

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-7, SUB 1246

TESTIMONY OF JAY B. LUCAS
ON BEHALF OF THE PUBLIC STAFF
NORTH CAROLINA UTILITIES COMMISSION

May 10, 2021

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

3 A. My name is Jay B. Lucas. My business address is 430 North
4 Salisbury Street, Raleigh, North Carolina.

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

6 A. I am the manager of the Electric Section – Operations and Planning
7 in the Public Staff's Energy Division.

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

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

12 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

13 A. The purpose of my testimony is to make recommendations to the
14 Commission on the Renewable Energy and Energy Efficiency
15 Portfolio Standard (REPS) Compliance Report and the Application
16 for Approval of the REPS Cost Recovery Rider (REPS Rider) filed by
17 Duke Energy Carolinas, LLC (DEC, or the Company), on February

1 23, 2021. I also make recommendations on the supplemental
2 testimony and exhibits filed by DEC on May 5, 2021. More
3 specifically, I make recommendations on the following: (1) REPS
4 compliance; (2) research costs; (3) allocation of general¹ renewable
5 energy certificates (RECs) and energy efficiency certificates (EECs)
6 among the residential, general service, and industrial customers to
7 determine credit for EECs that each customer class contributes; (4)
8 correction of the number of RECs earned from net metering non-
9 time-of-use demand (NMNTD) customers, and (5) removal of RECs
10 that DEC recorded from time-of-use (TOU) net metered customers.

11 **Q. WHAT TIME PERIODS APPLY TO THIS PROCEEDING?**

12 A. The Experience Modification Factor (EMF) period in this proceeding
13 is January 1, 2020, through December 31, 2020. The billing period
14 in this proceeding is September 1, 2021, through August 31, 2022.

15 **REPS Compliance**

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

18 A. Yes. For 2020 REPS compliance, DEC was contractually obligated
19 to acquire RECs and provide reporting services to meet the REPS

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 largely interchangeable for REPS compliance purposes, with the exception described below.

1 compliance requirements of the following wholesale customers: Blue
2 Ridge Electric Membership Corporation, Rutherford Electric
3 Membership Corporation, Town of Dallas, Town of Forest City, and
4 Town of Highlands (collectively, Wholesale Customers). DEC
5 maintains separate accounts in the North Carolina Renewable
6 Energy Tracking System (NC-RETS) for itself and for each
7 Wholesale Customer. Commission Rule R8-67(h)(2) requires that all
8 RECs used for REPS compliance in North Carolina be tracked in NC-
9 RETS.

10 The REPS compliance costs for the Wholesale Customers are not
11 included in DEC's requested REPS cost recovery rider.

12 **Q. PLEASE DESCRIBE THE 2020 REPS COMPLIANCE**
13 **REQUIREMENTS FOR DEC AND ITS WHOLESALE CUSTOMERS.**

14 A. For 2020 compliance, DEC needed to pursue retirement of a
15 sufficient number of general RECs, EECs, and RECs derived from
16 other eligible sources so that the total equaled 10% of DEC's and the
17 Wholesale Customers' 2019 North Carolina retail electricity sales. To
18 meet the solar energy requirement in N.C. Gen. Stat. § 62-133.8(d),
19 DEC needed to pursue retirement of sufficient solar RECs to match
20 0.20% of the 2019 North Carolina retail electricity sales of DEC and
21 the Wholesale Customers.

1 The Commission's December 16, 2019 *Order Modifying the Swine*
2 *and Poultry Waste Set-Aside Requirements and Providing Other*
3 *Relief* (2019 Order) in Docket No. E-100, Sub 113, set the swine
4 waste requirement in N.C. Gen. Stat. § 62-133.8(e) at 0.07% of sales
5 for 2020. The 2019 Order also set the state-wide poultry waste REC
6 requirement at 700,000 megawatt-hours (MWh).

7 For 2020, DEC and the Wholesale Customers were able to comply
8 with the 2019 Order for the poultry waste requirement. DEC was able
9 to comply with the swine waste requirement, but the Wholesale
10 Customers were not.

11 The Commission's December 30, 2020, *Order Modifying the Swine*
12 *Waste Set-Aside Requirements and Providing Other Relief* (2020
13 Order) in Docket No. E-100, Sub 113, eliminated the Wholesale
14 Customers' requirement in N.C. Gen. Stat. § 62-133.8(e) for swine
15 waste energy, but not DEC's requirement.

16 To meet the swine waste set-aside requirement for 2020, DEC
17 needed to pursue retirement of sufficient swine waste-derived RECs
18 to match 0.07% of retail sales in 2019 as required in the 2019 Order.
19 To meet the poultry waste set-aside requirement, DEC and the
20 Wholesale Customers needed to pursue retirement of sufficient
21 poultry waste-derived RECs to match their pro-rata share of the
22 poultry waste set-aside of 700,000 MWh or the thermal equivalent.

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

2 A. Yes. DEC's 2020 REPS Compliance Report is included as Exhibit 1
3 to the direct testimony of DEC witness Megan Jennings. Based on
4 our review, the Public Staff believes that DEC's REPS Compliance
5 Report meets the requirements of N.C. Gen. Stat. § 62-133.8 and
6 Commission Rule R8-67(c) for both DEC and the Wholesale
7 Customers. Accordingly, the Public Staff recommends that the
8 Commission approve DEC's 2020 REPS Compliance Report.

9 **Research Costs**

10 **Q. PLEASE DISCUSS THE RESEARCH COSTS DEC HAS**
11 **INCLUDED FOR COST RECOVERY.**

12 A. On pages 32 through 41 of her direct testimony, witness Jennings
13 summarizes the results of the 20 research expenditures for which
14 DEC is seeking cost recovery in this proceeding. The anticipated
15 research costs total \$995,700 in the EMF period, which is below the
16 \$1,000,000 maximum annual amount allowed, as specified in N.C.
17 Gen. Stat. § 62-133.8(h)(1)(b).

1 Q. DO YOU BELIEVE ALL OF THE COSTS DEC HAS INCLUDED
2 QUALIFY AS RESEARCH “THAT ENCOURAGES THE
3 DEVELOPMENT OF RENEWABLE ENERGY, ENERGY
4 EFFICIENCY, OR IMPROVED AIR QUALITY,” CONSISTENT WITH
5 N.C. GEN. STAT. § 62-133.8(h)(1)(b)?

6 A. Yes.

7 **Allocation of General RECs and EECs**

8 Q. PLEASE DESCRIBE HOW DEC HAS ALLOCATED GENERAL
9 RECS AND EECs TO SET RATES IN THE REPS RIDER.

10 A. In DEC’s 2012 REPS rider proceeding in Docket No. E-7, Sub 1008,
11 DEC and the Public Staff agreed on a method to give credit to each
12 of the three customer classes for the EECs they create through the
13 Energy Efficiency (EE) and Demand Side Management (DSM) rider.
14 The residential, general service, and industrial customers participate
15 in EE-DSM programs differently and pay different EE-DSM rider
16 rates. Allocating EECs used to comply with REPS according to the
17 relative contribution of each customer class is a fair method of giving
18 credit for these contributions. EECs are largely interchangeable with
19 general RECs with the limitation that electric public utilities can only
20 use EECs to meet 25% of the REPS requirement through 2020. This
21 limit increases to 40% in 2021.

1 To determine the value of EECs, DEC separates general REC costs
2 from all other REPS costs including the costs associated with the
3 solar, swine waste, and poultry waste set asides. In 2013, DEC
4 began using solar RECs to meet the general REC requirements
5 because of the significant decrease in the cost of solar energy and
6 included this transfer in its EEC credit calculations.

7 **Q. WHAT ARE THE RECENT RESULTS OF THE ARRANGEMENT**
8 **THAT YOU DESCRIBE ABOVE?**

9 A. In last year's REPS proceeding, DEC used the same method that it
10 has used since 2013 to determine the REPS rates for each customer
11 class. However, the calculations resulted in a slight negative billing
12 period rate for industrial customers. DEC followed the same method
13 in this year's REPS proceeding, which resulted in a much larger
14 negative billing period rate for industrial customers. The Public Staff
15 believes industrial customers should not be subsidized by residential
16 and general service customers through the REPS rider simply
17 because a REPS compliance program exists, no matter how many
18 EECs they have created.

19 Even with the allowed use of EECs at 40% of the REPS requirement
20 for 2021 and beyond, DEC must still procure a large number of
21 general RECs to meet its REPS compliance requirements. **[BEGIN**
22 **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]. [END
14 CONFIDENTIAL]

15 **Q. WHAT DOES THE PUBLIC STAFF RECOMMEND TO SOLVE THE**
16 **PROBLEM OF A NEGATIVE BILLING PERIOD RATE FOR**
17 **INDUSTRIAL CUSTOMERS?**

18 A. The Public Staff and DEC have informally discussed this issue and
19 have agreed upon a solution. On May 5, 2021, DEC witness Veronica
20 Williams filed supplemental testimony with supplemental Exhibits 2
21 and 3 using general RECs and EECs needed for compliance during
22 the EMF and billing periods to calculate a credit to each customer
23 class for the EECs it contributes. Previously, DEC and the Public

1 Staff had agreed to using all general RECs and EECs that DEC
2 accumulated during those periods for the calculations. The
3 calculations in the supplemental exhibits of witness Williams reduce
4 the effect of the number of solar RECs and EECs that DEC
5 accumulates but will not need until well after the upcoming billing
6 period. The Public Staff recommends that the Commission accept
7 the rate calculations in the supplemental testimony of witness
8 Williams.

9 **Correction of RECs Earned from NMNTD Customers**

10 **Q. HOW DOES DEC DETERMINE THE NUMBER OF RECS EARNED**
11 **FROM NMNTD CUSTOMERS?**

12 A. The Commission's *Order Amending Net Metering Policy* issued on
13 March 31, 2009, in Docket No. E-100, Sub 83 (2009 Order), allowed
14 electric public utilities to keep any RECs earned by the NMNTD
15 customers. The Commission's *Order Approving Rider and Granting*
16 *Waiver Request* issued on June 5, 2018, in Docket No. E-7, Sub 1113
17 (2018 Order), prescribed the method by which DEC can determine
18 the number of these RECs by requiring the use of estimation
19 software (PVWatts™) and by requiring site visits to determine the
20 software's effectiveness for two years after the date of the order.

1 **Q. WHAT HAS WITNESS JENNINGS PROPOSED IN HER DIRECT**
2 **AND SUPPLEMENTAL TESTIMONY REGARDING THE NMNTD**
3 **RECS?**

4 A. In her direct testimony, witness Jennings explained that a
5 comparison of the site visit data to the PVWatts™ data showed that
6 in 2019, the actual output of the net metered systems was 96% of
7 the output shown by PVWatts™ and in 2020, it was 95% of the output
8 shown by PVWatts™. In her supplemental testimony, witness
9 Jennings revised these percentages to 97% and 89% respectively or
10 an average of 93%. In response to a Public Staff data request, DEC
11 provided calculations demonstrating that the NMNTD systems
12 produce 1.2 megawatt hours per year on average for every kilowatt
13 of installed direct current capacity.

14 In her direct testimony, witness Jennings explained that DEC has
15 completed the two-year study required by the Commission's 2018
16 Order and recommended that no further site visits are necessary.

17 **Q. WHAT DOES THE PUBLIC STAFF RECOMMEND IN THIS**
18 **PROCEEDING REGARDING THE CALCULATION OF NMNTD**
19 **RECS?**

20 A. The Public Staff recommends that the Commission accept the
21 changes in calculating the number of NMNTD RECs as shown in the
22 supplemental testimony of witness Jennings and that these systems

1 produce 1.2 megawatt hours per year on average for every kilowatt
2 of installed direct current capacity. The Public Staff also recommends
3 that the Commission not require DEC to complete further site visits
4 to verify the accuracy of the number of RECs determined by
5 PVWatts™; however, DEC may need to recheck the accuracy of
6 PVWatts™ at some time in the future.

7 **DEC's Removal of RECs Earned by**
8 **TOU Net Metered Customers**

9 **Q. WHY DOES DEC WANT TO REMOVE THE RECS EARNED BY**
10 **TOU NET METERED CUSTOMERS FROM NC-RETS?**

11 A. The 2009 Order does not allow DEC to keep RECs earned by net
12 metered customers that are on TOU rates with a demand charge
13 (TOUD). DEC inadvertently claimed some RECs from these
14 customers in previous years and now plans to correct the error. The
15 supplemental testimony of witness Jennings filed on May 5, 2021,
16 describes DEC's plan for correction.

17 **Q. WHAT DOES THE PUBLIC STAFF RECOMMEND REGARDING**
18 **DEC'S REMOVAL OF RECS EARNED BY TOUD NET METERED**
19 **CUSTOMERS FROM NC-RETS?**

20 A. On May 10, 2021, the Public Staff presented a proposed order
21 regarding these RECs to the Commission at its Regular Staff
22 Conference. The Public Staff recommended and the Commission

1 approved DEC to work with the NC-RETS Administrator to: (1)
 2 remove any improperly claimed RECs from NC-RETS; and (2) select
 3 for retirement, RECs to replace any prior improperly claimed RECs,
 4 in addition to the RECs needed for 2020 REPS compliance.

5 **REPS Rates**

6 **Q. WHAT RATES HAS DEC REQUESTED FOR ITS REPS RIDER?**

7 A. In its Application, DEC requested the following monthly rates for the
 8 EMF and billing period components and the total REPS rate,
 9 excluding the regulatory fee:

DEC's Rider Request Filed on February 23, 2021			
Customer Class	Billing Period Rate	EMF Rate	Total REPS Rate
Residential	\$0.11	\$0.99	\$1.10
General	\$0.76	\$4.24	\$5.00
Industrial	\$7.60	\$(13.62)	\$(6.02)

10 **Q. WHAT RATES DO DEC AND THE PUBLIC STAFF CURRENTLY**
 11 **RECOMMEND FOR THE REPS RIDERS?**

12 A. The Public Staff agrees with the rates in the supplemental testimony
 13 filed by witness Williams on May 5, 2021. The Public Staff
 14 recommends that the Commission accept witness Williams' EMF and

1 billing period components and the total REPS rate, excluding the
2 regulatory fee, as follows:

Rates Recommended by DEC and the Public Staff			
Customer Class	Billing Period Rate	EMF Rate	Total REPS Rate
Residential	\$0.84	\$0.10	\$0.94
General	\$4.35	\$0.78	\$5.13
Industrial	\$18.00	\$10.99	\$28.99

3 These monthly rates are below the cost caps set forth in N.C. Gen.
4 Stat. § 62-133.8(h)(4).

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

6 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

JAY B. LUCAS

I graduated from the Virginia Military Institute in 1985, earning a Bachelor of Science Degree in Civil Engineering. Afterwards, I served for four years as an engineer in the Air Force performing many civil and environmental engineering tasks. I left the Air Force in 1989 and attended the Virginia Polytechnic Institute and State University (Virginia Tech), earning a Master of Science degree in Environmental Engineering. After completing my graduate degree, I worked for an engineering consulting firm and worked for the North Carolina Department of Environmental Quality in its water quality programs. Since joining the Public Staff in January 2000, I have worked on utility cost recovery, renewable energy program management, customer complaints, and other aspects of utility regulation. I am a licensed Professional Engineer in North Carolina.