witness McManeus testify that as
5 a result of the offset under SCG, the customer
6 receives credit at the full bundled retail rate
7 when the customer's generator is offsetting the
8 customer's load, correct?

9 A. Correct.

10 Q. And this directly addresses your position that the
11 customer receive one-to-one retail pricing; am I
12 right?

13 A. Yes.

14 Q. And you also heard her testify that under Rider
15 SCG, when the output of the generator exceeds the
16 customer's load, and the excess is delivered to the
17 grid, the company then pays the customer the
18 company's avoided energy cost based on its improved
19 PV rate schedule, correct?

20 A. Correct.

21 Q. And doesn't this directly address your position
22 that an annual true-up, the excess is paid at
23 avoided cost?

24 A. There's a matter of the supplemental basic

1 facilities charge that's not waived, but we don't
2 have this as a--as a net metering policy or
3 statewide. And so--

4 Q. Uh-huh.

5 A. --and so Duke is--I appreciate the SCG rider.

6 Q. So as it pertains to Duke Energy Carolinas, I think
7 it's safe to say that the rider, as far--it
8 supports--directly addresses a majority of your
9 position that an annual true-up of the excess cost
10 is paid at avoided cost rates; am I right?

11 A. Yes.

12 Q. And you also heard her testify that under Rider
13 SCG, the customers or the customer generator would
14 retain all of the RECs associated with their
15 generation; am I right?

16 A. Yes, if there's a market for them.

17 Q. Fair enough. And this directly addresses, however,
18 your position that the customer should retain all
19 the RECs that they generate; am I right?

20 A. Yes.

21 Q. And one final question. You do agree, don't you,
22 that under Senate Bill-3, a utility may comply with
23 the RECs requirements by generating electric power
24 at a new renewable energy facility that it owns and

1 operates; am I correct?

2 A. Yes.

3 MR. FRANKLIN: No further questions.

4 COMMISSIONER JOYNER: Redirect?

5 MR. OLSON: I have no questions.

6 COMMISSIONER JOYNER: Questions from the
7 Commission? Commissioner--I'm sorry--Chairman
8 Finley.

9 CHAIRMAN FINLEY: Ms. Day, I heard you to
10 say that it's your interpretation that the phrase
11 "private investment" does not include public
12 utility investment. Did I hear you correctly?

13 THE WITNESS: Regulated--fully-regulated
14 utilities, yes. That does not--that doesn't
15 comport with my understanding of private
16 investment.

17 CHAIRMAN FINLEY: And what is that
18 understanding based on?

19 THE WITNESS: Um.

20 CHAIRMAN FINLEY: I mean, is it
21 something--

22 THE WITNESS: Not publicly regulated.
23 It's--a private investment would be a--I guess just
24 not publicly regulated.

1 CHAIRMAN FINLEY: Is that something that
2 you're thinking of based on the discussions leading
3 up to Senate Bill-3, or is that just your personal
4 view on that?

5 THE WITNESS: I'm not--I didn't get--I
6 had--was not really a party to the negotiations,
7 so--

8 CHAIRMAN FINLEY: All right. I think you
9 were asked some questions about Small Customer
10 Generator Rider SCG, right?

11 THE WITNESS: Yes.

12 CHAIRMAN FINLEY: And you said that one of
13 the things that you didn't like about that was that
14 the supplemental base facility charge is not
15 waived?

16 THE WITNESS: Right.

17 CHAIRMAN FINLEY: What else about that
18 rider do you not like, if anything?

19 THE WITNESS: That rider is fine. And
20 it's not statewide, but that's--that rider is fine.

21 CHAIRMAN FINLEY: Do you know whether or
22 not self generators are aware of that rider and
23 take advantage of it?

24 THE WITNESS: I don't know. I don't

1 know--I don't know if the individuals know of it.

2 CHAIRMAN FINLEY: Okay. Thanks.

3 MS. NICHOLS: I will say Duke is
4 contemplating whether we should change the name of
5 that rider so that when people do a Google search
6 on net metering, it will come up.

7 COMMISSIONER JOYNER: Further questions
8 from the Commission?

9 (NO RESPONSE.)

10 COMMISSIONER JOYNER: Questions on the
11 Commission's questions?

12 MR. OLSON: Yes, I just have a few.

13 REDIRECT EXAMINATION BY MR. OLSON:

14 Q. Ms. Day, before coming to NCSEA, did you work in
15 the electric industry?

16 A. Yes, I worked in the electricity industry for 12
17 years.

18 Q. And can you just briefly state who you worked for?

19 MR. FRANKLIN: I'd like to object. I
20 thought that these questions that Mr. Olson's--

21 MR. OLSON: It's germane.

22 MR. FRANKLIN: To what?

23 MR. OLSON: Chairman Finley spoke about
24 her understanding of what the term public

1 investor--or "private investor" was, and I'm just
2 forming a basis for her understanding--the 20 years
3 she spent in the regulated utility industry,
4 whether that formed a basis for her understanding
5 of the difference between private investment and
6 investment by a fully-regulated public utility.

7 COMMISSIONER JOYNER: Rather than you
8 gentlemen talking to each other, let me resolve
9 this by saying, Mr. Olson, why don't you just
10 simply ask the witness that question. Her
11 background, education and employment experience is
12 included in her--in her testimony, and I believe
13 she
14 indicated--

15 Q. (By Mr. Olson) Did you understand the question, Ms.
16 Day?

17 A. Yeah. I worked for a utility in Houston, and then
18 I worked for a independent power producer. And I
19 worked for a vendor to a utility or a vendor to a
20 lot of electricity providers. And I worked for a
21 competitive retailer in Texas.

22 Q. And the question is whether that--that background
23 helped form your opinion or understanding of what
24 private investment is, as opposed to investment by

1 a fully-regulated public--publicly-owned utility?

2 A. Yeah, I mean, I just think that when a utility's
3 regulated that would--that's not the intent--
4 promoting a market has to be with--not fully the
5 utilities.

6 Q. Okay. Thank you.

7 COMMISSIONER JOYNER: Okay. If there's
8 nothing else for Ms. Day, you are excused. I don't
9 recall there being any exhibits to your--

10 MR. OLSON: There weren't any.

11 (WITNESS EXCUSED.)

12 COMMISSIONER JOYNER: Okay. Now, Mr.
13 Gillam, I would hear from the Public Staff.

14 MR. GILLAM: We would request that prior
15 to Ms. McManeus resuming the stand that our
16 witnesses be allowed to proceed in light of their
17 obligation to be in Wrightsville Beach tomorrow
18 morning.

19 COMMISSIONER JOYNER: I'm going to hear
20 from Duke and hope that everybody can read from my
21 expression kind of how I feel about our noticing
22 this case for two days of hearing, and it appears
23 that--obviously, you control how long we are here.
24 And everybody seems to have made competing

1 arrangements. That's probably not a good model
2 going forward. Duke?

3 MR. KAYLOR: I would say that we've been,
4 I think, very efficient in our questions, and we
5 have not delayed this proceeding. And I think it
6 would be appropriate for our witness to finish.
7 And if he wants to expedite his cross so that he
8 finishes that witness and gets to his, I think
9 that's under his control.

10 COMMISSIONER JOYNER: Given the fact that
11 we have committed--and I think the court reporter,
12 though I was probably wrong not to check with her
13 before I committed us to go until 6:00--but given
14 that it's just about half past 4:00, I think we're
15 going to be able--if we get back on track, I think
16 we're still going to be able to finish this
17 afternoon. So I am going to direct that Ms.
18 McManeus come back and let you finish with her, and
19 then call your witnesses. So I am, in effect,
20 denying your request, Mr. Gillam.

21 (WHEREUPON, JANE McMANEUS WAS RECALLED AS A
22 WITNESS, HAVING BEEN PREVIOUSLY DULY SWORN, AND TESTIFIED
23 AS FOLLOWS:)

24 COMMISSIONER JOYNER: Ms. McManeus, you

1 are still under oath, and, Mr. Gillam, you will let
2 us know if we need to go into closed session being
3 mindful of the fact that the law requires that we
4 operate in open session except in very limited
5 circumstances. But I need you to let me know when,
6 and I need Duke to be able to help monitor that.

7 MR. GILLAM: Now, I'd like to distribute
8 an exhibit, which I'd like to have marked as Public
9 Staff McManeus Confidential Cross Examination
10 Exhibit 1.

11 COMMISSIONER JOYNER: Okay. It will be so
12 identified.

13 (PUBLIC STAFF McMANEUS CONFIDENTIAL CROSS
14 EXAMINATION EXHIBIT NO. 1 WAS MARKED FOR
15 IDENTIFICATION.)

16 MR. GILLAM: All right. I'm going to try
17 to ask non-confidential questions about this
18 confidential exhibit.

19 COMMISSIONER JOYNER: And if you feel, Mr.
20 Gillam that that's not working for you, you are
21 entitled to cross examination of this witness, and
22 you just need to let me know.

23 MR. GILLAM: Thank you, Your Honor.

24 CONTINUED CROSS EXAMINATION BY MR. GILLAM:

1 Q. As you can see, Ms. McManeus, this is a list of
2 assumptions for a hypothetical case; do you
3 understand the assumptions we're making in this
4 hypothetical case? Take as long as you need to
5 read them.

6 A. (Witness reviews document.) I think I understand
7 your assumptions.

8 Q. We are assuming that Duke is allowed to recover the
9 full cost of its program, aside from avoided costs,
10 which we assume to be \$60 per megawatt hour through
11 the REPS rider as incremental costs; isn't that
12 what the exhibit says?

13 A. Yes.

14 Q. And based on those assumptions, the incremental
15 cost of Duke's program would be the amount shown in
16 entry one after the assumptions--entry one above--
17 entry one below the word "then." And the
18 incremental cost of power from the entity
19 referenced there would be the amount referenced
20 there; would it not?

21 A. Yes.

22 Q. Duke intends to produce 15,000 megawatt hours
23 annually from its program; does it not?

24 A. Yes.

1 Q. And multiplying 15,000 by the incremental cost of
2 Duke's program, you would get the figure that's
3 shown in item two, and the incremental cost of
4 15,000 megawatt hours from the entity shown in item
5 two would be the amount shown there for a
6 difference of--and I think this is not a
7 confidential number--\$1,335,000; isn't that
8 correct?

9 A. I'm sorry. I thought you were working on the first
10 sentence in item two, and you jumped to the--

11 Q. I'm asking you to look at all of item two and
12 asking you if multiplying 15,000--

13 A. Yes.

14 Q. --megawatt hours by the incremental cost of Duke's
15 program, you get the number that is shown on, I
16 guess, the second line of item two?

17 A. It looks right.

18 Q. And multiplying 15,000 megawatt hours by the
19 incremental cost of that identified entity, you get
20 the number that is shown at the end of the third
21 line of item--of item two; do you not?

22 A. Yes.

23 Q. And the difference between those numbers is
24 \$1,335,000 as shown in the fourth line of item two;

1 is that right?

2 A. Yes.

3 Q. And if you spend the amount shown on the second
4 line of item two for the same amount of megawatt
5 hours that you could have bought for the amount
6 shown at the end of the third line of item two,
7 that gets you to the utility-wide ceiling quicker;
8 does it not?

9 A. Would you say that again, please?

10 Q. If you spend a large amount for the same amount of
11 megawatt hours that you could have bought for a
12 smaller amount, that gets you to the utility-wide
13 ceiling quicker; does it not?

14 A. Yes.

15 Q. And assuming that Duke is generating power through
16 its program at an incremental cost of the amount
17 shown on the first line of item one, and that Duke
18 hits the utility-wide ceiling for 2012, in that
19 event, at the point when Duke reaches the ceiling,
20 it would be \$1,335,000 that Duke would still have
21 had available to spend on renewable energy if it
22 had chosen to go with that other entity instead of
23 its own project; isn't that correct?

24 A. Yes.

1 Q. And based on the assumption that non-solar
2 renewable power is available at an incremental cost
3 of \$50 per megawatt hour, that would mean 26,700
4 additional megawatt hours of renewable power that
5 Duke would have been able to purchase had it chosen
6 to go with that identified entity; isn't that
7 correct?

8 A. Yes.

9 Q. And since Duke will still have to meet its customer
10 demand without the benefit of those 26,700 megawatt
11 hours of renewable power, Duke will have to
12 generate 26,700 extra megawatt hours on its own
13 system; will it not?

14 A. Yes.

15 Q. And those 26,700 megawatt hours would almost
16 totally come from fossil plants resulting in
17 increased emissions of pollutants and greenhouse
18 gases; isn't that correct?

19 A. It may be.

20 Q. That's as far as you're willing to go?

21 A. Yes.

22 Q. It would very likely be; would it not?

23 A. I don't know. I mean, it depends on what we
24 generate the--what we generate with.

1 Q. And you do not normally have nuclear or hydro on
2 the margin, do you?

3 A. Not normally.

4 Q. Thank you, Ms. McManeus. That's all the questions
5 I had except for one that I skipped over during the
6 closed session. And that question is this, the
7 information regarding the financial impact of tax
8 normalization, that did not become available to the
9 Public Staff until you--until we received your
10 testimony Monday night; is that correct?

11 A. Okay. What particular information?

12 Q. The information about the dollar impact of tax
13 normalization.

14 A. I actually don't remember the date we sent it to
15 you. If you say it's Monday, then--I just don't
16 remember.

17 Q. Okay. Thank you.

18 MR. GILLAM: That's all my questions.

19 COMMISSIONER JOYNER: Did you have any
20 redirect, Duke?

21 MR. FRANKLIN: Yes, there is.

22 REDIRECT EXAMINATION BY MR. FRANKLIN:

23 Q. Ms. McManeus, you may have covered this in your
24 response to questions from Mr. Gillam already, but,

1 however, Mr. Cavros asked you about other solar
2 options that may impact the REPS cost cap; whatever
3 types of renewable costs will be applicable to that
4 cap?

5 A. The types of renewable costs that will be
6 applicable to the cap are the ones that are deemed
7 to be incremental costs exceeding our level of
8 avoided costs. So that would be RECs, and that
9 could also be purchased power agreements, again,
10 the amount that is in excess of avoided costs.

11 Q. And if the Company were to seek to invest in
12 renewables beyond the REPS requirements, would the
13 Company need to demonstrate that such resources
14 were cost effective, as compared to conventional
15 generation resources?

16 A. I believe so.

17 Q. And would that be a part of Ms. Hager's IRP
18 process?

19 A. I believe it would.

20 Q. Mr. Gillam also asked you if you could avoid--Mr.
21 Gillam asked you if you could avoid the difference
22 for normalization related by--or related by the tax
23 normalization by purchasing from third parties, and
24 this question assumes that an equally qualified

1 third party that could provide all of the benefits
2 of the proposed program exists, doesn't it?

3 A. Yes.

4 Q. And Duke doesn't believe necessarily that third
5 party proposals could meet these requirements;
6 isn't that right?

7 A. Yes. In fact, the hypothetical case that I just
8 responded to depends on that, too.

9 Q. And also, in order to avoid the impact of tax
10 normalization as Mr. Gillam suggested, Duke would
11 have to rely 100 percent on third parties to meet
12 its solar REPS requirements; isn't that right?

13 A. That's right.

14 Q. Also, when you first looked at Public Staff Cross
15 Examination Exhibit Number 1, it appeared that you
16 had some concern about it as far as I could read
17 it. Are there any issues with this hypothetical
18 example that you wanted to talk about?

19 A. Yes, my concern was its relevance, because, again,
20 as I just stated, it assumes that we would be safe
21 in relying entirely on third party renewable
22 purchases to meet our obligation, which begins in
23 2010. And I also think it is--doesn't sufficiently
24 acknowledge that the REPS recovery mechanism is

1 the--is the given mechanism for recovery of costs
2 that comply with the REPS standard, and that costs
3 that would not be recovered through that mechanism
4 could arguably be circumventing the intended cost
5 cap.

6 Q. All right. And earlier Mr. Gillam represented, I
7 guess, to us here that the Public Staff didn't
8 receive the information about the tax normalization
9 issues or requirements until Monday night; am I
10 right? Do you remember that?

11 A. Yeah, I do remember that the--our initial estimates
12 of costs provided to the Public Staff did not
13 include the corrections for the federal tax
14 credits, and I just didn't remember the time that
15 we sent them.

16 Q. Right. But do you remember sending an email, you,
17 yourself, on Thursday, October 16th to the Public
18 Staff, including Bob Gillam, about the impacts on--
19 potential effects of the tax normalization
20 requirements?

21 A. Which Thursday?

22 Q. Thursday, October 16th about three or four days
23 before Monday, October 20th.

24 A. Truthfully, I don't remember. But if you have a

1 copy of my email, I could certainly tell you if
2 that was my email.

3 MR. GILLAM: Well, I will acknowledge that
4 we did receive a brief email about that, and it did
5 reflect the tax normalization briefly.

6 COMMISSIONER JOYNER: Thank you, Mr.
7 Gillam. Proceed, Mr. Franklin.

8 MR. FRANKLIN: Just one last question.

9 Q. (By Mr. Franklin) So to follow up, did you provide
10 this information to the Public Staff as soon as it
11 was available to you?

12 A. Yes, I did. We try to respond to the Public
13 Staff's data request questions as timely as
14 possible.

15 MR. FRANKLIN: No further questions.

16 COMMISSIONER JOYNER: Questions from the
17 Commission. The right side of the room is leaning
18 forward, so--

19 CHAIRMAN FINLEY: I have one or two.

20 COMMISSIONER JOYNER: Mr. Chairman?

21 CHAIRMAN FINLEY: If the Commission were
22 to agree with the Public Staff and cap the cost
23 recovery as they advocate of your distributed
24 generation program, would Duke proceed with the

1 project as presently designed or not?

2 THE WITNESS: I don't think so. I would--
3 certainly, I don't make those decisions. But, you
4 know, my opinion is that, you know, that would be
5 something that we would not think was appropriate
6 to pursue.

7 CHAIRMAN FINLEY: In your opinion, would
8 you modify the program, or would you withdraw it
9 all together?

10 THE WITNESS: I don't know.

11 COMMISSIONER JOYNER: Commissioner Ervin?

12 COMMISSIONER ERVIN: Ms. McManeus, if we
13 can look at your rebuttal testimony at page 5,
14 lines 14 to 16, please.

15 THE WITNESS: (Witness complies.)

16 COMMISSIONER ERVIN: I believe you covered
17 most of this with intervenor counsel, but I just
18 want to make absolutely sure that I understand
19 fully before we close the record.

20 The material that I directed your
21 attention to is where you state the revised
22 estimate of incremental program costs expected to
23 be recovered through the REPS rider, right?
24 Correct?

1 THE WITNESS: Yes.

2 COMMISSIONER ERVIN: That figure is not
3 proprietary?

4 THE WITNESS: No, it is not.

5 COMMISSIONER ERVIN: Okay. At least the
6 way I read your testimony, that is an annual cost
7 that is to occur every year during the life of the
8 program, give or take a little bit?

9 THE WITNESS: Yes, that's the annual cost
10 that would recur once the full \$50 million
11 investment was in place.

12 COMMISSIONER ERVIN: All right. In
13 calculating that, the total cost that would be
14 incurred every year would be this 2.7 million
15 amount plus the avoided capacity and energy costs?

16 THE WITNESS: That's right.

17 COMMISSIONER ERVIN: And last, if I
18 understood your testimony earlier with respect to
19 the recovery of avoided capacity and energy costs,
20 I took your answers to mean that, while you weren't
21 sure this was particularly a good policy outcome,
22 you believe that the avoided energy and capacity
23 costs would be recovered through base rates?

24 THE WITNESS: Yes, that's correct.

1 COMMISSIONER ERVIN: Because there was no
2 explicit language in the fuel statute that dealt
3 with avoided capacity and energy costs associated
4 with utility-owned generating facilities?

5 THE WITNESS: That's correct.

6 COMMISSIONER ERVIN: Now, in calculating
7 the total cost, which would be this 2.7 million
8 plus the avoided capacity and energy costs, that's
9 an all-in annual figure that would include recovery
10 of capital, on capital, O&M expenses, labor,
11 everything, right?

12 THE WITNESS: That's right.

13 COMMISSIONER ERVIN: So that, even though
14 there's no fuel cost associated with that figure,
15 there are some O&M costs and other costs of that
16 nature in--

17 THE WITNESS: That's true.

18 COMMISSIONER ERVIN: --the calculation of
19 that figure?

20 THE WITNESS: Yes, sir.

21 COMMISSIONER ERVIN: Now, it seems to me
22 that the way--at least the way you've got the
23 program structured, we are talking about a--talking
24 about a utility investment. I believe we've had

1 some prior testimony that the estimated useful life
2 of these facilities is approximately 25 years, and
3 I'm not really very interested in getting into
4 whether it's 20 or 25 or whatever. At least, it's
5 the Company's expectation that whatever the
6 appropriate number is that the cost associated with
7 that facility would remain in rates as long as that
8 facility was used for purposes of providing
9 service, right?

10 THE WITNESS: Right.

11 COMMISSIONER ERVIN: I asked, I believe,
12 Mr. Smith, what would happen in the event that the
13 lease was terminated and the equipment was no
14 longer used, and I think he said that Duke first of
15 all would try to see if we could find some other
16 place where we could put it, right?

17 THE WITNESS: Right.

18 COMMISSIONER ERVIN: And which my
19 assumption would be that, in the event that
20 something like that occurred, that the cost at the
21 new location would still be considered in
22 calculating the annual amounts to be recovered in
23 rates through base rates and the REPS rider, right?

24 THE WITNESS: Yes.

1 COMMISSIONER ERVIN: What would you
2 anticipate would happen in the event that you
3 couldn't find another location for the equipment?

4 THE WITNESS: Well, I haven't given a
5 whole lot of thought to that particular question.
6 But when you did raise it earlier with Witness
7 Smith, I guess I considered the fact that, first of
8 all, we would have investor funds that had been
9 deployed in a good faith effort to comply with the
10 REPS standard in a--and we'd want to take that into
11 consideration. But I would also be taking into
12 consideration the fact that customers should pay
13 for service provided with assets that are used and
14 useful, and so I would hope that we would be able
15 to appropriately continue to use the assets in some
16 form or fashion or that we would be able to
17 appropriately recover the cost, because the--you
18 know, the program had been undertaken in a good
19 faith effort to meet the REPS statute.

20 COMMISSIONER ERVIN: Right. Now, assuming
21 for purposes of discussion that we were talking
22 about a purchase from a third party, as compared to
23 energy and RECs from a utility-owned facility, the
24 costs associated with that amount would only

1 remain--with that contract would only remain in
2 rates during the life of the purchase contract,
3 correct?

4 THE WITNESS: I believe it would remain in
5 rates as long as we were making payments to the--to
6 the provider under the agreement.

7 COMMISSIONER ERVIN: Thank you.

8 CHAIRMAN FINLEY: Can I ask one more?

9 COMMISSIONER JOYNER: Yes.

10 CHAIRMAN FINLEY: I think you were asked
11 earlier how many customers--how many self-
12 generation customers you had. You said 76.

13 THE WITNESS: Yes.

14 CHAIRMAN FINLEY: And you said you didn't
15 know how many were on Schedule SCG?

16 THE WITNESS: No, I don't.

17 CHAIRMAN FINLEY: Could you please provide
18 us as a late-filed exhibit the schedules on which
19 those 76 customers are?

20 THE WITNESS: Yes, we can.

21 CHAIRMAN FINLEY: Thanks.

22 COMMISSIONER JOYNER: Further questions
23 from the Commission?

24 (NO RESPONSE.)

1 COMMISSIONER JOYNER: Questions on the
2 Commission's questions. Mr. Gillam? Well, let's
3 make sure that there are no other intervenors. (No
4 response.) Okay. Mr. Gillam?

5 RECROSS EXAMINATION BY MR. GILLAM:

6 Q. You discussed with Chairman Finley the possibility
7 that a ruling by the Commission in support of the
8 Public Staff's position might result in withdrawal
9 of the program?

10 A. Yes.

11 Q. If that occurred, the REPS requirement would, of
12 course, still exist, and so would you then try to
13 satisfy those requirements through purchases of
14 some RECs?

15 A. That would be the alternative that would be left to
16 us, yes.

17 Q. And Commissioner Ervin and you discussed the
18 problem of how to recover through rates and where
19 to recover through rates the avoided costs. As I
20 recall in your initial proposal, you proposed to
21 recover through the REPS costs the incremental
22 costs and the avoided energy costs. And I'm not
23 trying to insinuate anything. I think perhaps you
24 labeled or characterized the avoided energy costs

1 at that time as incremental costs. But that is--
2 that is, in fact, what you proposed, and you
3 proposed to subtract out the avoided capacity
4 costs; did you not?

5 A. I did originally.

6 Q. And those avoided capacity costs that you
7 subtracted out, you proposed to recover them
8 through base rates, as distinguished from the fuel
9 costs; did you not?

10 A. I did.

11 MR. GILLAM: That's all my questions.

12 COMMISSIONER JOYNER: Thank you. Is there
13 anything further before we release Ms. McManeus for
14 the day?

15 MR. GILLAM: I believe we would need to
16 request admission of our cross examination exhibit.

17 COMMISSIONER JOYNER: You do, indeed. And
18 without objection, that is allowed. That exhibit
19 will be admitted into evidence.

20 (PUBLIC STAFF McMANEUS CONFIDENTIAL CROSS
21 EXAMINATION EXHIBIT NO. 1 WAS ADMITTED
22 INTO EVIDENCE.)

23 COMMISSIONER JOYNER: If there is nothing
24 further, you are excused.

1 (WITNESS EXCUSED.)

2 COMMISSIONER JOYNER: If we could go off
3 the record for a moment.

4 (OFF-THE-RECORD DISCUSSION)

5 COMMISSIONER JOYNER: Mr. Gillam, is the
6 Public Staff ready?

7 MR. GILLAM: Yes, except that, out of an
8 abundance of caution, I would like to move for
9 admission of all our cross examination exhibits in
10 case I neglected to make that motion previously.

11 COMMISSIONER JOYNER: I think you're okay.
12 But out of an abundance of caution, that motion is
13 granted. All cross examination exhibits will be
14 admitted.

15 MR. GILLAM: And we would call Ms. Cox and
16 Mr. McLawhorn.

17 (WHEREUPON, THE PUBLIC STAFF PANEL OF ELISE COX AND
18 JAMES McLAWHORN WERE CALLED AS WITNESSES, DULY SWORN, AND
19 TESTIFIED AS FOLLOWS:)

20 DIRECT EXAMINATION BY MR. GILLAM:

21 Q. Good afternoon, Mr. McLawhorn. Would you state
22 your full name and business position for the
23 record, please?

24 A. (By Mr. McLawhorn) Yes, my name is James McLawhorn,

1 and I am the Director of the Electric Division of
2 the Public Staff.

3 Q. And Ms. Cox, would you state your full name and
4 business position for the record?

5 A. (By Ms. Cox) Yes. I'm Elise Cox. I'm Assistant
6 Director of the Accounting Division with the Public
7 Staff.

8 Q. Did you cause to be filed on October the 10th
9 testimony consisting of 19 pages plus an appendix
10 for each of your qualifications and two exhibits?

11 A. (By Mr. McLawhorn) Yes.

12 A. (By Ms. Cox) Yes.

13 Q. Did you subsequently--well, before we get to that,
14 did that include both public and confidential
15 versions?

16 A. (By Mr. McLawhorn) Yes.

17 Q. Did you subsequently cause to be filed on October
18 21st revised versions of your testimony for the
19 sole purpose of designating as confidential some
20 items that Duke had requested to be designated as
21 confidential?

22 A. (By Ms. Cox) Yes.

23 Q. Do you have any corrections or updates to your
24 testimony?

1 A. (By Mr. McLawhorn) No, we do not.

2 Q. If you were asked the same questions in your
3 testimony now, would your responses be the same as
4 are stated in your testimony?

5 A. (By Mr. McLawhorn) Yes, they would.

6 MR. GILLAM: We would ask that the
7 witnesses' testimony be copied into the record as
8 if given orally, and that their exhibits be
9 identified as marked.

10 COMMISSIONER JOYNER: That is allowed.

11 (THE PUBLIC VERSION OF THE PREFILED
12 REVISED DIRECT TESTIMONY OF ELISE COX AND
13 JAMES McLAWHORN WILL BE COPIED INTO THE
14 RECORD AS IF GIVEN ORALLY FROM THE
15 WITNESS STAND. THE PROPRIETARY VERSION OF
16 THE TESTIMONY AND EXHIBITS HAVE BEEN
17 FILED UNDER SEAL.)

**DUKE ENERGY CAROLINAS, LLC
DOCKET NO. E-7, SUB 856**

**JOINT TESTIMONY OF ELISE COX AND JAMES MCLAWHORN
ON BEHALF OF THE PUBLIC STAFF
NORTH CAROLINA UTILITIES COMMISSION**

OCTOBER 10, 2008

FILED

OCT 10 2008

**Clerk's Office
N.C. Utilities Commission**

1 Q. MS. COX, PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND
2 PRESENT POSITION.

3 A. My name is Elise Cox and my business address is 430 North Salisbury Street,
4 Raleigh, North Carolina. I am an Assistant Director of the Accounting Division of
5 the Public Staff.
6

7 Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL
8 EXPERIENCE, AND OTHER QUALIFICATIONS.

9 A. My qualifications and experience are provided in Appendix A.
10

11 Q. MR. MCLAWHORN, PLEASE STATE YOUR NAME, BUSINESS ADDRESS,
12 AND PRESENT POSITION.

13 A. My name is James McLawhorn and my business address is 430 North Salisbury
14 Street, Raleigh, North Carolina. I am the Director of the Electric Division of the
15 Public Staff.

16 Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL
17 EXPERIENCE, AND OTHER QUALIFICATIONS.

18 A. My qualifications and experience are provided in Appendix B.

PUBLIC VERSION

1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

2 A. The purpose of our testimony is to present the Public Staff's findings and
3 recommendations regarding the application filed in this docket on June 6, 2008,
4 and supporting testimony filed on July 25, 2008, by Duke Energy Carolinas, LLC,
5 (Duke or the Company), pursuant to G.S. 62.110-1 and 62-133.8 and
6 Commission Rule R1-5, R8-61(b), and R8-67. In its application, Duke seeks the
7 following: (1) approval of a blanket certificate of public convenience and
8 necessity (CPCN) for 20 megawatts (MW) of solar photovoltaic (PV) distributed
9 generation, (2) approval of its proposed tariff for a solar PV distributed generation
10 program, (3) affirmation that the Company may recover its costs associated with
11 the proposed solar distributed generation program through the proposed
12 Renewable Energy and Energy Efficiency Portfolio Standard (REPS) cost
13 recovery mechanism provided for in G.S. 62-133.8(h) and Commission Rule R8-
14 67(e), and (4) a finding that Duke's implementation of the proposed solar
15 distributed generation program is prudent and consistent with the promotion of
16 adequate and reliable utility service to the citizens of North Carolina and the
17 policies expressed in G.S. 62-2.

18
19 Q. DID THE PUBLIC STAFF REVIEW THE PROCESS USED TO SOLICIT BIDS
20 FOR RENEWABLE ENERGY?

21 A. Yes. On April 20, 2007, Duke issued a request for proposals (RFP) for
22 renewable energy with a notice of intent to bid due by May 21, 2007. To
23 publicize the RFP, Duke posted it on its website and placed a public

2007, and the initial selection of the short list was set for August 31, 2007.

[BEGIN CONFIDENTIAL:

REDACTED

END CONFIDENTIAL]

As discussed by Duke in its testimony, a major reason it pursued its own project, rather than pursuing any of the other bids, is its desire to own multiple types of solar distributed generation facilities for such purposes as gaining experience with their installation and operation and an understanding of their impact on its system.

PUBLIC VERSION

1 Q. HOW MUCH SOLAR ENERGY DOES DUKE NEED TO COMPLY WITH ITS
2 REPS REQUIREMENTS?

3 A. Exhibit I shows the estimates for the solar energy set-aside requirements of S.L.
4 2007-397 (Senate Bill 3). Solar requirements begin in 2010 and 2011, while all
5 other renewable requirements begin in 2012. In both 2010 and 2011, Duke is
6 estimated to need 11,350 MWh of solar energy. The Public Staff estimates the
7 amount needed increases to an annual level of 40,461 MWh for 2012, 2013, and
8 2014.¹

9
10 If its certificate application were approved as filed, Duke expects ultimately to
11 generate approximately 30,000 MWh per year from its project, once full output
12 begins during the 2011 calendar year. [BEGIN CONFIDENTIAL:

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16 REDACTED

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20 END CONFIDENTIAL]

¹ These estimates are based on Duke's proposed interpretation of the provisions of G.S. 62-133.8 specifying the amount of the solar requirements for each year. The Commission is considering the interpretation of these statutory provisions in Docket No. E-100, Sub 113, and, if the interpretations proposed by parties other than Duke are adopted, the number of MWh required for some of these years will increase slightly.

PUBLIC VERSION

1 Q. PLEASE DISCUSS THE COSTS OF THE PROPOSED PROJECT AND THE
2 COSTS OF DUKE'S PROPOSED SOLAR PV DISTRIBUTED GENERATION
3 PROGRAM.

4 A. Although the Company is not requesting a rate change in this docket, it is
5 seeking affirmation that it may recover the costs associated with its proposed
6 tariff for a solar PV distributed generation program through the REPS rider
7 authorized by G.S. 62-133.8(h) and provided for in Commission Rule R8-67(e).
8 Duke's first REPS rider application is expected to be filed in early 2009.

9
10 Duke estimates that the capital costs of the proposed 20 MW project will be \$100
11 million. For purposes of REPS rider recovery, Duke used this \$100 million
12 capital cost to develop an annual cost for the total project, which would be
13 recovered annually through the REPS rider for 25 years. Based on information
14 provided to the Public Staff, Duke intends to request annual recovery of
15 \$8,930,000. The \$8,930,000 annual charge was calculated as follows: Duke (a)
16 determined the program's annual capital costs on a levelized basis using a fixed
17 charge rate applied to the total capital costs, (b) added estimated annual
18 operating and maintenance (O&M) costs, and then (c) deducted levelized
19 avoided capacity costs. The fixed charge rate for the capital costs and the O&M
20 costs equal a total annual cost of \$9,230,000. After the deduction of levelized
21 avoided capacity costs, the total annual amount for REPS rider recovery is
22 \$8,930,000. It should be noted, however, that because of developments
23 subsequent to the filing of the application, such as the enactment of federal

PUBLIC VERSION

1 legislation authorizing a solar tax credit for utilities such as Duke, the annual
2 REPS rider recovery for which Duke seeks affirmation would likely be somewhat
3 less than \$8,930,000. In addition, as discussed later in this testimony, we
4 believe Duke has now agreed to deduct avoided energy costs to determine the
5 incremental costs to be recovered through the REPS rider. This also would
6 reduce the \$8,930,000 annual REPS rider recovery for which Duke is seeking
7 affirmation.

8
9 Q. WHAT IS THE PUBLIC STAFF'S POSITION ON THE PROJECT AS
10 PROPOSED?

11 A. The Public Staff believes the proposed solar project is both larger than it needs
12 to be for Duke to comply with its solar set-aside requirements under G.S. 62-
13 133.8(d) and too costly given the cost of alternative resources. Another issue is
14 Duke's initial proposal to recover the avoided energy costs of its solar project
15 inappropriately through the REPS rider, on which we believe Duke has since
16 changed its position.

17
18 Q. WHY DO YOU BELIEVE DUKE'S PROPOSED SOLAR PROJECT IS LARGER
19 THAN NECESSARY?

20 A. Duke's proposed project has a total capacity of 20 MW, which is composed of
21 numerous solar facilities in a variety of sizes at a variety of locations. Duke plans
22 to begin installing solar PV facilities in 2009. The project, as proposed, would
23 produce 30,000 MWh annually starting in 2011 after the completion of all

PUBLIC VERSION

1 installations. As previously noted, Duke has also entered into a contract with
2 SunEdison. **[BEGIN CONFIDENTIAL:**

3
4
5 **REDACTED**
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8

9 **END CONFIDENTIAL]**
10

11 In addition to the foregoing, it also is important to keep in mind that all of Duke's
12 solar MWh do not have to come from either the SunEdison project or Duke's own
13 project. Because Duke's 2007 RFP was restricted to bidders offering at least 2
14 MW in capacity, solar PV facilities with a lower capacity were ineligible to submit
15 bids. Duke also excluded all solar facilities that were seeking to sell RECs
16 separately from the underlying electricity. In addition, solar thermal projects,
17 which do not produce any electricity, were ineligible to submit bids. We are
18 particularly concerned about the exclusion of solar thermal projects, because in
19 some cases solar thermal RECs may be available at a cost substantially lower
20 than the cost of solar PV RECs.

21
22 In our opinion, Duke does not need all of the proposed 20 MW project to meet its
23 set-aside requirements from 2010 through 2014. While the Public Staff would

PUBLIC VERSION

1 prefer that future RFPs be less restrictive, at this point in time, a self-built project
2 appears to be needed to meet the 2010 starting date for the solar set-aside
3 requirements, albeit a much smaller self-built project than the one proposed by
4 Duke. The Public Staff believes that 10 MW of self-built solar PV distributed
5 generation would be sufficient for Duke to meet all of its needs through 2014,
6 including a built-in cushion.

7
8 Q. BUT IS IT NOT CONSISTENT WITH STATE POLICY TO HAVE AS MUCH
9 SOLAR ENERGY AS POSSIBLE?

10 A. While the encouragement of solar is desirable, it should not be pursued at the
11 expense of other renewable energy resources. Duke is likely to reach
12 prematurely the "utility-wide ceiling" established by G.S. 62-133.8(h)(3) and (4), if
13 it relies too much on expensive solar energy for REPS compliance, rather than
14 making use of other, less costly, types of renewable power. As the Commission
15 is aware, subdivision (h)(4) of this section establishes a cap on the amount of the
16 REPS rider that can be collected from any customer account. The combined
17 total of the per-account caps for a utility's North Carolina retail customers
18 constitutes the utility-wide ceiling, and under subdivision (h)(3), a utility cannot be
19 required to spend more than its utility-wide ceiling for REPS compliance in any
20 year. Duke's utility-wide ceiling for 2010 is estimated to be approximately
21 \$22,500,000. The Public Staff estimates that the ceiling will increase to
22 approximately \$34,000,000 in 2012. If Duke purchases or generates an
23 excessive amount of costly solar energy, the total number of renewable MWh it

PUBLIC VERSION

1 can purchase or generate, within the limits of its utility-wide ceiling, will be
2 reduced. As a result, it may have to operate its fossil-fired plants more often, and
3 emissions of pollutants and greenhouse gases could increase.

4
5 Q. GIVEN THAT DUKE CAN BANK EXCESS RECS, WHY IS IT NOT DESIRABLE
6 FOR DUKE TO ACQUIRE MORE SOLAR RECS THAN ARE REQUIRED BY
7 THE SOLAR SET-ASIDE REQUIREMENTS IN THE PERIOD 2010-2014, BANK
8 THEM, AND THEN USE THEM FOR COMPLIANCE FROM 2015 THROUGH
9 2018?

10 A. Banking excess solar RECS in this way is not desirable for a number of reasons.
11 Such a large number of solar RECs being banked prematurely raises issues of
12 intergenerational equity. Under such an approach, customers in one period will
13 be paying for RECs from which they may not benefit, while customers in another
14 period will receive the benefits of RECs for which they may not pay. More
15 significantly, solar PV is a developing technology, and there is a real possibility
16 that, in future years, the costs of solar power will be well below the current level.
17 This likely reduction in future costs means larger amounts of solar generation
18 could be pursued later with less detrimental effect on rates than pursuing
19 excessive amounts in the early years of REPS compliance. In that event, Duke
20 would be spending money unwisely by accumulating solar RECs today for future
21 use. Therefore, while it is entirely appropriate for utilities to be allowed to bank a
22 limited number of RECs so they have some flexibility in REPS compliance, it may

PUBLIC VERSION

1 not be in the public interest for Duke to pursue its 20 MW proposal and
2 accumulate large numbers of solar RECs well before they are needed.

3
4 Should attractive options for meeting the solar set-aside requirements prove to
5 be unavailable in the future, Duke will have the option of applying for a CPCN for
6 additional self-built solar generation at that time.

7
8 Q. YOU EARLIER STATED THAT, IN YOUR JUDGMENT, DUKE'S PROPOSED
9 SOLAR PROJECT ALSO IS TOO COSTLY. IS IT APPROPRIATE FOR THE
10 COMMISSION TO CONSIDER ISSUES RELATING TO PROJECT COSTS IN A
11 CPCN PROCEEDING SUCH AS THIS?

12 A. Yes, it is. As noted earlier, Duke has estimated the construction costs of the
13 project to be \$100 million. This is shown on page 1 of the Application filed by
14 Duke on June 6, 2008, and on page 13 of the prefiled testimony of its witness
15 Owen A. Smith. General Statute 62-110.1(a) provides that no public utility or
16 other person can begin the construction of any facility included within the terms
17 of that section without first obtaining from the Commission a certificate that public
18 convenience and necessity requires, or will require, such construction. In prior
19 certificate proceedings, the Commission has stated that the purpose of G.S. 62-
20 110.1 is to provide for the orderly expansion of electric generating capacity in
21 order to create a reliable and economical power supply and to avoid the costly
22 overbuilding of generation resources. The Commission also has concluded that
23 it must consider many factors, including the construction and fuel costs of both

PUBLIC VERSION

1 the proposed project and alternatives. In addition, G.S. 62-110.1(e) provides that,
2 as a condition of receiving a certificate, an applicant is required to file an estimate
3 of construction costs in such detail as the Commission may require and that no
4 certificate can be granted unless the Commission has approved the estimated
5 construction costs.

6
7 Q. WHAT IS THE BASIS FOR YOUR OPINION THAT DUKE'S PROPOSED
8 SOLAR PROJECT IS TOO COSTLY?

9 A. **[BEGIN CONFIDENTIAL:**

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22 **END CONFIDENTIAL]**
23

PUBLIC VERSION

1 Q. CAN YOU OFFER ANY SUGGESTION AS TO WHY THE COSTS OF DUKE'S
2 PROJECT ARE SO HIGH?

3 A. Yes. Duke is not proposing to build a single large solar generating facility, or a
4 group of facilities sharing a common design or location, so as to gain the benefit
5 of economies of scale. Instead, Duke proposes to construct a wide variety of
6 facilities, of different sizes, in different locations, using different technologies. As
7 Duke witness Owen A. Smith states at pages 4-5 of his prefiled testimony:

8 The Program will . . . facilitate the Company's evaluation of the
9 impact of significant distributed generation on the Company's
10 electric system. In addition, the Program will enable the Company
11 to explore the nature of solar distributed generation offerings
12 desired by customers [and] fill knowledge gaps to enable
13 successful, wide-scale deployment of solar PV distributed
14 generation technologies

15
16 Duke witness Ellen T. Ruff similarly states at page 8 of her testimony:

17 The distributed nature of the generation of electricity under the
18 Program will enable the Company to develop competency as an
19 owner of solar renewable assets, leverage volume purchases, build
20 relationships with PV developers, manufacturers and installers, and
21 gain invaluable experience with the installation and operation of
22 multiple types of solar distributed generation facilities.

23
24 *From the testimony of these witnesses, it appears that, while one purpose of the*
25 *project is to obtain solar energy for compliance with the REPS, other important*
26 *purposes are such things as gaining expertise in a wide range of solar*
27 *technologies, learning about what Duke's customers desire in this regard, and*
28 *becoming familiar with distributed generation.*

29

PUBLIC VERSION

1 In addition, in response to a question about the breakdown of its project's capital
2 costs between actual solar generation costs and the costs associated with its
3 other purposes, Duke stated that it could not break down the costs in this
4 manner. It also stated that it did not dispute that the project includes both a solar
5 generation element and a distributed generation information element.

6
7 Q. HAS DUKE EVER ACKNOWLEDGED IN A MORE EXPLICIT MANNER THAT
8 ITS PROJECT INCLUDES COSTS IN ADDITION TO ACTUAL SOLAR
9 GENERATION COSTS?

10 A. Yes. On May 22, 2008, approximately two weeks before the filing of its
11 Application, Duke made a presentation about the solar project to the Public Staff.
12 During the course of this presentation, Duke stated that it planned to seek
13 recovery of 40% of the capital costs through the REPS rider, with the remaining
14 60% being recovered through base rates as a research expense. Between May
15 22 and the filing of the Application on June 6, Duke determined that, rather than
16 allocating the capital costs of the project between the REPS rider and a deferral
17 of the portion of the investment attributable to research, development, and
18 demonstration costs to be recovered in base rates, it would seek to recover all of
19 the costs (except avoided costs) through the REPS rider.

20
21 Q. WHAT IS THE PUBLIC STAFF'S POSITION WITH RESPECT TO WHETHER
22 DUKE SHOULD BE GRANTED A CPCN IN THIS PROCEEDING?

1 A. Based upon our analysis, it appears that Duke currently needs a portion of its
2 proposed self-built project because of the 2010 starting date for the solar set-
3 aside requirements. As stated before, we believe that Duke's solar set-asides
4 can be met through 2014, including a built-in cushion, with 10 MW of the
5 proposed 20 MW of solar PV distributed generation. Because the costs of
6 Duke's project are higher than the costs of other reasonably available
7 alternatives, however, the Public Staff believes that any CPCN granted in this
8 docket should include a condition that (1) limits the amount that Duke can
9 recover through the REPS rider and (2) leaves the recovery of the remainder to
10 be determined in subsequent proceedings. The Public Staff's concerns about
11 Duke's proposed recovery of its [REDACTED] cost (minus avoided costs)
12 through the REPS rider and the details of our proposed condition are discussed
13 in detail below.

14
15 Q. MOVING NOW TO DUKE'S REQUEST THAT THE COMMISSION AFFIRM
16 THAT THE COMPANY MAY RECOVER THE COSTS ASSOCIATED WITH ITS
17 PROPOSED SOLAR PROGRAM THROUGH A REPS RIDER, WHAT IS THE
18 PUBLIC STAFF'S POSITION ON THAT REQUEST?

19 A. The Public Staff believes that only the actual cost of solar energy, as
20 distinguished from costs attributable to Duke's other purposes in proposing the
21 project, should be recoverable through a REPS rider. Duke had other options it
22 could have pursued to meet its solar set-asides, including a number of
23 acceptable bidders with lower costs than the cost of Duke's project.

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23

Q. WHAT PORTION OF DUKE'S [REDACTED] COST DO YOU RECOMMEND
BE EXCLUDED FROM THE REPS RIDER?

A. [BEGIN CONFIDENTIAL:

REDACTED

END CONFIDENTIAL]

Q. UNDER YOUR PROPOSAL, HOW WOULD THE COSTS [BEGIN
CONFIDENTIAL:

REDACTED

A.

END CONFIDENTIAL] could not be recovered through the REPS rider, with one
exception. This exception relates to G.S. 62-133.8(h)(1)(b), which provides that

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1 any electric power supplier may include in its incremental costs of REPS
2 compliance, and recover through the REPS rider, up to \$1,000,000 per year in
3 research costs relating to "renewable energy, energy efficiency, or improved air
4 quality." Duke, therefore, could request in its REPS rider proceedings that up to
5 \$1,000,000 per year be found to be research costs related to renewable energy
6 and recoverable through the rider. To support any such request, Duke would
7 need to tender evidence to establish that the costs are research costs within the
8 meaning of the statute and that they were reasonable and prudently incurred.
9 The remainder of the costs would be considered for inclusion in base rates, along
10 with other cost of service components and subject to the same standards, in a
11 subsequent general rate case.

12
13 Q. TURNING NOW TO THE APPROPRIATENESS OF RECOVERING THE
14 AVOIDED ENERGY COSTS OF THE PROJECT THROUGH THE REPS RIDER,
15 WHAT IS THE PUBLIC STAFF'S UNDERSTANDING OF DUKE'S CURRENT
16 POSITION?

17 A. In the Application, Duke stated that under G.S. 62-133.8(h) and Commission
18 Rule R8-67(e), an amount equivalent to the avoided cost of conventional
19 generation displaced by its proposed solar program is to be recovered through
20 base rates, and the incremental costs of compliance with the REPS are to be
21 recovered through an annual rider. It is our understanding that Duke has now
22 agreed to deduct avoided energy costs from its calculation of the incremental
23 costs to be recovered through the REPS rider. This is consistent with our

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1 position that, for renewable energy, the avoided capacity and energy costs
2 associated with a purchase must be recovered through the fuel clause, rather
3 than the REPS rider. The Public Staff also believes that, for a utility-owned
4 project, the avoided capacity and energy costs associated with it must be
5 recovered through base rates, rather than through the REPS rider or through a
6 fuel clause proceeding.

7
8 At the Public Staff's request, Duke provided a calculation of \$7,040,000 for the
9 annual costs to be recovered after deducting both the avoided energy and
10 capacity costs (before taking into account the federal investment tax credit).

11
12 Q. WHAT ARE THE PUBLIC STAFF'S RECOMMENDATIONS CONCERNING THE
13 COMPANY'S APPLICATION IN THIS PROCEEDING.

14 A. The Public Staff recommends that the Commission do the following:

15 (a) grant Duke a blanket CPCN for up to 10 MW of solar PV distributed
16 generation, subject to the condition **[BEGIN CONFIDENTIAL: REDACTED**
17 **END CONFIDENTIAL]** (minus avoided energy and capacity costs) be allowed to
18 be recovered through the REPS rider;

19 (b) require Duke to revise its proposed tariff to state that the maximum
20 number of customers served will be no more than the number required to
21 achieve the 10,000 kW (DC) of installed PV capacity;

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1 (c) adopt the Public Staff's position (to which we believe Duke has now
2 agreed) that both avoided capacity and avoided energy costs are ineligible for
3 recovery through the Company's REPS rider;

4 (d) adopt the Public Staff's position that the avoided costs for utility-
5 owned renewable generation are ineligible for recovery through the Company's
6 fuel clause rider;

7 (e) require Duke to file an updated construction cost estimate; and

8 (f) conclude that the reasonableness and prudence of both the
9 construction costs of the project and Duke's implementation of the solar PV
10 distributed generation program will be considered in appropriate future
11 proceedings.

12
13 Q. ARE THERE ANY OTHER ISSUES YOU WISH TO ADDRESS?

14 A. Yes. Because Duke has requested a blanket certificate with the size and the
15 locations of the facilities to be determined later, the notice Duke was required to
16 publish of its certificate request could not provide specific information in this
17 regard. For projects larger than two MW to be located on property that is not
18 currently-owned utility property or on a customer's premises with the customer's
19 consent, some provision needs to be made to deal with this notice issue. The
20 Public Staff intends to discuss this with Duke and provide a recommendation in
21 this regard at a later time.

22
23 Q. DO YOU HAVE ANY OTHER COMMENTS?

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1 A. Yes. The Public Staff is still reviewing certain information related to Duke's
2 proposed project and its costs. If this review results in any additional
3 adjustments, the Public Staff will file additional information with the Commission.
4

5 Q. DOES THAT COMPLETE YOUR TESTIMONY?

6 A. Yes.

1 (PUBLIC STAFF DIRECT APPENDIX A AND B AND EXHIBIT
2 NOS. 1 AND 2 WERE MARKED FOR IDENTIFICATION.)

3 Q. (By Mr. Gillam) Do you have a summary of your
4 testimony?

5 A. (By Mr. McLawhorn) Yes, we do.

6 Q. Would you please give it now?

7 A. (By Mr. McLawhorn) Yes.

8 MR. OLSON: Are we going to waive those?
9 We waived--

10 MR. GILLAM: We would be willing to have
11 it waived if there's no objection.

12 COMMISSIONER JOYNER: That is at your
13 option. If there are no objections, the summary
14 will be copied into the record as if read by one of
15 the witnesses from the stand.

16 (THE SUMMARY OF THE PREFILED DIRECT
17 TESTIMONY OF ELISE COX AND JAMES
18 McLAWHORN WILL BE COPIED INTO THE RECORD
19 AS IF GIVEN ORALLY FROM THE WITNESS
20 STAND.)

**DUKE ENERGY CAROLINAS
DOCKET NO. E-7, SUB 856**

**SUMMARY OF TESTIMONY OF
ELISE COX AND JAMES S. MCLAWHORN**

The purpose of our testimony is to present the Public Staff's findings and recommendations regarding the application filed in this docket on June 6, 2008, and supporting testimony filed on July 25, 2008, by Duke Energy Carolinas, LLC, (Duke or the Company), pursuant to G.S. 62.110-1 and 62-133.8 and Commission Rule R1-5, R8-61(b), and R8-67. In its application, Duke seeks the following: (1) approval of a blanket certificate of public convenience and necessity (CPCN) for 20 megawatts (MW) (DC) of solar photovoltaic (PV) distributed generation, (2) approval of its proposed tariff for a solar PV distributed generation program, (3) affirmation that the Company may recover its costs associated with the proposed solar distributed generation program through the proposed Renewable Energy and Energy Efficiency Portfolio Standard (REPS) cost recovery mechanism provided for in G.S. 62-133.8(h) and Commission Rule R8-67(e), and (4) a finding that Duke's implementation of the proposed solar distributed generation program is prudent and consistent with the promotion of adequate and reliable utility service to the citizens of North Carolina and the policies expressed in G.S. 62-2.

The Public Staff recommends that the Commission do the following:

- (a) grant Duke a blanket CPCN for up to 10 MW (DC) of solar PV distributed generation, subject to the condition that no more than an amount specified in the confidential portion of our testimony be allowed to be recovered through the REPS rider;

- b) require Duke to revise its proposed tariff to state that the maximum number of customers served will be no more than the number required to achieve the 10 MW (DC) of installed PV capacity;
- (c) adopt the Public Staff's position (to which we believe Duke has now agreed) that both avoided capacity and avoided energy costs are ineligible for recovery through the Company's REPS rider;
- (d) adopt the Public Staff's position that the avoided costs for utility-owned renewable generation are ineligible for recovery through the Company's fuel clause rider;
- (e) require Duke to file an updated construction cost estimate; and
- (f) conclude that the reasonableness and prudence of both the construction costs of the project and Duke's implementation of the solar PV distributed generation program will be considered in appropriate future proceedings.

It is our understanding that Duke has agreed to all of these recommendations except for the limitation or cap on the amount to be recovered through the REPS rider.

1 MR. GILLAM: The witnesses are available
2 for cross.

3 COMMISSIONER JOYNER: Okay. Intervenors?

4 CROSS EXAMINATION BY MR. CAVROS:

5 Q. Good afternoon. Sorry about the arrangement of the
6 room.

7 MR. GILLAM: Do you want to switch places
8 with me so you can look directly at them?

9 MR. CAVROS: No, if you don't mind turning
10 your head. I'll try to be as brief as I can.

11 Q. (By Mr. Cavros) George Cavros for the Southern
12 Alliance for Clean Energy. Ms. McManeus earlier
13 testified, and it's in both of your testimony that
14 the program has been cut in half and that the--the
15 amount being charged against the REP rider--REPS
16 rider has also decreased substantially down from 40
17 percent in 2010 to 2011 to now it looks like 10
18 percent in 2010, 2011, dropping to six percent 2012
19 and three percent in 2015. And also the rate
20 impact has been reduced from 34 cents a month to 8
21 cents a month for this particular program.

22 And I have a question for you. How can I
23 best phrase this? Because I raised this issue with
24 Ms. McManeus, and I probably didn't do a good job

1 of laying it out and explaining it. But, under
2 that scenario--under that 8 cents monthly impact,
3 that's about a dollar a year. And the REPS limit
4 is \$10, so it's about 10 percent. That leaves 90
5 percent open. Aren't you concerned that you're
6 leaving a lot of renewable--you might be leaving a
7 lot of renewable energy on the table in future
8 years by coming in so low under the cost cap in the
9 initial years?

10 A. (By Mr. McLawhorn) I'm not sure I understand your
11 question entirely. We don't know, in fact, that
12 that will be the only renewable resources that will
13 be in effect in the early years.

14 Q. Let me rephrase that then, because obviously the
15 REPS cap go on for many years. Have you been able
16 to model or do you have the capacity to sort of
17 look at what type of investment and how much and in
18 what years will maximize the area within the cost
19 cap in terms of renewable energy megawatts and
20 also, at the same time, cost competitiveness for
21 customers?

22 A. (By Mr. McLawhorn) I think not knowing exactly what
23 the renewable energy is going to cost, that's
24 difficult to do at this point in time. We're so

1 early in the game.

2 Q. Oh, sure.

3 A. (By Mr. McLawhorn) No, we don't have any particular
4 forecast of that.

5 A. (By Ms. Cox) This is just an application for this
6 particular solar project. Duke has also purchased
7 or has a contract with another solar vendor that
8 will be a PPA. I would assume that they would also
9 have some other projects that they're looking at,
10 and we will see in their compliance plan when filed
11 in November.

12 Q. And the reason I ask is that, on page 8, line 11,
13 you say that Duke is likely to reach prematurely
14 the utility-wide ceiling, and I was wondering what
15 that was based on?

16 A. (By Mr. McLawhorn) Well, I think we have seen some
17 projections by both Duke and Progress Energy that
18 it is possible, if not likely, that they will at
19 some point exceed the cost caps before they meet
20 the percentages set out by Senate Bill-3. And I
21 think the point we were trying to make, if you have
22 more expensive purchases that are necessary, that
23 would--that would sort of exacerbate that problem.
24 You would hit it--you would reach it sooner than

1 you otherwise would.

2 Q. And let me state that, you know, we appreciate the
3 work that Public Staff does on behalf of consumers.
4 We don't necessarily agree, in fact, we don't agree
5 that the program should be cut in half. And, you
6 know, I'm just trying to explore the--you know,
7 what the optimal investment might be of a variety
8 of technologies, and that's why I'm inquiring as to
9 the process that--that you went through. But it
10 appears through your testimony that you weren't
11 able to model the range of renewable energy
12 investments in a way that you could sort of run
13 iterations on the timing of the investment and the
14 amount of investment from a whole range of
15 renewable sources to come up with sort of an
16 optimal--an optimal number for this particular
17 program?

18 A. (By Mr. McLawhorn) We did attempt to look at what
19 we thought was an appropriate cost for this program
20 for the solar only portion. We did not attempt to
21 extrapolate that to the overall renewable
22 requirements and the overall cost cap for other
23 sources. We focused solely on this project that we
24 had at hand, and we also--we did look at the REC

1 requirements for the solar set aside overall. But
2 as far as a cost standpoint, we were focusing on--
3 on this application that was before us.

4 Q. Thanks. And you made some references to solar
5 energy as costly in several instances, either
6 costly or expensive. I want to point you to one.
7 It's page 8, line 23. And that--that reference,
8 I'm assuming is related--

9 MR. GILLAM: Well, in fact, there is no
10 page 8, line 23.

11 MR. CAVROS: I apologize. That would be
12 page 8, line 23. No? Okay. Then I think I'm
13 looking at the older version.

14 COMMISSIONER JOYNER: Well, actually, Mr.
15 Gillam, I have a page 8.

16 MS. COX: No line 23.

17 COMMISSIONER JOYNER: Actually, I have a
18 line 23.

19 MR. CAVROS: I'm looking at the public
20 version.

21 COMMISSIONER JOYNER: Are we looking at
22 the confidential version or the public version?

23 MR. CAVROS: I'm looking at the public
24 version.

1 COMMISSIONER JOYNER: The public version I
2 have has a line--has a page 8 and a line 23.

3 MR. McLAWHORN: I don't have the public
4 version. I only have the confidential version.
5 I'm sorry. Do you--

6 MR. CAVROS: Would it help if I read the
7 sentence?

8 MS. COX: I think it's probably on the
9 confidential, line 20.

10 COMMISSIONER JOYNER: Mr. Cavros, why
11 don't you just read the sentence. It is public.
12 And that way we'll all make sure that we have the
13 same points of reference.

14 Q. "If Duke purchases or generates an excessive amount
15 of costly solar energy, the total number of
16 renewable megawatts it can purchase or generate,
17 within the limits of its utility-wide ceiling, will
18 be reduced." And actually, I think I just answered
19 my own question, that costly solar energy you were
20 comparing to the other renewable resources within
21 the REPS statute?

22 A. (By Mr. McLawhorn) Yes.

23 A. (By Ms. Cox) Yes.

24 Q. I just want to also speak to the banking of RECs,

1 which you refer to in my version on page 9, it
2 starts on line 10. And on line 12 you express that
3 there was some concerns about intergenerational--
4 intergenerational equity. Could you explain that?

5 A. (By Ms. Cox) Yes, if you look down on the next
6 sentence, we go into the definition of where our
7 concern on intergenerational equity that will occur
8 when one set of ratepayers pays an advance or pays
9 for a product that another set of customers,
10 actually, enjoys the benefits of.

11 Q. And would that be similar to the concept of cross-
12 subsidization, one customer paying for something
13 that a whole rate base might enjoy?

14 A. (By Mr. McLawhorn) Possibly. I think this is more
15 a timing issue of when the cost is incurred versus
16 when the benefits are enjoyed as a--usually when I
17 think of cross-subsidy, I think of--more of a
18 contemporaneous timing but one customer group
19 paying for it and another group enjoying the
20 benefits at the same time.

21 Q. Let me give you an example, and you can tell me if
22 this would be an example of intergenerational
23 equity. Hypothetical: I'm a Duke ratepayer. I use
24 consistently a thousand megawatts a month--sorry,

1 kilowatt hours a month. I have for many, many
2 years. My neighborhood expands, and the Company
3 has to build a new power plant, which is rate
4 based, and I end up paying for that. How is that
5 different from what you describe here?

6 A. (By Mr. McLawhorn) Well, I don't think, in that
7 case, if you're talking about power plant, it's not
8 paid for all at one time. It's depreciated over
9 the useful life of the plant. So, you know, it is
10 being paid for in a sense by the customers who use
11 it and fuel that goes into it is paid for as it is
12 used. You probably can't ever eliminate that 100
13 percent.

14 In this case, we were looking at a
15 situation where Duke has acquired a number of RECs,
16 and those costs are run through the REPS rider in
17 one year. And then they're banked and won't be
18 used for maybe several years, three, four, five
19 years down the road.

20 Q. Right.

21 A. (By Mr. McLawhorn) They've already been paid for.

22 Q. Okay. If I continue to be a Duke customer in the
23 year they're passed through and I'm still a Duke
24 customer five years down the road, then that

1 intergenerational equity wouldn't exist; is that
2 right?

3 A. (By Ms. Cox) Not for that particular ratepayer.

4 Q. Okay. Thank you. And I'll speed this along. Just
5 a couple more questions. Actually, one last
6 question.

7 In purchasing RECs and you mentioned--you
8 actually mentioned the purchase of RECs on page 10,
9 line 4, in my version. It just says, should
10 attractive option for meeting the solar set-aside
11 requirements prove to be unavailable in the future,
12 Duke will have the option, et cetera, et cetera.
13 You mention attractive options. I assume there
14 you're talking about a PPA or buying RECs; is that
15 correct?

16 A. (By Mr. McLawhorn) Yes.

17 Q. And in purchasing RECs, do you have an opinion of
18 what that REC price should be?

19 A. (By Mr. McLawhorn) Not in terms of a future price.
20 Of course, we, in our testimony, recommended what
21 we thought was a reasonable price for this project.

22 Q. And I apologize. Where is that--where is that
23 testimony on the REC price?

24 A. (By Ms. Cox) It's on page 15.

1 MS. NICHOLS: I believe this may get into
2 the confidential testimony.

3 MR. CAVROS: Okay.

4 A. (By Mr. McLawhorn) If we have to discuss the
5 specific price, it would be.

6 Q. Sure, okay. Thank you very much. I appreciate
7 your time.

8 MR. CHAMBERLAIN: No questions.

9 COMMISSIONER JOYNER: Mr. Olson?

10 MR. OLSON: I have no questions.

11 MS. COMPTON: No questions.

12 MR. GREEN: No questions.

13 COMMISSIONER JOYNER: Duke?

14 MS. NICHOLS: I'm going to attempt to do
15 this without raising any confidential issues.

16 CROSS EXAMINATION BY MS. NICHOLS:

17 Q. Good afternoon.

18 A. (By Mr. McLawhorn) Good afternoon.

19 A. (By Ms. Cox) Hello.

20 Q. The Public Staff's recommendation is that only an
21 amount consistent with the third place solar bid in
22 the Company's renewable RFP should be recovered
23 through the REPS rider; is that correct?

24 A. (By Ms. Cox) Yes.

1 Q. So we can use the term "the third place solar bid"
2 as--in reference to the dollar figure that's
3 contained in the confidential portion of your
4 testimony?

5 A. (By Mr. McLawhorn) Yes.

6 Q. Were you here during the testimony of the Solar
7 Alliance Witness Hitt and Vote Solar Witness Starrs
8 regarding their position that Duke should be
9 required to establish a standard REC purchase offer
10 at the higher of 18 cents or the cost of Duke's
11 proposed program?

12 A. (By Mr. McLawhorn) Yes, we heard that.

13 Q. And did you also read the prefiled testimony from
14 Ms. Hitt and Dr. Starrs?

15 A. (By Mr. McLawhorn) Yes.

16 Q. And consistent with your recommendation as to
17 Duke's program, is it fair to say that the Public
18 Staff would not support recovery of a REC purchase
19 price in excess of the cost of the third place bid
20 through the REPS rider?

21 A. (By Mr. McLawhorn) We did not really address the
22 idea of establishing a REC price, as I understood
23 what the--Ms. Hitt and Dr. Starrs were saying. I
24 don't think we're in favor of establishing any

1 price as a fixed price going forward. The price
2 that we used, which you termed third bid, was
3 really our best estimate of a proxy of what the
4 true solar value of Duke's bid was excluding all of
5 the other benefits or other properties that were
6 discussed by Mr. Smith this morning. That was for
7 this project only.

8 Q. But if it's appropriate for such a limitation to be
9 placed on Duke's utility--Duke's owned solar
10 generation, is it appropriate for the same
11 limitation to be placed on what it would be
12 appropriate for Duke to pay a customer generator?

13 A. (By Mr. McLawhorn) If we were talking about
14 something in the same time frame, that probably
15 would be a reasonable estimate. If we're talking
16 about something five years from now, I don't know
17 that that would be reasonable.

18 Q. So, today, the Public Staff would not support the
19 recommendation of Dr. Starrs or Ms. Hitt that the
20 Company establish a standard REC purchase offer at
21 18 cents or more?

22 A. (By Mr. McLawhorn) I don't believe so, no.

23 Q. And you were just asked a few questions about the
24 intergenerational issue on--reflected on page 9 of

1 your testimony. Isn't it routine for the
2 Commission to approve the deferral and amortization
3 of various different costs for periods of, you
4 know, five--three to five years?

5 A. (By Ms. Cox) Yes.

6 Q. And the banking issue that you were discussing in
7 your testimony here, that was a banking of RECs
8 forward four years, correct?

9 A. (By Ms. Cox) Yes, that was one of the issues that
10 we raised. But I believe a more significant issue
11 had to do with the price--potential price
12 decreases.

13 A. (By Mr. McLawhorn) And just to be clear, the Public
14 Staff is not opposed to banking of RECs. In fact,
15 our proposal results in banking of RECs. It was
16 more the magnitude and how far we thought it was
17 reasonable to bank RECs. We recognize that some
18 banking of RECs is not only necessary but probably
19 required.

20 Q. Because, in fact, the Commission recognized in its
21 rule making under Senate Bill-3 that there could
22 be--that banking RECs indefinitely could create an
23 intergenerational mismatch between the customers
24 that paid for the RECs and the customers who

1 benefit. And, therefore, the Commission concluded
2 that the seven-year banking period was the
3 appropriate balance there, correct?

4 A. (By Mr. McLawhorn) I believe they concluded that
5 was the maximum amount of time.

6 Q. And Mr. Gillam asked several questions to Duke's
7 witnesses about the difference--the cost difference
8 between Duke's proposed program and the second
9 place bidder in its renewable RFP; were you present
10 for those questions?

11 A. (By Ms. Cox) Yes.

12 A. (By Mr. McLawhorn) Yes.

13 Q. And does the Public Staff recommend that Duke rely
14 solely on purchased power to comply with the solar
15 carve-out obligations?

16 A. (By Mr. McLawhorn) No, we--you know, it is not our
17 testimony that Duke should have signed a contract
18 with the second place bidder or the third place
19 bidder. As I said before, what we were trying to
20 do was attempt to determine what was the true solar
21 value of the Duke project. If you recall, I
22 won't--I won't name numbers at this point, but when
23 the project was originally filed, it was much more
24 expensive than any of the numbers that have been

1 discussed today. And when we compared that to the
2 other projects from the RFP that Duke had received,
3 the other solar projects that did not have fatal
4 flaws in them, it was obvious that there were a
5 good number of those that were considerably less
6 expensive than the project that Duke had proposed.
7 And when we inquired of Duke why the great cost
8 differential, one of the things that we were told
9 on several occasions by Duke staff was that there
10 were other attributes of Duke's program, such as
11 things that potentially could be termed research
12 and development, that were not present in the other
13 bids from the RFP. So we were attempting to
14 determine what was the true cost of the solar
15 resource. And so we looked at the prices of the
16 other bids that Duke received, and that's a lot of
17 the discussion that has been today around those--
18 the prices of those bids. That was part of the
19 process that we went through.

20 Q. If Duke withdrew its application that's pending
21 here today and entered into a purchased power
22 agreement with the second place bidder or the third
23 place bidder, and that supplier breached its
24 contract and failed to meet its obligations, would

1 the Public Staff agree that Duke had complied with
2 its REPS requirements?

3 A. (By Mr. McLawhorn) No, I think you still have the
4 obligation to do that. As I said, we are not
5 saying that you should have signed those contracts.
6 There are other options that you could have pursued
7 that weren't even included in the RFP. It was
8 fairly restrictive at a fairly high size limit.
9 There were other solar--types of solar facilities
10 that were not allowed to bid into the RFP. So we
11 don't know what you might could have gotten then or
12 you might could get in the future.

13 A. (By Ms. Cox) Also, we would assume that that
14 contract between the--for the PPA would include
15 some sort of clause that would allow damages to--
16 Duke to receive damages, and those costs could be
17 used to buy RECs if needed.

18 Q. If there's a REC market.

19 A. (By Mr. McLawhorn) Well, we've already seen in
20 other proceedings before this Commission that there
21 is a REC market.

22 Q. In fact, the Public Staff took the position in the
23 rule making under Senate Bill-3 that a contractual
24 default by a solar provider should not relieve the

1 electric power supplier from its obligation under
2 the REPS requirement, and the Public Staff stated,
3 this is especially true with respect to the state's
4 electric public utilities, which are large
5 corporations with extensive experience in
6 procurement and contingency planning. And that
7 Public Staff, in fact, proposed an addition to the
8 Commission's rules that the--in the event of a
9 default by a solar facility, that the utility
10 should not be granted relief from its REPS
11 obligations except in extraordinary circumstances;
12 is that correct?

13 A. (By Mr. McLawhorn) That sounds right. But, again,
14 I would add, we are not saying that Duke needs to
15 rely solely on third-party bidders. We did not
16 oppose Duke building the facility and owning it
17 itself, but that doesn't mean at any cost.

18 Q. You're just going to--you're just going to limit
19 Duke to cost recovery at the price of that bid?

20 A. (By Mr. McLawhorn) At a reasonable price for the
21 solar energy out of it. In fact, as I think
22 Chairman Finley pointed out earlier today, we're
23 not saying that the remainder of the costs are
24 imprudent. We're not even saying that Duke can't

1 recover those costs. We're just saying that, for
2 purposes of this proceeding, we were trying to
3 determine the true value of the solar generation of
4 this project. We were willing to look at the
5 additional costs in future proceedings, including
6 the REPS proceeding that's coming up.

7 MS. NICHOLS: Nothing further.

8 COMMISSIONER JOYNER: Redirect?

9 MR. GILLAM: Yes, a few.

10 REDIRECT EXAMINATION BY MR. GILLAM:

11 Q. Mr. Cavros talked to you about--asked you about--

12 COMMISSIONER JOYNER: Mr. Gillam, I need
13 you to pull that mic closer to you. Thank you.

14 Q. Mr. Cavros asked you about a portion of some
15 testimony where you discuss the possibility of
16 reaching the utility-wide ceiling prematurely, and
17 bear with me while I flip the pages to find that
18 place. Do you have it in front of you?

19 A. (By Mr. McLawhorn) Page 8?

20 A. (By Ms. Cox) 8 or 9.

21 Q. Okay. Would you read the sentence that in my non-
22 confidential version begins on line 18 of page 8?

23 A. (By Ms. Cox) That sentence that starts on page 17;
24 is that what you said?

- 1 Q. No, the sentence that starts on page 8 at line 18.
2 It begins, "Duke is likely." In fact, I can read
3 it for you. Did you not say, "Duke is likely to
4 reach prematurely the 'utility-wide ceiling'
5 established by G.S. 62-133.8(h)(3) and (4), if it
6 relies too much on expensive solar energy for REPS
7 compliance, rather than making use of other, less
8 costly, types of renewable power"?
- 9 A. (By Ms. Cox) Yes.
- 10 Q. You did not simply say Duke is likely to reach
11 prematurely the utility-wide ceiling, did you?
- 12 A. (By Ms. Cox) No.
- 13 Q. Now, Ms. Nichols asked you some questions about
14 the--about what might happen if, instead of
15 pursuing its program, Duke had entered into a power
16 purchase agreement with one of the other bidders on
17 the RFP and the--and that bidder had subsequently
18 defaulted on its agreement, and you mentioned, did
19 you not, some of the ways that Duke could remedy
20 that shortfall?
- 21 A. (By Mr. McLawhorn) Yes.
- 22 Q. And if those ways of remedying the shortfall proved
23 to be not fully sufficient and Duke was still
24 somewhat short of meeting its requirements because

1 of an unexpected default by a supplier, would that
2 have some bearing on the sanction that the
3 Commission might impose for that failure to comply
4 or the sanction the Public Staff might recommend
5 that the Commission impose for that failure to
6 comply?

7 A. (By Ms. Cox) I think it could.

8 Q. Focusing on the third place bidder in the RFP,
9 without mentioning their name, you're familiar with
10 who they are; are you not?

11 A. (By Ms. Cox) Yes.

12 A. (By Mr. McLawhorn) Yes.

13 Q. Would you view that provider as one that had a
14 substantial possibility of defaulting on a major
15 contract?

16 A. (By Ms. Cox) Not that I'm aware of.

17 A. (By Mr. McLawhorn) Not based on the information we
18 have, no.

19 Q. Is that a supplier who has a good reputation for
20 performing on the contracts it enters into or, at
21 the very least, not suddenly and unexpectedly
22 walking away from such contracts?

23 MS. NICHOLS: I don't think there's any
24 foundation for these witnesses to answer that

1 question.

2 COMMISSIONER JOYNER: Would you like to
3 respond?

4 MR. GILLAM: Let me lay a foundation.

5 Q. (By Mr. Gillam) Mr. McLawhorn, how long have you
6 been involved in the electric utility industry?

7 A. (By Mr. McLawhorn) For about 20 years.

8 Q. Have you made an effort to keep up with
9 developments in the industry?

10 A. (By Mr. McLawhorn) I try. They change pretty fast.

11 Q. Have you made an effort to keep up with the leading
12 players in the industry?

13 A. (By Mr. McLawhorn) Yes, I try to.

14 Q. Would you say that the third place bidder on the
15 RFP is a leading player in the electric utility
16 industry?

17 A. (By Mr. McLawhorn) I would say that. And I would
18 also say that Duke's evaluator for their RFP
19 concurs with that.

20 Q. And are you familiar with any instance in which
21 that third place bidder has suddenly walked away
22 from a major commitment?

23 A. (By Mr. McLawhorn) I am not aware of any.

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

1 have.

2 COMMISSIONER JOYNER: Questions from the
3 Commission? Chairman Finley?

4 CHAIRMAN FINLEY: Does the Public Staff
5 deem, for purposes of Senate Bill-3, that Duke is a
6 private investor or not?

7 MS. McLAWHORN: I think that is a
8 difficult question to answer. I've heard the other
9 testimony, and the Public Staff has not taken a
10 position on that. I certainly--we could see it
11 argued both ways, and we don't have a position at
12 this time.

13 CHAIRMAN FINLEY: Fair enough. I think
14 you did mention the possibility that some of these
15 costs might be determined to be research and
16 development for purposes of Senate Bill-3?

17 MS. COX: Yes.

18 CHAIRMAN FINLEY: Of course, there's a
19 limitation on how much can be--how much research
20 and development can be recovered through the REPS
21 rider, a million dollars a year?

22 MS. COX: That's correct.

23 CHAIRMAN FINLEY: Is it possible that if
24 some of the costs were determined to be research

1 and development, that they could be capitalized and
2 amortized over time, or would they all be expenses
3 in the year incurred?

4 MS. COX: I think based on the way that
5 Duke has presented the annual program costs, you
6 would get an annual amount that you can look at for
7 research and development costs.

8 CHAIRMAN FINLEY: So are you saying that
9 all of the costs that were research and development
10 would be an O&M expense, as opposed to a capital
11 expense, that can be amortized over time?

12 MS. COX: Well, I guess you could look at
13 whether you should amortize it or not. But I think
14 the way that the Company has presented it, using
15 the fixed charge rate, they've determined an annual
16 amount to flow through the REPS rider. And based
17 on their calculation, it's an annual incremental
18 cost. You could also, I believe, look at an annual
19 R&D cost. I have--you know, I think that that's
20 correct.

21 CHAIRMAN FINLEY: Okay.

22 COMMISSIONER JOYNER: Further questions
23 from the Commission?

24 (NO RESPONSE.)

1 COMMISSIONER JOYNER: Questions on
2 Chairman Finley's questions? Mr. Gillam? I wanted
3 to make sure there are no other questions. I
4 wanted to give you the last word with your witness.
5 Okay. Mr. Gillam.

6 FURTHER REDIRECT EXAMINATION BY MR. GILLAM:

7 Q. Thinking about Chairman Finley's question about the
8 research clause that allows recovery of a million
9 dollars per year, assuming that the cost in excess
10 of the amount that the Public Staff proposes to
11 allow through the REPS rider and the cost--and the
12 avoided costs--let me try and phrase it this way.

13 Assume--let me start over. Assuming that
14 a million dollars a year was found to constitute
15 research costs and to be recoverable through the
16 research clause of Senate Bill-3, and assuming that
17 the amount the Public Staff has proposed was
18 recovered through the REPS rider, and assuming that
19 avoided costs were recovered through base rates,
20 those three combined would be more than sufficient
21 to cover the estimated costs of Duke's project;
22 would they not?

23 A. (By Ms. Cox) I don't know. I haven't made that
24 calculation.

1 Q. You would certainly not rule out--you would
2 certainly not rule out the possibility that they
3 might?

4 A. (By Ms. Cox) No, I wouldn't rule that out.

5 Q. (By Mr. McLawhorn) They might.

6 COMMISSIONER ERVIN: You don't deny it, do
7 you?

8 MR. McLAWHORN: We're saying we don't
9 know.

10 Q. And that could be addressed in the proposed order?

11 A. (By Ms. Cox) Yes, it could.

12 MR. GILLAM: Okay. I think that's all.

13 COMMISSIONER JOYNER: Is there anything
14 else with respect to these witnesses?

15 MR. GILLAM: We would like to move the
16 admission of our exhibits.

17 COMMISSIONER JOYNER: They are admitted
18 into evidence.

19 (PUBLIC STAFF APPENDIX A AND B AND DIRECT EXHIBIT
20 NOS. 1 AND 2 WERE ADMITTED INTO EVIDENCE.)

21 COMMISSIONER JOYNER: And if there is
22 nothing else, Ms. Cox and Mr. McLawhorn, you are
23 excused.

24 (WITNESSES EXCUSED.)

1 COMMISSIONER JOYNER: Is there anything
2 else that we need to dispose of before we get to
3 the matter of--sorry. I keep forgetting this
4 little green button here.

5 Is there anything else we need to dispose
6 of before we get to the matter of briefs and
7 proposed orders?

8 (NO RESPONSE.)

9 COMMISSIONER JOYNER: We can handle that
10 pretty quickly. I have conferred with our staff,
11 and we would like briefs and proposed orders by
12 November 21st.

13 MS. NICHOLS: When might we expect the
14 transcript?

15 COURT REPORTER: Monday.

16 MS. NICHOLS: Oh, thank you.

17 COMMISSIONER JOYNER: I actually didn't
18 hear the answer, but I thought it was expedited.

19 MR. GILLAM: What was the answer?

20 COURT REPORTER: Monday.

21 COMMISSIONER JOYNER: You might expect the
22 transcript by Monday. We will expect proposed
23 orders and briefs by November 21st. I understand
24 that timeline, but we're all operating under very

1 restrictive timelines. So thank you all for the
2 attention you've given to this. We are adjourned.

3

4

THE HEARING WAS ADJOURNED AT 5:25 P.M.

5

STATE OF NORTH CAROLINA

COUNTY OF WAKE

C E R T I F I C A T E

I, Peggy F. Barbee, Notary Public/Court Reporter, do hereby certify that the foregoing hearing before the North Carolina Utilities Commission in Docket No. E-7, Sub 856 was taken and transcribed under my supervision; and that the foregoing pages constitute a true and accurate transcript of said Hearing.

I do further certify that I am not of counsel for, or in the employment of either of the parties to this action, nor am I interested in the results of this action.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 27th day of October, 2008.


Peggy F. Barbee

Notary Public No. 19953200118