



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 20, 2019

M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
Mail Service Center 4325
Raleigh, North Carolina 27699-4300

Re: Docket No. E-7, Sub 1191

Dear Ms. Jarvis:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the following:

1. Testimony of Michelle M. Boswell, Staff Accountant, Accounting Division; and
2. Testimony of Evan D. Lawrence, Staff Engineer, Electric Division.

By copy of this letter, I am serving all parties of record.

Sincerely,

/s/ Heather Fennell
Staff Attorney
heather.fennell@psncuc.nc.gov

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PUBLIC

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1191

**Testimony of Michelle M. Boswell
On Behalf of the Public Staff
North Carolina Utilities Commission**

May 20, 2019

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

3 A. My name is Michelle M. Boswell. My business address is 430
4 North Salisbury Street, Raleigh, North Carolina.

5 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

6 A. I am an accountant in the Accounting Division of the Public Staff -
7 North Carolina Utilities Commission.

8 **Q. WOULD YOU BRIEFLY DISCUSS YOUR EDUCATION AND**
9 **EXPERIENCE?**

10 A. Yes. My education and experience are summarized in Appendix A
11 to my testimony.

12 **Q. WHAT ARE YOUR DUTIES?**

13 A. I am responsible for the performance of the following activities: (1)
14 the examination and analysis of testimony, exhibits, books and
15 records, and other data presented by utilities and other parties

1 involved in Commission proceedings; and (2) the preparation and
2 presentation to the Commission of testimony, exhibits, and other
3 documents in those proceedings. I have the further responsibility of
4 supervising the examination and analysis of testimony, exhibits,
5 books and records, and other data presented by electric utilities in
6 Commission proceedings.

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

8 A. The purpose of my testimony is to make a recommendation
9 regarding the results of the Public Staff's investigation of the
10 Renewable and Energy Efficiency Portfolio Standard (REPS)
11 Experience Modification Factor (EMF) rider, proposed by Duke
12 Energy Carolinas, LLC (DEC or the Company) in its application and
13 testimony filed on February 26, 2019, in this proceeding. The
14 REPS EMF is based on the difference between incremental REPS
15 compliance costs incurred and REPS rider revenues billed from
16 January through December 2018 (REPS EMF period or test
17 period). The REPS EMF is utilized to "true-up" the recovery of
18 reasonable and prudently incurred incremental REPS compliance
19 costs incurred during the test period.

20 **Q. PLEASE EXPLAIN THE REPS EMF RIDER BEING PROPOSED**
21 **BY DEC IN THIS PROCEEDING.**

1 A. On February 26, 2019, DEC filed its application and testimony
2 related to the incremental costs incurred for compliance with the
3 REPS. Williams Exhibit No. 4 indicates that DEC over-recovered
4 its incremental REPS compliance costs for the test period by
5 \$(1,471,965) for the residential class, \$(527,194) for the general
6 service class, and under-recovered its REPS compliance costs for
7 the test period by \$42,828 for the industrial class. These amounts,
8 when divided by the number of customer accounts in each class,
9 produce proposed annual North Carolina retail REPS EMF
10 decrements of \$(0.84) and \$(2.14) for residential and general
11 customers, respectively, and a proposed EMF annual increment of
12 \$9.00 for industrial customers. On a monthly basis, the proposed
13 North Carolina retail REPS EMF decrement riders are \$(0.07) and
14 \$(0.18) for residential and general customers, respectively, and a
15 monthly increment of \$0.75 for industrial customers, per customer
16 account. All of these values exclude the North Carolina regulatory
17 fee.

18 **Q. PLEASE DESCRIBE THE PUBLIC STAFF'S INVESTIGATION OF**
19 **THE REPS EMF INCREMENT RIDERS.**

20 A. The Public Staff's investigation included procedures intended to
21 evaluate whether the Company properly determined its per book
22 incremental compliance costs for the test period ended December

1 31, 2018. These procedures included a review of the Company's
2 filing and other Company data provided to the Public Staff.
3 Additionally, the procedures included a review of certain specific
4 types of expenditures impacting the Company's costs. Performing
5 the Public Staff's investigation required the review of numerous
6 responses to written and verbal data requests, along with
7 conference calls with Company personnel.

8 **Q. DID THE PUBLIC STAFF'S INVESTIGATION IDENTIFY ANY**
9 **ISSUES THAT RESULTED IN ADJUSTMENTS TO DEC'S**
10 **PROPOSED EMF INCREMENT RIDERS?**

11 A. Yes, we identified an issue in our investigation that resulted in an
12 adjustment to DEC's proposed EMF Increment Rider. The
13 adjustment relates to a specific expenditure DEC sought to recover
14 as a research cost pursuant to N.C. Gen. Stat. § 62-133.8(h)(1), as
15 discussed in greater detail in the testimony of Public Staff witness
16 Evan Lawrence. Consistent with witness Lawrence's
17 recommendation, I am recommending that the EMF increment
18 riders be adjusted to remove the research cost in question from the
19 EMF incremental costs, as shown in Boswell Exhibit 1.

1 **Q. BASED ON THE PUBLIC STAFF’S ADJUSTMENT, WHAT REPS**
2 **EMF INCREMENT/(DECREMENT) RIDERS ARE THE PUBLIC**
3 **STAFF RECOMMENDING?**

4 **A.** As a result of the Public Staff’s investigation, I am recommending
5 annual North Carolina retail REPS EMF increment/(decrement)
6 riders of \$(0.85), \$(2.20), and \$8.57, per customer account, for
7 DEC’s residential, general service, and industrial customers,
8 respectively, excluding the North Carolina regulatory fee. The
9 corresponding monthly rider amounts are \$(0.07), \$(0.18), and
10 \$0.71, per customer account.

11 **Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS**
12 **REGARDING DEC’S PROPOSED EMF RIDERS THAT DO NOT**
13 **RESULT IN AN ADJUSTMENT TO THE RIDERS AT THIS TIME?**

14 **A.** Yes. The Public Staff also reviewed the sale prices used by DEC
15 when it sells RECs to other electric power suppliers to help them
16 achieve compliance with the specific carveouts or “set-aside”
17 amounts in N.C. Gen. Stat. § 62-133.8(e) and (f), which require a
18 portion of each electric power suppliers’ REPS compliance
19 obligations to be met using renewable energy resources from swine
20 and poultry waste resources (“swine and poultry waste set-asides”),
21 and how this sale price should be treated for purposes of
22 determining the REPS rider. After its review and discussions with

1 the Company, the Public Staff recommends that the Company and
2 the Public Staff work together over the next year to review and
3 evaluate the sale price of set-aside RECS sold by DEC to other
4 electric power suppliers to aid in their REPS compliance efforts.

5 **Q. PLEASE DESCRIBE WHY THE PUBLIC STAFF RECOMMENDS**
6 **THAT THESE REC PRICES AND THEIR REGULATORY**
7 **TREATMENT BE FURTHER EVALUATED.**

8 A. As the Commission is aware, the swine and poultry waste set-
9 asides have been difficult for the electric power suppliers to
10 achieve, and the requirements have been delayed or modified on
11 several occasions by the Commission pursuant to its authority in
12 N.C. Gen. Stat. § 62-133.8(i)(2). Since 2014, the electric power
13 suppliers have been able to meet lower set-aside requirements for
14 poultry waste resources partially because DEC¹ periodically sold a
15 portion of the poultry RECs it originally acquired for its own REPS
16 compliance needs to other electric power suppliers that would not
17 otherwise be in a position to comply.² The Public Staff has
18 generally been supportive of these efforts by DEC to help all
19 electric power suppliers meet these statutory requirements.

¹ This discussion also equally applies to Duke Energy Progress, LLC (DEP), but for the purposes of this proceeding, my testimony will only refer to DEC.

² The Public Staff does not believe that DEC has sold any swine waste RECs to other electric power suppliers at this time for REPS compliance, but the same concerns raised regarding the price of poultry waste RECs may also equally apply to swine waste RECs in future years.

1 Historically, DEC has calculated the price for the sale of poultry
2 RECs to other North Carolina electric power suppliers based on

3 [BEGIN CONFIDENTIAL] [REDACTED]
4 [REDACTED]

5 [REDACTED]. [END CONFIDENTIAL] This methodology has been
6 accepted in previous REPS filings before the Commission. The use

7 [BEGIN CONFIDENTIAL] [REDACTED]
8 [REDACTED]

9 [REDACTED]
10 [REDACTED]

11 [REDACTED]
12 [REDACTED]

13 [REDACTED]
14 [REDACTED].

15 [END CONFIDENTIAL] In the present case, however, DEC

16 [BEGIN CONFIDENTIAL] [REDACTED]
17 [REDACTED]

18 [REDACTED]
19 [REDACTED]. [END

20 CONFIDENTIAL]

21 The Public Staff disagrees with DEC regarding this assumption.

22 [BEGIN CONFIDENTIAL] [REDACTED]

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED] . [END CONFIDENTIAL]

15 The Public Staff recognizes there are some [BEGIN
16 CONFIDENTIAL] [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]. [END CONFIDENTIAL] The
4 Public Staff also recognizes that DEC is not required to sell RECs
5 to other North Carolina electric power suppliers to help them
6 comply with the REPS requirements. Given all these factors, the
7 Public Staff believes it is in the best interest of all parties if this
8 issue is held open so that the Company and Public Staff can work
9 together to determine what, if any adjustments should be made to
10 the current sale price calculation to address the concerns described
11 later in my testimony.

12 **Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING**
13 **THE SALE PRICE OF RECS.**

14 A. First, as a result of this issue, I recommend that the ultimate
15 ratemaking treatment of [BEGIN CONFIDENTIAL] [REDACTED]
16 [REDACTED]
17 [REDACTED], [END CONFIDENTIAL] collected
18 by DEC in the EMF period from the sale of poultry RECs be held in
19 abeyance. DEC sold these RECs to other electric power suppliers
20 to help them reach the statewide poultry waste set-aside for 2018.
21 The Public Staff recommends that the abeyance continue until the
22 determination of the appropriate REC price is resolved, at which

1 point the proceeds can be assigned or allocated consistent with the
2 treatment deemed appropriate for those items. The 2018 poultry
3 waste set-aside requirement was modified by the Commission in its
4 October 8, 2018, *Order Modifying the Swine and Poultry Waste*
5 *Set-Aside Requirements and Providing Other Relief* in Docket No.
6 E-100, Sub 113.

7 Second, in determining the appropriate sales price of the set-aside
8 RECs sold by DEC, I recommend that the Company and the Public
9 Staff work together over the next year to review and evaluate
10 whether the sale price of set-aside RECS sold by DEC should
11 include the following considerations, and if so, how each should be
12 determined:

- 13 (1) overhead costs associated with obtaining the REC and
14 subsequent sale of the REC;
- 15 (2) an amount to mitigate the interest DEC may pay ratepayers
16 on any REPS EMF overcollection that results from the sale
17 of set-aside RECs;
- 18 (3) an amount to ensure that DEC's customers do not bear any
19 risk of REC contracts not materializing or resulting in lower
20 quantities of RECs being generated;

- 1 (4) an amount to provide a price signal to other electric power
2 suppliers to encourage them to continue to participate in the
3 development of swine and poultry waste-to-energy
4 resources without relying solely on DEC to provide the
5 needed set-aside RECs; and
- 6 (5) an amount to encourage DEC to sell RECs, when available,
7 to other North Carolina electric power suppliers for the
8 purpose of assisting with their compliance with the REPS
9 requirements.

10 Finally, I recommend that DEC address the issue of the sales prices
11 of RECs and any resolution of these issues in its direct testimony in
12 its next REPS cost-recovery proceeding.

13 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

14 A. Yes, it does.

MICHELLE M. BOSWELL

Qualifications and Experience

I graduated from North Carolina State University in 2000 with a Bachelor of Science degree in Accounting. I am a Certified Public Accountant.



I joined the Public Staff in September 2000. I have performed numerous audits and/or presented testimony and exhibits before the Commission addressing a wide range of electric, natural gas, and water topics. I have performed audits and/or presented testimony in DEC's 2010, 2015, and 2017 REPS Cost Recovery Rider; DEP's 2014, 2015, 2017, and 2018 REPS Cost Recovery Rider; the 2014 REPS Cost Recovery Rider for Dominion North Carolina Power (DNCP); the 2008 REPS Compliance Reports for North Carolina Municipal Power Agency 1, North Carolina Eastern Municipal Power Agency, GreenCo Solutions, Inc., and EnergyUnited Electric Membership; four recent Piedmont rate cases, PSNC's 2016 rate case, DNCP's 2012 rate case, DEP's 2013 and 2017 rate case, DEC's 2017 rate case, the 2018 fuel rider for Dominion Energy North Carolina, , several Piedmont, NUI, and Toccoa annual gas cost reviews; Piedmont and NUI's merger; and Piedmont and NCNG's merger.

Additionally, I have filed testimony and exhibits in numerous water rate cases and performed investigations addressing a wide range of topics and issues related to the water, electric, and telephone industries.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Sub 1191
ADJUSTMENT TO RESEARCH COSTS
For the Year Ending December 31, 2018

Boswell Exhibit 1
Schedule 1

Line No.	Item	Amount
	Research Cost Detail:	1/
1	CAPER - Short Course Development	
2	CAPER - Smart Battery Gauge	
3	Clemson University - Small DG Interface Testing	
4	Closed Loop Biomass	
5	Coalition for Renewable Natural Gas Membership	
6	DER Risks to Transformers and Transmission	
7	Eos Energy Storage Technology Development - McAlpine	
8	EPRI Membership	
9	EPRI - Inverter Onboard Islanding Detection Case Study Project	
10	ETO - Mitigation of Transformer High Inrush Current	
11	FREEDM Center - NCSU	
12	IEEE 1547 Conformity Assessment Test	
13	Loyd Ray Farms - Duke University	
14	Marshall Solar Site Storage Integration and Controller Design	
15	Mini-DVAR	
16	NCSU - ETO - Grid-forming Battery Energy Storage System Characterization &	
17	NCSU - Interactions of PV Installations with Distribution Systems	
18	PNNL - Dynamic Var Compensator Pilot	
19	Research Triangle Institute - Biogas Utilization in NC	
20	Rocky Mountain Institute - eLab	
21	Swine Extrusion/Poultry Mortality - NC State Natural Resources Foundation	
22	UNCC - Evaluation of Fault Scenarios and Mitigation Techniques	
23	UNCC - Hardware Cyber Security for DER Inverters	

24	Total Research Cost	\$	938,393
25	Adjustment to remove research costs per Public Staff		 2/
26	Total Research Costs per Public Staff (L24 + L25)		

1/ Jennings Confidential Exhibit 3, Lines 28 through 51.

2/ Recommended by Public Staff witness Lawrence.

3/ Confidential Information Highlighted

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Sub 1191
EMF INCREMENTAL COST UNDER(OVER) COLLECTION
For the Year Ending December 31, 2018

Boswell Exhibit 1
Schedule 2

		North Carolina Retail Only						
Line No.	Account Type	Allocated Annual Set-aside, Other Incremental, Solar Rebate Program, and	Allocated Annual General Incremental Costs	Total Incremental Costs Incurred May 2018	Actual NC Retail REPS Revenues Realized - May 2018 through	REPS EMF - Under/(Over)-Collection, before Interest	Interest on Over-collection ⁽¹⁾	REPS EMF - Under/(Over)-Collection
1	Residential	\$ 6,394,131	\$ 4,292,696	\$ 10,686,827	\$ 11,538,330	\$ (851,503)	\$ (127,725)	\$ (979,228)
2	General	\$ 5,064,790	\$ 2,778,997	\$ 7,843,787	\$ 7,989,270	\$ (145,483)	\$ (21,822)	\$ (167,305)
3	Industrial	\$ 660,492	\$ (14,819)	\$ 645,673	\$ 574,064	\$ 71,609	\$ -	\$ 71,609
4	Total	\$ 12,119,413	\$ 7,056,874	\$ 19,176,287	\$ 20,101,664	\$ (925,377)	\$ (149,547)	\$ (1,074,924)

Note:
(1) Interest calculated at annual rate of 10% for number of months from mid-point of EMF period to mid-point of prospective rider billing period.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Sub 1191
CALCULATION OF REPS RIDER COMPONENTS
For the Year Ending December 31, 2018

Boswell Exhibit 1
Schedule 3

OFFICIAL COPY
May 20 2019

North Carolina Retail									
Line No.	Customer Class	Total Projected Number of Accounts -Duke Retail(1)	Annual REPS EMF Under/(Over)- Collection	Receipts for Contract Amendments, Penalties, Change-of- control, Etc. (3)		Total EMF costs/(credits)	Monthly EMF Rider(2)	Projected Total Incremental Costs	Monthly REPS Rider(2)
1	Residential	1,743,267	\$ (979,228)	\$	(510,125)	\$ (1,489,353)	\$ (0.07)	\$ 19,584,094	\$ 0.94
2	General	245,810	\$ (167,305)	\$	(374,416)	\$ (541,721)	\$ (0.18)	\$ 14,228,042	\$ 4.82
3	Industrial	4,760	\$ 71,609	\$	(30,821)	\$ 40,788	\$ 0.71	\$ 1,172,812	\$ 20.53
4		1,993,837	\$ (1,074,924)	\$	(915,362)	\$ (1,990,286)		\$ 34,984,948	

Compare total annual REPS charges per account to per-account cost caps:

North Carolina Retail									
Line No.	Customer Class	Monthly EMF Rider(2)	Monthly REPS Rider(2)	Combined Monthly Rider(2)	Regulatory Fee Multiplier	Total Monthly REPS Charge including Regulatory Fee	Total Annual REPS Charge including Regulatory Fee	Per-Account Cost Cap	
									5
6	General	\$ (0.18)	\$ 4.82	\$ 4.64	1.001402	\$ 4.65	\$ 55.80	\$ 150.00	
7	Industrial	\$ 0.71	\$ 20.53	\$ 21.24	1.001402	\$ 21.27	\$ 255.24	\$ 1,000.00	

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-7, SUB 1191**

**Testimony of Evan D. Lawrence
On Behalf of the Public Staff
North Carolina Utilities Commission**

May 20, 2019

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

3 A. My name is Evan D. Lawrence. My business address is 430 North
4 Salisbury Street, Raleigh, North Carolina.

5

6 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

7 A. I am an engineer in the Electric Division of the Public Staff.

8

9 **Q. WOULD YOU BRIEFLY DISCUSS YOUR EDUCATION AND**
10 **EXPERIENCE?**

11 A. Yes. My education and experience are summarized in Appendix A to
12 my testimony.

13

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

15 A. The purpose of my testimony is to make recommendations to the
16 Commission on the Renewable Energy and Energy Efficiency
17 Portfolio Standard (REPS) Compliance Report and the Application
18 for Approval of the REPS Cost Recovery Rider filed by Duke Energy

1 Carolinas, LLC (DEC, or the Company), on February 26, 2019. I also
2 make recommendations on DEC's "Other Incremental Costs" (costs
3 other than the costs of purchased renewable energy and renewable
4 energy certificates (RECs)), specifically, DEC's proposed research
5 costs.

6

7

REPS Compliance

8

9 **Q. IS DEC PROVIDING REPS COMPLIANCE SERVICES TO ANY**
10 **OTHER ELECTRIC POWER SUPPLIERS?**

11 A. Yes. For 2018 REPS compliance, DEC was contractually obligated
12 to acquire RECs and provide reporting services to meet the REPS
13 compliance requirements of the following wholesale customers: Blue
14 Ridge Electric Membership Corporation, Rutherford Electric
15 Membership Corporation, City of Concord, Town of Dallas, Town of
16 Forest City, Town of Highlands, and City of Kings Mountain
17 (collectively, Wholesale Customers). DEC's contractual obligations
18 to provide REPS compliance services to the City of Concord and the
19 City of Kings Mountain ended on December 31, 2018. DEC
20 maintains separate accounts in the North Carolina Renewable
21 Energy Tracking System (NC-RETS) for itself and for each
22 Wholesale Customer. Commission Rule R8-67(h)(2) requires that all

1 RECs used for REPS compliance in North Carolina be tracked in NC-
2 RETS.

3

4 The REPS compliance costs for the Wholesale Customers are not
5 included in DEP's requested REPS cost recovery rider.

6

7 **Q. PLEASE DESCRIBE THE 2018 REPS COMPLIANCE**
8 **REQUIREMENTS FOR DEC AND ITS WHOLESALE**
9 **CUSTOMERS.**

10 A. For 2018 compliance, DEC needed to obtain a sufficient number of
11 general RECs,¹ energy efficiency certificates (EECs), and RECs
12 derived from other eligible sources so that the total equaled 10% of
13 the 2017 North Carolina retail electricity sales of itself and the
14 Wholesale Customers. Additionally, DEC needed to pursue
15 retirement of sufficient solar RECs to match 0.2% of retail sales in
16 2017 for itself and the Wholesale Customers, sufficient swine waste
17 derived RECs to match 0.02% of retail sales in 2017 for itself only,
18 and sufficient poultry waste RECs to match their pro-rata share of
19 the poultry waste set-aside of 300,000 MWh required by N.C. Gen.
20 Stat. § 62-133.8(f), as modified by the Commission's October 8,

¹ General RECs include all RECs other than those used to meet the solar, swine waste, and poultry waste set-asides. Unlike RECs used for the set-asides, general RECs and EECs are interchangeable for REPS compliance purposes, with the exception that EECs are limited to 25 percent of the total compliance requirement for the investor-owned utilities.

1 2018, *Order Modifying the Swine and Poultry Waste Set-Aside*
2 *Requirements and Providing Other Relief* in Docket No. E-100, Sub
3 113. The October 8 Order modified the swine waste REC
4 requirement under N.C. Gen. Stat. § 62-133.8(e) to lower the 2018
5 compliance requirement to 0.02% of 2017 sales for the investor-
6 owned utilities (IOUs) only.

7

8 **Q. HAVE YOU REVIEWED THE REPS COMPLIANCE REPORT?**

9 A. Yes. DEC’s REPS Compliance Report is included as Exhibit 1 to the
10 testimony of DEC witness Megan Jennings. Based on its review, the
11 Public Staff has determined that DEC’s REPS Compliance Report
12 meets the requirements of N.C. Gen. Stat. § 62-133.8 and
13 Commission Rule R8-67(c) for both DEC and the Wholesale
14 Customers. Accordingly, the Public Staff recommends that the
15 Commission approve DEC’s 2018 REPS Compliance Report.

16

17 Research Costs

18

19 **Q. PLEASE DISCUSS THE RESEARCH COSTS DEC HAS**
20 **INCLUDED FOR COST RECOVERY.**

21 A. On pages 30 through 40 of her testimony, DEC witness Megan
22 Jennings summarizes the results of the 23 research expenditures for
23 which DEC is seeking cost recovery in this proceeding. The research

1 costs included total \$938,393 which is below the \$1,000,000
2 maximum annual amount allowed, as specified in N.C. Gen. Stat. §
3 62-133.8(h)(1)(b). The included projects generally deal with
4 operation of distributed energy resources (DERs) and advancing the
5 understanding of optimal ways to integrate DERs into the power grid.
6 Also included are fees for membership in research organizations.
7

8 **Q. DO YOU BELIEVE THAT ALL OF THE COSTS DEC HAS**
9 **INCLUDED QUALIFY AS RESEARCH COSTS UNDER N.C. GEN.**
10 **STAT. § 62-133.8(h)(1)(b)?**

11 A. No. N.C. Gen. Stat. § 62-133.8(h)(1)(b) states that a public electric
12 utility may recover costs that “[f]und research that encourages the
13 development of renewable energy, energy efficiency, or improved air
14 quality, provided those costs do not exceed one million dollars
15 (\$1,000,000) per year.” The Public Staff does not believe that the
16 “CAPER, Short Course Development” described in DEC witness
17 Megan Jennings testimony beginning on page 31, line 7, with the
18 course syllabus included as Jennings Exhibit No. 5, qualifies as
19 research, nor as an incremental cost to be recovered within REPS.
20

1 **Q. PLEASE EXPLAIN THE PUBLIC STAFF’S UNDERSTANDING OF**
2 **THE COURSE AND RELATED COSTS.**

3 A. It is the Public Staff’s understanding that the costs associated with
4 this course are related to the development of the course and not for
5 any course materials or registration fees. According to witness
6 Jennings, the course, titled “Fundamentals of Power Engineering
7 and Integration of Distributed Energy Resources,” is designed to
8 cover topics such as three-phase fundamentals, transformers, power
9 flows, power system planning, analysis, protection, dynamics,
10 stability, control, transients, and integration into the grid of distributed
11 energy resources. Witness Jennings also states “the course is
12 designed to act as a refresher for the basics and as a brief
13 introduction for more advanced topics for industry professionals who
14 have completed at least a Bachelor of Science degree in Electrical
15 Engineering or have adequate work experience.”

16
17 DEC explained during a conference call with the Public Staff that the
18 course would help employees better understand how DERs
19 interconnect and interact with the grid, as well as impacts of DERs
20 on grid operation. According to the syllabus, the textbook that will be
21 used is Power System Analysis & Design, 6th edition, by Glover,
22 Overbye & Sarma, CL Engineering. This book is a standard text

1 used in many undergraduate engineering programs for teaching
2 basic power system concepts.²

3

4 **Q. PLEASE EXPLAIN WHY THE PUBLIC STAFF DOES NOT AGREE**
5 **THAT THE COSTS FOR THE COURSE SHOULD NOT QUALIFY**
6 **AS RESEARCH COSTS.**

7 A. The Public Staff believes that while this course could help the
8 attendees learn or refresh their understanding of the underlying
9 physics and engineering of electrical engineering principals present
10 in the electric grid, the development of a basic power system
11 concepts review course does not constitute “research” that advances
12 the development of renewable energy.

13

14 **Q. WHAT IS THE PUBLIC STAFF’S RECOMMENDATION WITH**
15 **REGARD TO THE “CAPER – SHORT COURSE DEVELOPMENT”**
16 **RESEARCH COSTS?**

17 A. The Public Staff recommends that the costs associated with the short
18 course development should be disallowed. The Public Staff believes
19 that, research costs should have a direct relationship to the
20 development of renewable energy, energy efficiency, or improved air

² See, e.g. the following course descriptions online:

<https://ece.illinois.edu/academics/courses/profile/ECE476>,

<http://www.ece.uidaho.edu/ee/power/ECE421/Lectures/L1/syllabus.pdf>.

<http://www.ece.uidaho.edu/ee/power/ECE422/Lectures18/Lecture1/syllabus.pdf>.

<http://engineering.sfsu.edu/academics/undergraduate/major/electrical/pdfs/engr448f08.pdf>.

1 quality in order to be eligible for cost recovery as an incremental cost
2 for REPS compliance under N.C. Gen. Stat. § 62-133.8(h)(1)(b). As
3 such, I recommend that DEC's REPS Experience Modification
4 Factor (EMF) increment riders be adjusted to remove the research
5 cost in question from the EMF incremental costs. This adjustment is
6 included in Exhibit 1 of Public Staff witness Michelle Boswell's
7 testimony.

8

9 **Competitive Procurement of Renewable Energy Program Costs**

10

11 **Q. HAS DEC REQUESTED TO RECOVER ANY COSTS RELATED TO**
12 **THE COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY**
13 **PROGRAM IN THIS PROCEEDING?**

14 **A.** No, DEC has not included any costs related to the Competitive
15 Procurement of Renewable Energy (CPRE) Program, enacted in
16 2017 as part of North Carolina House Bill 589 (HB 589), in this
17 proceeding. DEC witness Jennings states that since DEC will use
18 the RECs acquired through CPRE for REPS compliance, DEC
19 believes that CPRE program implementation costs could be
20 recovered through the REPs Rider. She states, however, that DEC
21 has elected to recover the reasonable and prudent costs incurred to
22 implement the CPRE Program through the CPRE Rider as
23 contemplated under Commission Rule R8-71(j).

1

2 **Q. DO YOU AGREE THAT CPRE COSTS CAN BE RECOVERED**
3 **THROUGH THE REPS RIDER?**

4 A. Generally I do not agree with this statement, although it is difficult to
5 definitively conclude before any CPRE costs are reviewed, and
6 impossible to foresee every scenario that may occur.

7

8 **Q. PLEASE EXPAND ON WHY YOU DISAGREE THAT CPRE COSTS**
9 **SHOULD BE RECOVERED THROUGH THE REPS RIDER.**

10 A. There are multiple reasons why CPRE costs should be recovered
11 only through the CPRE rider, as opposed to the REPS rider:

12 (1) N.C. Gen. Stat. §§ 62-110.8(g) and (h), as enacted by HB 589,
13 authorized the Commission to establish an annual cost
14 recovery mechanism for CPRE cost recovery. For other new
15 programs established as part of HB 589 that the General
16 Assembly intended the costs to be recovered through the
17 REPS rider, such as the solar rebate program established in
18 N.C. Gen. Stat. § 62-155(f), the General Assembly provided
19 clear authority for the recovery of those costs in the REPS
20 rider.³

³ N.C. Gen. Stat. § 62-155(f) provides, in part, that:

“Each public utility required to offer the incentive program pursuant to this subsection shall be authorized to recover all reasonable and prudent costs of incentives provided to customers and program administrative costs [...] in the costs recoverable by the public utility pursuant to G.S. 62-133.8(h). Nothing in this section shall prevent the reasonable and prudent costs of

- 1 (2) REPs costs are recovered, by statute, on a per-account basis
2 with the largest percentage of the utility’s REPS costs being
3 recovered from residential customers. This disparity grows as
4 the incremental costs increase. As the general service and
5 industrial classes are likely to reach their cost caps first, all
6 remaining costs are assigned to the residential class, creating
7 an even greater class disparity. By adding in program costs
8 that should be recovered elsewhere, the allocation of REPS
9 costs among different customer classes is further distorted.
- 10 (3) Other REPS compliance methods such as EECs that are
11 derived from the DSM/EE programs are provided for REPS
12 compliance without any costs for the EECs being recovered
13 through the REPS rider.

14

15 **Q. HAS DEC DISCUSSED THE RECOVERY OF CPRE COSTS IN**
16 **THE REPS RIDER IN OTHER PROCEEDINGS?**

- 17 A. Yes. In Docket No. E-100, Sub 150, DEC and Duke Energy
18 Progress, LLC (DEP), jointly filed their Reply Comments and
19 Amended Proposed Rule to Implement N.C. Gen. Stat. § 62-110.8
20 on September 8, 2017. On page 13 of those comments, DEC and
21 DEP state:

a utility's programs [...] from being reflected in a utility's rates to be recovered through the annual rider established pursuant to G.S. 62-133.8(h).”

1 Specific to the interrelationship with REPS, the
2 Companies do not anticipate any CPRE Program costs
3 being recovered through the REPS rider because N.C.
4 Gen. Stat. § 62-110.8(b)(2) caps CPRE Program PPA
5 purchases, including the cost of RECs, at or below the
6 Companies' avoided cost. Therefore, the full cost of
7 bundled CPRE Program RECs would be recovered
8 through the CPRE Program rider mechanism. Similar
9 to the approach used today for energy efficiency
10 credits applied towards REPS compliance, the cost of
11 RECs associated with renewable energy resources
12 procured under the CPRE Program would simply be
13 assigned \$0 cost for REPS compliance.
14

15

16 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION WITH**
17 **REGARD TO THE RECOVERY OF CPRE COSTS IN THE REPS**
18 **RIDER**

19 A. We recommend the Commission address this issue if the Company
20 requests CPRE cost recovery in a REPS rider proceeding. However,
21 the Public Staff believes it would be inappropriate for the Company
22 to request recovery for CPRE costs in a REPS proceeding prior to
23 the Commission considering this issue in a CPRE cost recovery rider
24 proceeding.

25

26 **REPS Rates**

27

28 **Q. WHAT RATES HAS DEC REQUESTED FOR ITS EMF AND REPS**
29 **RIDERS?**

- 1 A. In its Application, DEC requested the following monthly charges for
 2 the Billing and Experience Modification Factor (EMF) components of
 3 the total REPS rate, excluding the regulatory fee:

DEC's Rider Request Filed on February 26, 2019			
Customer Class	Billing Period Rate	EMF Rate	Total REPS Rate
Residential	\$0.94	\$(0.07)	\$0.87
General	\$4.82	\$(0.18)	\$4.64
Industrial	\$20.53	\$0.75	\$21.28

- 4
 5 These monthly charges are below the cost caps set forth in N.C.
 6 Gen. Stat. § 62-133.8(h)(4). With the requested rates, the residential
 7 customer class is the closest to the cost cap at approximately 39%
 8 of the annual per account charges allowed. The general service and
 9 industrial classes are at approximately 37% and 26% of their cost
 10 caps, respectively.

- 11
 12 **Q. WHAT RATES DOES THE PUBLIC STAFF RECOMMEND FOR**
 13 **THE EMF AND REPS RIDERS?**

- 14 A. The Public Staff is recommending the following Billing and EMF
 15 components of the total REPS rate, excluding the regulatory fee:

16

Public Staff's Recommended Rates			
Customer Class	Billing Period Rate	EMF Rate	Total REPS Rate
Residential	\$0.94	\$(0.07)	\$0.87
General	\$4.82	\$(0.18)	\$4.64
Industrial	\$20.53	\$0.71	\$21.24

1

2

These rates reflect the adjustment made to remove the "CAPER – Short Course Development" research costs.

3

4

5

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

6

A. Yes, it does.

APPENDIX A

1

2

3

Evan D. Lawrence

4 I graduated from East Carolina University in Greenville, North
5 Carolina in May of 2016 earning a Bachelor of Science degree in
6 Engineering and a concentration in Electrical Engineering. I started my
7 current position with the Public Staff in September of 2016. Since that time
8 my duties and responsibilities have focused around the review of renewable
9 energy projects, rate design, and renewable energy portfolio standards
10 compliance. I have filed affidavits in Dominion Energy North Carolina's
11 2017 and 2018 REPS cost recovery proceeding, testimony in New River
12 Light and Power's (NRLP) most recent rate case proceeding, and testimony
13 in additional small power producer and merchant electric generating
14 facilities (EMPs). I have also assisted other Public Staff personnel with the
15 review and investigation of REPS Compliance Plans filed by the electric
16 power suppliers, previous DEC and DEP REPS cost recovery proceedings,
17 and multiple other cases.