

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-100, SUB 157

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of
2019 Biennial Integrated Resource) PUBLIC STAFF'S COMMENTS ON
Plan Updates and Related 2019 REPS) REPS COMPLIANCE PLANS
Compliance Plans)

NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission (Public Staff), by and through its Executive Director, Christopher J. Ayers, pursuant to the Commission's order of October 28, 2019, in this docket, and respectfully submits its comments on the 2019 Renewable Energy and Energy Efficiency Portfolio Standard (REPS) Compliance Plans filed by Duke Energy Progress, LLC (DEP), Duke Energy Carolinas, LLC (DEC), and Dominion Energy North Carolina (DENC) (collectively, the Utilities) as part of their 2019 biennial Integrated Resource Plan (IRP) updates.

N.C. Gen. Stat. § 62-133.8 requires all electric power suppliers in North Carolina to meet specified percentages of their retail sales using renewable energy and energy efficiency (EE) measures. An electric power supplier may comply with the REPS by generating renewable energy at its own facilities, by purchasing bundled renewable energy from a renewable energy facility, or by purchasing renewable energy certificates (RECs).

Alternatively, a supplier may comply by reducing energy consumption through implementation of EE measures or electricity demand reduction¹ (or through demand-side management (DSM) measures, in the case of electric membership corporations (EMCs) and municipalities). The Utilities may use EE measures to meet up to 25% of their overall requirements contained in N.C. Gen. Stat. § 62-133.8(b) until calendar year 2021 when this limit increases to 40%. One megawatt-hour (MWh) of savings from DSM, EE, or electricity demand reduction is equivalent to one energy efficiency certificate (EEC), which is a type of REC. EMCs and municipalities may use DSM and EE to meet the requirements of N.C. Gen. Stat. § 62-133.8(c) without any limit on the maximum amount allowed.

All electric power suppliers may obtain RECs from out-of-state sources to satisfy up to 25% of their total requirements, with the exception of DENC, which may use out-of-state RECs to meet its entire requirement. The total amount of RECs that must be provided by an electric power supplier for 2019 and 2020 is equal to 10% of its North Carolina retail sales for the preceding year. For electric public utilities, the requirement increases to 12.5% in 2021. This is the highest amount set by N.C. Gen. Stat. § 62-133.8(b) for electric public utilities. The highest amount set by N.C. Gen. Stat. § 62-133.8(c) for EMCs and Municipalities is 10%.

Commission Rule R8-67(b) provides the requirements for REPS compliance plans (Plans). The Utilities must file their Plans on or before September

¹ “Electricity demand reduction,” as used herein, is defined in N.C. Gen. Stat. § 62-133.8(a)(3a).

1 of each year, as part of their IRPs,² and explain how they will meet the requirements of N.C. Gen. Stat. § 62-133.8(b), (c), (d), (e), and (f). The Plans must cover the current year and the next two calendar years, or in this case 2019, 2020, and 2021 (the Planning Period). An electric power supplier may have its REPS compliance requirements met by a utility compliance aggregator as defined in Commission Rule R8-67(a)(5).

Below are the Public Staff's individual comments on the Plans filed by DEC, DEP, and DENC to comply with N.C. Gen. Stat. § 62-133.8(b), (c), and (d), the general requirement,³ and the solar energy set-aside. These are followed by consolidated comments on the Utilities' plans to comply with N.C. Gen. Stat. § 62-133.8(e) and (f), the swine and poultry waste set-asides.

DEC

DEC serves as the REPS compliance aggregator for Rutherford EMC, Blue Ridge EMC, the Town of Dallas, the Town of Forest City, and the Town of Highlands (collectively, DEC's Wholesale Customers). DEC has contracted for or procured sufficient resources to meet the general requirement and solar set-aside for the Planning Period, both for itself and for DEC's Wholesale Customers.

DEC intends to use EE programs to meet up to 25% of its REPS requirements. Hydroelectric facilities and energy allocations from the Southeastern

² Although municipalities and EMCs do not file IRPs, they are required to file REPS Compliance Plans on or before September 1 of each year.

³ The overall REPS requirements of N.C. Gen. Stat. § 62-133.8(b) and (c), net of the requirements of the three set-asides established by N.C. Gen. Stat. § 62-133.8(d), (e) and (f), is frequently referred to as the "general requirement."

Power Administration (SEPA) will be used to meet up to 30% of the general requirements of DEC's Wholesale Customers. Hydroelectric facilities of 10 MW or less, together with incremental capacity from the 2012 modifications to DEC's Bridgewater hydroelectric plant, will provide RECs for DEC's retail as well as its Wholesale Customers. DEC has sold five of its hydroelectric facilities, with the sale closing in August 2019. If these facilities are registered as new renewable energy facilities, DEC may purchase the RECs generated for use as general requirements for its retail customers.

A substantial portion of DEC's general requirements will be met by purchased power agreements, as well as REC-only purchases from biomass power providers, some of which are combined heat and power (CHP) facilities. In addition, DEC plans to use solar energy and power generated from landfill gas to comply with the general requirement. DEC continues to evaluate the use of wind energy, through either REC-only purchases or energy delivered onto its system.

To meet the solar energy set-aside, DEC will obtain RECs from its self-owned solar photovoltaic (PV) facilities and from other solar PV and solar thermal facilities. DEC's solar resources include 81 MW of capacity at the Monroe, Mocksville, and Woodleaf solar facilities, and approximately 10 MW_{DC} from the small distributed solar facilities approved in Docket No. E-7, Sub 856.

DEC plans to evaluate additional projects through the competitive procurement process established in North Carolina HB 589. HB 589 allows for competitive procurement of 2,660 MW of additional renewable energy capacity in

the Carolinas, with proposals issued over a 45-month period. DEC may develop up to 30% of its required competitive procurement capacity using self-owned facilities.

DEC anticipates that its REPS compliance costs will increase, but will remain below the cost caps contained in N.C. Gen. Stat. § 62-133.8(h)(3) and (4), for the Planning Period.

DEC files evaluation, measurement, and verification (EM&V) plans for each EE program in the respective program approval dockets.

DEP

DEP has contracted for and banked sufficient resources to meet the general requirement and solar set-aside. DEP no longer provides REPS compliance services for other electric suppliers.

DEP intends to use EE programs to meet up to 25% of its REPS requirements. It plans to meet a significant portion of the general requirement using RECs from solar facilities. A substantial portion of the general requirement will be met with executed purchased power agreements, as well as REC-only purchases from biomass power providers, some of which are CHP facilities. Hydroelectric facilities and power generated from landfill gas will also provide RECs for DEP's retail customers. DEP also continues to evaluate the use of wind energy, either through REC-only purchases or through energy delivered to its customers in North Carolina, to satisfy this requirement.

To meet the solar energy set-aside, DEP will obtain RECs from its own solar facilities, its residential solar PV program, and REC-purchase contracts with other solar PV and solar thermal facilities. DEP owns four solar facilities, totaling 140.7 MW, which will be used to meet a portion of its REPS compliance obligations.

DEP plans to evaluate additional projects through the competitive procurement process established in HB 589. HB 589 allows for competitive procurement of 2,660 MW of additional renewable energy capacity in the Carolinas, with proposals issued over a 45-month period. DEP may develop up to 30% of its required competitive procurement capacity using self-owned facilities.

DEP anticipates that its incremental REPS compliance costs will remain below the cost caps set forth in N.C. Gen. Stat. § 62-133.8(h)(3) and (4), but it expects them to reach approximately 78% of the cost cap in 2021.

DEP files EM&V plans for each EE program in the respective program approval dockets.

DENC

DENC has contracted for and banked sufficient resources to meet the general requirement and solar energy set-aside through the Planning Period for itself and for the Town of Windsor (Windsor). DENC plans to use EE, purchased in-state and out-of-state RECs, and company-generated RECs to meet the general requirement for its retail customers. For Windsor, DENC will use biomass RECs and Windsor's SEPA allocation. DENC has purchased or plans to purchase solar

RECs to meet the solar energy set-aside and has executed contracts with in-state solar facilities to satisfy Windsor's portion of the in-state solar energy set-aside. DENC's total costs are the same as its incremental costs because, unlike DEC and DEP, DENC currently plans to purchase only unbundled RECs to meet its REPS requirements, rather than RECs that are bundled with renewable electric energy.

DENC anticipates that during the Planning Period it will incur minimal annual research costs for the continued operation of its Microgrid Project. The Microgrid Project consists of wind, solar, and fuel cell energy generation and battery storage at DENC's Kitty Hawk District Office.

DENC expects that the REPS compliance costs for itself and Windsor will be well below the cost caps set forth in N.C. Gen. Stat. § 62-133.8(h)(3) and (4) for the Planning Period.

DENC files EM&V plans for each EE program in the respective program approval dockets.

REPS COMPLIANCE SUMMARY TABLES

The following tables are compiled from data submitted in the DEC, DEP, and DENC Plans. Table 1 shows the projected annual MWh sales on which the Utilities' REPS obligations are based. It is important to note that the figures shown for each year are the Utilities' MWh sales for the preceding year; for instance, the sales for 2020 are MWh sales for calendar year 2019. The totals are presented in this manner because each supplier's REPS obligation is determined as a

percentage of its MWh sales for the preceding year. The sales amounts include retail sales of wholesale customers for which the supplier is providing REPS compliance reporting and services. Table 2 presents a comparison of the projected annual incremental REPS compliance costs with the Utilities' annual cost caps.

Table 1: MWh Sales for Preceding Year

Electric Power Supplier	Compliance Year		
	2019	2020	2021
DEP	38,687,268	37,964,762	38,124,840
DEC	62,176,892	61,441,419	61,443,336
DENC	4,451,246	4,314,100	4,357,300
TOTAL	105,178,260	103,763,481	103,969,103

Table 2: Comparison of Incremental Costs to the Cost Cap

		DEP	DEC	DENC
2019	Incremental Costs	\$43,063,667	\$32,664,550	\$992,609
	Cost Cap	\$63,895,030	\$94,663,210	\$5,666,286
	Percent of Cap	67%	35%	18%
2020	Incremental Costs	\$49,166,769	\$42,832,766	\$1,607,417
	Cost Cap	\$64,511,427	\$95,436,123	\$5,294,199
	Percent of Cap	76%	45%	30%
2021	Incremental Costs	\$50,868,043	\$54,349,692	\$1,611,403
	Cost Cap	\$65,069,892	\$96,172,929	\$5,308,497
	Percent of Cap	78%	57%	30%

SWINE WASTE AND POULTRY WASTE SET-ASIDES

The state's electric power suppliers have encountered continuing difficulties in their efforts to comply with the swine and poultry waste requirements.

N.C. Gen. Stat. § 62-133.8(e) provides that in 2012 at least 0.07% of the electric power sold to customers shall be produced from swine waste, and this percentage increases to 0.14% by 2015, and to 0.20% by 2018. Subsection (f) provides that in 2012 at least 170,000 MWh of power sold to retail customers shall be generated from poultry waste, and that this requirement will increase to 700,000 MWh in 2013, and to 900,000 MWh in 2014.

In each year from 2012 through 2017, the electric power suppliers moved the Commission to delay the swine waste requirement until the following year, and the Commission granted each request. In 2018, the requirement was set at 0.02% for the electric public utilities and was delayed for the EMCs and municipalities. In 2019, the suppliers requested to have the requirement set at 0.07% for the electric public utilities, and to further delay the requirement for the EMCs and municipalities.

With respect to poultry waste, the electric power suppliers have moved in each year, from 2012 through 2019, that the requirement be delayed and modified. The Commission granted these motions, with the exception of the currently pending 2019 motion. From 2013 through 2017, the requirement was set at 170,000 MWh, and in 2018, it was set to 300,000 MWh. In their 2019 motion, the suppliers proposed that the poultry waste requirement be set at 500,000 MWh.

In its annual orders granting delays and/or reductions in the swine and poultry waste requirements, the Commission has required the suppliers to file reports describing the state of their compliance with the set-asides and their negotiations with the developers of swine and poultry waste-to-energy projects,

initially on a semiannual basis. These reports are filed confidentially in Docket No. E-100, Sub 113A. The Commission has further required the suppliers to provide internet-available information to assist the developers of swine and poultry waste-to-energy projects in obtaining contract approval and interconnecting facilities. Additionally, the Commission has directed the Public Staff to hold periodic stakeholder meetings to facilitate compliance with the swine and poultry waste set-asides. In response, the Public Staff organized bi-annual stakeholder meetings beginning in June of 2014. The attendees have included farmers, the North Carolina Pork Council, the North Carolina Poultry Federation, waste-to-energy developers, bankers, state environmental regulators, and the electric power suppliers. The meetings allow the stakeholders to network and voice their concerns to the other parties. In 2017, the frequency of the stakeholder meetings was reduced to once per year.

The state's electric power suppliers have been able to comply only to a limited extent with the poultry waste set-aside, and to an even lesser extent with the swine waste set-aside. Nevertheless, the REPS statute has served as a stimulus for several important advances in waste-to-energy technology.

First, several hog farms have installed anaerobic digesters at their swine waste lagoons and have produced biogas that has been used as fuel to operate small electric generators at these farms. Electric power suppliers have purchased the electricity produced by these generators – or, alternatively, have purchased the

RECs when the electricity was used on the farm where it was generated – and this represented the initial step toward compliance with the swine waste set-aside.

Second, poultry waste has been transported by truck to existing and new generation facilities, where it has been co-fired with wood or other fuels.

Third, there has been progress in the development of large centralized anaerobic digestion plants in areas where numerous hog farms are located. These plants receive swine waste from numerous sources, produce biogas from the waste through the digestion process, and eliminate impurities from the biogas so that it meets the quality standards of the natural gas pipeline system. This biogas, which is referred to as “directed biogas” or “renewable natural gas,” is injected into a natural gas pipeline, and used by a gas-fired generating plant that earns the RECs generated. These directed biogas facilities were first built in midwestern states with extensive hog farming activity. On December 2, 2016, Carbon Cycle Energy, LLC, began construction of a directed biogas facility in Warsaw, North Carolina.⁴

Four days after the start of construction at the Carbon Cycle facility, in Docket No. G-9, Sub 698, Piedmont Natural Gas Company, Inc., petitioned the Commission for approval of a new Appendix F to its service regulations,

⁴ See *Order Accepting Registration of New Renewable Energy Facilities*, Docket No. E-7, Subs 1086 and 1087 (Mar. 11, 2016). In this docket, DEC stated that it had entered into contracts to purchase directed biogas from High Plains Bioenergy, LLC, in Oklahoma, and Roeslein Alternative Energy of Missouri, LLC. On March 18, 2016, DEC supplemented its registration statement to indicate that it also entered into contracts to purchase directed biogas from Carbon Cycle Energy for nomination to its Buck Combined Cycle Station.

authorizing the company to accept “Alternative Gas” (which includes, subject to various restrictions, biogas, biomethane, and landfill gas) onto its system and deliver it to purchasers. In an order issued on June 19, 2018, the Commission approved Piedmont’s proposed appendix and established a three-year pilot program to implement it. The Commission has authorized six firms – C2E Renewables NC, Optima KV, LLC, Optima TH, LLC, Catawba Biogas, LLC, GESS International North Carolina, Inc. and Foothills Renewables, LLC – to participate in the pilot program.

In March of 2018, Optima KV completed its interconnection to the Piedmont Natural Gas system and began delivering biogas to DEP’s Smith Energy Complex in Hamlet, North Carolina. The Optima KV facility thus became the first operational directed biogas facility in North Carolina.

The Public Staff believes the electric power suppliers will likely continue to have difficulty meeting the swine and poultry waste set-asides. However, they have made substantial progress toward complying with these difficult obligations. The supplier best positioned to reach full compliance is DENC, since it can obtain all of its RECs from out-of-state. Indeed, DENC’s compliance plan indicates that already “both DENC and the [Town of] Windsor have sufficient RECs in NC-RETS to meet the 2019-2021 requirements” for swine waste. DENC does not express quite as high a degree of certainty about its compliance with the poultry waste set-aside, given the possibility that between now and 2021 some of its suppliers may default on their contracts. However, it does state that its efforts have “yielded multiple

poultry waste REC contracts and sufficient delivered volume to comply with both the Company's and Windsor's out-of-state requirements for years 2019, 2020, and 2021."

CONCLUSIONS ON REPS COMPLIANCE PLANS

The Public Staff's conclusions regarding the REPS compliance plans of DEC, DEP, and DENC are as follows:

- Overall, the electric public utilities believe they are in a better position to comply with all of the requirements of the REPS, including the set-asides, than in previous years.
- DEC, DEP, and DENC should be able to meet their REPS obligations during the Planning Period, with the exception of the swine and poultry waste set-asides, without nearing or exceeding their cost caps.
- DEC and DEP indicated in their REPS compliance plans that they could comply with the poultry waste set-aside in 2019, and DEC stated that it could meet the swine waste requirement as well; but both companies indicated that compliance would deplete their supply of swine and poultry RECs so severely that they could not comply in 2020 and 2021. Both subsequently joined in the electric power suppliers' motion to reduce the swine and poultry requirements for 2019. However, the fact that DEC, DEP, and all other power suppliers have requested an increased requirement compared to 2018 represents progress compared to previous years.

- DENC expects to meet the swine waste requirements for 2019 through 2021, both for itself and Windsor, and it is confident that it will also meet the poultry waste requirement for all three years of the Planning Period.
- DEC and DEP are actively seeking energy and RECs to meet the set-aside requirements for the years in which they expect to fall short of compliance. DENC is also seeking to acquire RECs and thus strengthen its position for compliance with the swine and poultry requirements in future years.
- The Commission should approve the 2019 REPS Compliance Plans.

WHEREFORE, the Public Staff prays that the Commission take these comments and recommendations into consideration in reaching its decision in this proceeding.

Respectfully submitted this the 7th day of November, 2019.

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CERTIFICATE OF SERVICE

I certify that a copy of these Comments has been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 7th day of November, 2019.

Electronically submitted
/s/ Megan Jost