

INFORMATION SHEET

PRESIDING: Chair Mitchell, Commissioners Brown-Bland, Gray, Clodfelter  
PLACE: Dobbs Building, Raleigh, North Carolina  
DATE: July 18, 2019  
TIME: 11:05 a.m. to 5:25 p.m.  
DOCKET NO.: E-100, Sub 158  
COMPANIES: Duke Energy Progress, LLC, Duke Energy Carolinas, LLC,  
and Dominion Energy North Carolina  
DESCRIPTION: In the Matter of Generic Electric, Biennial Determination of Avoided  
Cost Rates for Electric Utility Purchases from Qualifying Facilities -2018  
VOLUME: 6

APPEARANCES

(See attached.)

EXHIBITS

(See attached.)

---

COPIES ORDERED: Email: Fentress, Grigg, Dantonio, Smith, Bowen, Hutt, Kemerait, Levitas,  
Ross, Snowden, Wills, Quinn, Harrod, Dodge, Cummings

REPORTED BY: Linda Garrett

TRANSCRIPT PAGES: 275

TRANSCRIBED BY: Linda Garrett

PREFILED PAGES: 180

DATE TRANSCRIBED: July 29, 2019

**FILED**

**JUL 29 REC'D**

Clerk's Office  
N.C. Utilities Commission

OFFICIAL COPY

JUL 29 2019

1    A P P E A R A N C E S:  
2    FOR DUKE ENERGY CAROLINAS, LLC  
3    AND DUKE ENERGY PROGRESS, LLC:  
4    Kendrick Fentress, Esq.  
5    Duke Energy Corporation  
6    Associate General Counsel  
7    410 S. Wilmington Street  
8    Raleigh, North Carolina 27602  
9  
10    E. Brett Breitschwerdt, Esq.  
11    McGuireWoods LLP  
12    434 Fayetteville Street, Suite 2600  
13    Raleigh, North Carolina 27601  
14  
15    FOR DOMINION ENERGY NORTH CAROLINA:  
16    Mary Lynne Grigg, Esq.  
17    Nick Dantonio, Esq.  
18    McGuireWoods LLP  
19    434 Fayetteville Street, Suite 2600  
20    Raleigh, North Carolina 27601  
21  
22  
23  
24

1    A P P E A R A N C E S    C o n t ' d . :  
2    F O R   N O R T H   C A R O L I N A   S U S T A I N A B L E   E N E R G Y  
3    A S S O C I A T I O N :  
4    B e n j a m i n   S m i t h ,   E s q .  
5    R e g u l a t o r y   C o u n s e l  
6    4 8 0 0   S i x   F o r k s   R o a d ,   S u i t e   3 0 0  
7    R a l e i g h ,   N o r t h   C a r o l i n a   2 7 6 0 9  
8  
9    F O R   S O U T H E R N   A L L I A N C E   F O R   C L E A N   E N E R G Y :  
10    L a u r e n   B o w e n ,   E s q .  
11    S e n i o r   A t t o r n e y  
12    M a i a   H u t t ,   E s q .  
13    A s s o c i a t e   A t t o r n e y  
14    S o u t h e r n   E n v i r o n m e n t a l   L a w   C e n t e r  
15    6 0 1   W e s t   R o s e m a r y   S t r e e t ,   S u i t e   2 2 0  
16    C h a p e l   H i l l ,   N o r t h   C a r o l i n a   2 7 5 1 6  
17  
18    F O R   N O R T H   C A R O L I N A   C L E A N   E N E R G Y   B U S I N E S S   A L L I A N C E  
19    a n d   E C O P L E X U S ,   I N C . :  
20    K a r e n   M .   K e m e r a i t ,   E s q .  
21    F o x   R o t h s c h i l d ,   L L P  
22    4 3 4   F a y e t t e v i l l e   S t r e e t ,   S u i t e   2 8 0 0  
23    R a l e i g h ,   N o r t h   C a r o l i n a   2 7 6 0 1  
24

1    A P P E A R A N C E S    (Cont'd.)  
2    FOR NORTH CAROLINA CLEAN ENERGY BUSINESS ALLIANCE:  
3    Steven Levitas, Esq.  
4    Kilpatrick Townsend  
5    4208 Six Forks Road, Suite 1400  
6    Raleigh, North Carolina 27609  
7  
8    FOR NORTH CAROLINA SMALL HYDRO GROUP:  
9    Deborah Ross, Esq.  
10    Fox Rothschild, LLP  
11    434 Fayetteville Street, Suite 2800  
12    Raleigh, North Carolina 27601  
13  
14    FOR CUBE YADKIN GENERATION:  
15    Ben Snowden, Esq.  
16    Kilpatrick Townsend & Stockton  
17    4208 Six Forks Road, Suite 1400  
18    Raleigh, North Carolina 27609  
19  
20  
21  
22  
23  
24

1 A P P E A R A N C E S Cont'd.:

2 FOR NC WARN:

3 Kristen Wills, Esq.

4 2812 Hillsborough Road

5 Durham, North Carolina 27705

6

7 Matthew D. Quinn, Esq.

8 Lewis & Roberts, PLLC

9 3700 Glenwood Avenue, Suite 410

10 Raleigh, North Carolina 27612

11

12 FOR CAROLINA UTILITY CUSTOMERS ASSOCIATION, INC.:

13 Robert F. Page, Esq.

14 Crisp & Page

15 4010 Barrett Drive, Suite 205

16 Raleigh, North Carolina 27609

17

18

19

20

21

22

23

24

1    A P P E A R A N C E S    (Cont'd.):  
2    FOR THE USING AND CONSUMING PUBLIC AND ON BEHALF OF  
3    THE STATE AND ITS CITIZENS IN THIS MATTER AFFECTING  
4    THE PUBLIC INTEREST:

5    Jennifer Harrod, Esq.  
6    Special Deputy Attorney General  
7    Teresa Townsend, Esq.  
8    Special Deputy Attorney General  
9    Office of the North Carolina Attorney General  
10    114 West Edenton Street  
11    Raleigh, North Carolina 27603

12  
13    FOR THE USING AND CONSUMING PUBLIC:  
14    Tim Dodge, Esq.  
15    Layla Cummings, Esq.  
16    Lucy Edmondson, Esq.  
17    Heather Fennell, Esq.  
18    Public Staff - North Carolina Utilities  
19    Commission  
20    4326 Mail Service Center  
21    Raleigh, North Carolina 27699-4300

22  
23  
24

1	T A B L E O F C O N T E N T S	
2	E X A M I N A T I O N S	
3		PAGE
4	NICK WINTERMANTEL - Recalled	
5	Redirect Examination by Mr. Breitschwerdt.....	11
6	Recross Examination by Mr. Smith.....	20
7	Recross Examination by Ms. Bowen.....	26
8	Recross Examination by Mr. Levitas.....	31
9	Examination by Commissioner Clodfelter.....	32
10	Examination by Commissioner Brown-Bland.....	47
11	Examination by Chair Mitchell.....	49
12	Further Examination by Commissioner Brown-Bland.....	55
13	Examination by Mr. Breitschwerdt.....	56
14	Examination by Ms. Bowen.....	58
15	Examination by Mr. Levitas.....	65
16		
17		
18		
19		
20		
21		
22		
23		
24		

1	E X A M I N A T I O N S (Cont'd.)	
2		PAGE
3	BRENDAN KIRBY - Recalled	
4	Examination by Commissioner Clodfelter.....	73
5	Examination by Chair Mitchell.....	91
6	Examination by Ms. Bowen.....	92
7	Further Examination by Commissioner Clodfelter.....	95
8	Examination by Mr. Levitas.....	96
9	Examination by Mr. Dodge.....	97
10	Examination by Chair Mitchell.....	100
11	Examination by Mr. Breitschwerdt.....	102
12	Further Examination by Ms. Bowen.....	113
13		
14	TYLER NORRIS	
15	Direct Examination by Mr. Smith.....	115
16	Cross Examination by Mr. Breitschwerdt.....	154
17	Cross Examination by Mr. Dantonio.....	184
18	Examination by Commissioner Brown-Bland.....	190
19	Examination by Chair Mitchell.....	194
20		
21	DR. BEN JOHNSON	
22	Direct Examination by Mr. Smith.....	197
23	Cross Examination by Mr. Breitschwerdt.....	253
24		



1	E X A M I N A T I O N S (Cont'd.)	
2		PAGE
3	DEVI GLICK	
4	Direct Examination by Ms. Bowen.....	267
5	Cross Examination by Ms. Fentress.....	288
6	Cross Examination by Mr. Dantonio.....	291
7	Examination by Chair Mitchell.....	294
8	Examination by Commissioner Clodfelter.....	297
9		
10	PANEL	
11	JEFF THOMAS, DUSTIN METZ, JOHN R. HINTON	
12	Direct Examination by Mr. Dodge.....	302
13	Direct Examination by Ms. Cummings.....	351
14	Cross Examination by Mr. Levitas.....	404
15	Cross Examination by Ms. Kemerait.....	436
16	Cross Examination by Ms. Hutt.....	444
17		
18		
19		
20		
21		
22		
23		
24		

1	E X H I B I T S	
2		IDENTIFIED/ADMITTED
3	Norris Exhibit 1.....	117/--
4	DEC/DEP Johnson Cross Exhibit 1.....	267/267
5	Glick Exhibit A.....	269/--
6	Thomas Exhibits A-G.....	353/--
7		
8	Initial Statement of the Public Staff.....	--/403
9	(Confidential version filed under seal.)	
10	Reply Comments of the Public Staff.....	--/403
11	(Confidential version filed under seal.)	
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

GENERAL ASSEMBLY OF NORTH CAROLINA  
SESSION 2019

HOUSE BILL 329  
RATIFIED BILL

AN ACT TO (I) EXEMPT ELECTRIC VEHICLE CHARGING STATIONS FROM REGULATION AS PUBLIC UTILITIES, (II) REQUIRE THE ENVIRONMENTAL MANAGEMENT COMMISSION TO ADOPT RULES TO ESTABLISH A REGULATORY PROGRAM TO GOVERN THE MANAGEMENT OF END-OF-LIFE PHOTOVOLTAIC MODULES AND ENERGY STORAGE SYSTEM BATTERIES, AND DECOMMISSIONING OF UTILITY-SCALE SOLAR PROJECTS AND WIND ENERGY FACILITIES, AND REQUIRE THE DEPARTMENT OF ENVIRONMENTAL QUALITY TO ESTABLISH A STAKEHOLDER PROCESS TO SUPPORT DEVELOPMENT OF THE RULES, AND (III) PROVIDE SMALL HYDROELECTRIC POWER FACILITIES CERTAIN TREATMENT SIMILAR TO THAT GIVEN TO SMALL POWER PRODUCERS THAT PRODUCE ENERGY FROM SWINE AND POULTRY WASTE.

The General Assembly of North Carolina enacts:

**SECTION 1.(a)** G.S. 62-3 is amended by adding a new subdivision to read:

"(21a) Plug-in electric vehicle. – A four-wheeled motor vehicle that meets each of the following requirements:

- a. Is made by a manufacturer primarily for use on public streets, roads, and highways and meets National Highway Traffic Safety Administration standards included in 49 C.F.R. § 571.
- b. Has not been modified from original manufacturer specifications with regard to power train or any manner of powering the vehicle.
- c. Is rated at not more than 8,500 pounds unloaded gross vehicle weight.
- d. Has a maximum speed capability of at least 65 miles per hour.
- e. Draws electricity from a battery that has all of the following characteristics:
  - 1. A capacity of not less than four kilowatt hours.
  - 2. Capable of being recharged from an external source of electricity."

**SECTION 1.(b)** G.S. 62-3(23) is amended by adding a new sub-subdivision to read:

"n. The term "public utility" shall not include a person who uses an electric vehicle charging station to resell electricity to the public for compensation, provided that all of the following apply:

- 1. The reseller has procured the electricity from an electric power supplier, as defined in G.S. 62-133.8(a)(3), that is authorized to engage in the retail sale of electricity within the territory in which the electric vehicle charging service is provided.
- 2. All resales are exclusively for the charging of plug-in electric vehicles.
- 3. The charging station is immobile.



- 4. Utility service to an electric vehicle charging station shall be provided subject to the electric power supplier's terms and conditions.

Nothing in this sub-subdivision shall be construed to limit the ability of an electric power supplier to use electric vehicle charging stations to furnish electricity for charging electric vehicles. Any increases in customer demand or energy consumption associated with transportation electrification shall not constitute found revenues for an electric public utility."

**SECTION 2.(a)** No later than January 1, 2022, the Environmental Management Commission shall adopt rules to establish a regulatory program to govern (i) the management of end-of-life photovoltaic modules and energy storage system batteries and (ii) decommissioning of utility-scale solar projects and wind energy facilities. In the development of these rules, the Department of Environmental Quality shall consider all of the following matters:

- (1) Whether or not any photovoltaic modules, energy storage system batteries, or the constituent materials thereof, or other equipment used in utility-scale solar projects or wind energy facilities, exhibit any of the characteristics of hazardous waste identified in 40 C.F.R. Part 261, or under rules adopted pursuant to G.S. 130A-294(c), or whether or not any such equipment is properly characterized as solid waste under State and federal law.
- (2) Preferred methods to responsibly manage end-of-life photovoltaic modules, energy storage system batteries, or the constituent materials thereof, or other equipment used in utility-scale solar projects or wind energy facilities, including the extent to which such equipment may be:
  - a. Reused, if not damaged or in need of repair, for a similar purpose.
  - b. Refurbished, if not substantially damaged, and reused for a similar purpose.
  - c. Recycled with recovery of materials for similar or other purposes.
  - d. Safely disposed of in construction and demolition or municipal solid waste landfills for material that does not exhibit any of the characteristics of hazardous waste under State or federal law.
  - e. Safely disposed of in accordance with State and federal requirements governing hazardous waste for materials that exhibit any of the characteristics of hazardous waste under State or federal law.
- (3) Economic and environmental costs and benefits associated with each method identified in subdivision (2) of this section to manage end-of-life photovoltaic modules, energy storage system batteries, or the constituent materials thereof, and other equipment used in utility-scale solar projects or wind energy facilities.
- (4) The data-based expected economically productive life cycle of various types of photovoltaic modules, wind turbines, and energy storage system batteries currently in use in the State.
- (5) The volume of photovoltaic modules, wind turbines, and energy storage system batteries currently in use in the State, and projections, based upon the data on life cycle identified in subdivision (2) of this section, on impacts that may be expected to the State's landfill capacity if landfill disposal is permitted for such equipment at end-of-life.
- (6) A survey of federal and other states' and countries' regulatory requirements relating to (i) management of end-of-life photovoltaic modules, energy storage system batteries, and other equipment used in utility-scale solar projects and wind energy projects, including identification of states' laws

governing reuse, refurbishment, disposal, or recycling of such equipment, (ii) decommissioning of utility-scale solar projects and wind energy facilities, and (iii) financial assurance to be established by owners or operators of utility-scale solar projects and wind energy facilities to ensure responsible decommissioning.

- (7) Whether or not adequate financial assurance requirements are necessary to ensure proper decommissioning of utility-scale solar projects upon cessation of operations.
- (8) Infrastructure that may be needed to develop a practical, effective, and cost-efficient means to collect and transport end-of-life photovoltaic modules, energy storage system batteries, and other equipment used in utility-scale solar projects and wind energy facilities, for reuse, refurbishment, recycling, or disposal.
- (9) Whether or not manufacturer stewardship programs for the recycling of end-of-life photovoltaic modules and energy storage system batteries should be established for applications other than utility-scale solar project installations, and if so, fees that should be established for manufacturers that sell such photovoltaic modules, or energy storage system batteries, in or into the State, in an amount adequate to support the implementation of such requirements.

**SECTION 2.(b)** For purposes of this act, the following definitions apply:

- (1) "End-of-life" means photovoltaic modules, energy storage system batteries, and other equipment used in utility-scale solar and wind energy projects that are removed and taken out of service, that will not be reused.
- (2) "Energy storage system battery" means a battery that is part of a system used to store chemical energy that was once electrical energy, for use in a process that contributes to end user demand management or grid operation and reliability. The term does not include energy storage system batteries: (i) that are part of a consumer electronic device for which it provides electricity needed to make the consumer electronic device function or (ii) that are part of a plug-in electric vehicle as defined in G.S. 20-4.01(28a), or an alternative fuel vehicle (AFV) as that term is defined in G.S. 143-58.4(a)(1).
- (3) "Photovoltaic module" means the smallest nondivisible, environmentally protected assembly of photovoltaic cells or other photovoltaic collector technology and ancillary parts intended to generate electrical power under sunlight, except that "photovoltaic module" does not include a photovoltaic cell that is part of a consumer electronic device for which it provides electricity needed to make the consumer electronic device function. "Photovoltaic module" includes interconnections, terminals, and protective devices such as diodes that: (i) are installed on, connected to, or integral with buildings or (ii) are used as components of freestanding, off-grid, power generation systems, such as for powering water pumping stations, electric vehicle charging stations, fencing, street and signage lights, and other commercial or agricultural purposes.
- (4) "Utility-scale solar project" means a ground-mounted photovoltaic (PV), concentrating photovoltaic (CPV), or concentrating solar power (CSP or solar thermal) project directly connected to the electrical grid that generates electricity for sale. The term includes the solar arrays, accessory buildings, transmission facilities, and any other infrastructure necessary for the operation of the project. The term does not include renewable energy facilities owned or leased by a retail electric customer intended primarily for the customer's

own use to offset the customer's own retail electrical energy consumption at the premises.

- (5) "Wind energy facility" means the turbines, accessory buildings, transmission facilities, and any other equipment necessary for the operation of the facility that cumulatively, with any other wind energy facility whose turbines are located within one-half mile of one another, have a rated capacity of one megawatt or more of energy.

**SECTION 2.(c)** The Department shall, within 60 days following the effective date of this act, establish a stakeholder process for development of the regulatory program required pursuant to Section 2(a) of this act.

**SECTION 2.(d)** The Department and the Commission shall submit joint interim reports on activities conducted pursuant to this act on a quarterly basis beginning December 1, 2019, and shall submit a joint final report with findings, including stakeholder input, to the Environmental Review Commission and the General Assembly no later than January 1, 2021. The interim report due April 1, 2020, shall include a recommendation to the General Assembly regarding the resources needed to implement the requirements of this act.

**SECTION 3.(a)** G.S. 62-156(b)(3) reads as rewritten:

"(b) At least every two years, the Commission shall determine the standard contract avoided cost rates to be included within the tariffs of each electric public utility and paid by electric public utilities for power purchased from small power producers, according to the following standards:

- ...
- (3) **Availability and Reliability of Power.** – The rates to be paid by electric public utilities for capacity purchased from a small power producer shall be established with consideration of the reliability and availability of the power. A future capacity need shall only be avoided in a year where the utility's most recent biennial integrated resource plan filed with the Commission pursuant to G.S. 62-110.1(c) has identified a projected capacity need to serve system load and the identified need can be met by the type of small power producer resource based upon its availability and reliability of power, other than than for (i) swine or poultry waste for which a need is established consistent with G.S. 62-133.8(e) and (f) and (ii) hydropower small power producers with power purchase agreements with an electric public utility in effect as of July 27, 2017, and the renewal of such a power purchase agreement, if the hydroelectric small power producer's facility total capacity is equal to or less than five megawatts (MW)."

**SECTION 3.(b)** The exception for hydropower small power producers from limitations on capacity payments established in G.S. 62-156(b)(3), as amended by Section 3(a) of this act, shall not be construed in any manner to affect the applicability of G.S. 62-156(b)(3) as it relates to any other small power producer.

**SECTION 4.** This act is effective when it becomes law.  
In the General Assembly read three times and ratified this the 9<sup>th</sup> day of July, 2019.

s/ Ralph E. Hise  
Presiding Officer of the Senate

s/ Tim Moore  
Speaker of the House of Representatives

\_\_\_\_\_  
Roy Cooper  
Governor

Approved \_\_\_\_\_m. this \_\_\_\_\_ day of \_\_\_\_\_, 2019

7 pg 1 of large  
document filed  
in the docket  
system.

\* confidential version  
available in  
docket system.  
ctm

PUBLIC VERSION

--/A  
vol. 4

OFFICIAL COPY

JUL 29 2019

# Initial Statement of the Public Staff

---

Determination of Avoided Cost Rates for Electric  
Utility Purchases from Qualifying Facilities - 2018

---

Docket No. E-100, Sub 158

February 12, 2019



1 we've -- we've had numerous proceedings. As you've  
2 pointed out, you and I have been at these tables longer  
3 than I care to recount. And so the energy and all the  
4 issues affecting energy have been widely debated,  
5 everything from gas prices to PAFs to everything that we  
6 just spoke about. The integration service charge was  
7 originally brought up in Sub 140, and I believe the  
8 Commission thought it was a little premature at the time.  
9 There was a pretty detailed PNNL study that identified  
10 the cost.

11 And then, you know, as we've added more solar  
12 to the system, these costs have become more known and  
13 measurable. We have an additional study that was done  
14 and presented in this case. But we elected to implement  
15 that charge, again, as an average integration charge to  
16 be updated. We originally thought about could we come  
17 in? Would it be better to come in as an incremental,  
18 much higher charge, and fix it for 10 years of this  
19 contract? The charge would have been significantly  
20 higher and it would have been fixed.

21 This now is a significantly lower charge for  
22 the QF, to the benefit of the QF, that will be adjusted  
23 over time such that the QF is not subject to the higher  
24 charge right out of the gate, that there is time for

PUBLIC VERSION

+ pg. 1 of large document  
Filed in the  
docket  
system.  
AM

--/A  
wt. U

OFFICIAL COPY

JUL 29 2019

# Reply Comments of the Public Staff

---

Determination of Avoided Cost Rates for Electric  
Utility Purchases from Qualifying Facilities - 2018

---

Docket No. E-100, Sub 158

March 27, 2019

1 in a very short amount of time without getting input from  
2 all parties -- and we're committed to doing that in our  
3 storage protocol; we continue to commit to do that -- is  
4 that you have -- just the mere existence of a battery  
5 does not guarantee that you're going to have less  
6 intermittency. As a matter of fact, unless it's operated  
7 with that intent, you might have the same or more  
8 intermittency. So all we're trying to get to in that is  
9 that you have to demonstrate that you're using the  
10 battery in a manner to reduce intermittency and not just  
11 block shift power from one price period to the other and  
12 leave the net put of the -- net output of the facility  
13 still very intermittent.

14 So that was the intent of that statement, was,  
15 you know, and where we intend to work with stakeholders  
16 on this is, you know, we're not trying to be arduous  
17 here; it's just demonstrate that the battery is being  
18 used for smoothing. And if -- if that is -- is able to  
19 be demonstrated, then, yes, it wouldn't be appropriate to  
20 still charge them an integration service charge.

21 Q What are your plans to work with stakeholders  
22 on that?

23 A I know we have ongoing -- and I'll turn to my  
24 colleagues here if they want to add to this, but, you