STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-2, SUB 1293

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application of Duke Energy Progress, LLC for Approval of Renewable Energy and Energy Efficiency Portfolio Standard (REPS) Compliance Report and Cost Recovery Rider Pursuant to N.C. Gen. Stat. 62-133.8 and Commission Rule R8-67	**DIRECT TESTIMONY OF KIMBERLY A. PRESSON**

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Kimberly A. Presson, and my business address is 400 South Tryon Street, Charlotte, North Carolina.

Q. PLEASE STATE YOUR POSITION WITH DUKE ENERGY AND DESCRIBE YOUR CURRENT RESPONSIBILITIES.

A. In my capacity as Renewable Compliance Manager, I am responsible for the development and implementation of renewable energy compliance strategies for Duke Energy Carolinas, LLC ("Duke Energy Carolinas," or "DEC"), Duke Energy Progress, LLC ("Duke Energy Progress," "DEP" or "the Company") and Duke Energy Ohio, LLC. My responsibilities include compliance with North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard ("REPS"), compliance with Ohio's Renewable Portfolio Standard and evaluation of renewable generation initiatives and customer programs that relate to renewable compliance.

Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Arts in Business Administration from Furman University.

Q. PLEASE DESCRIBE YOUR BUSINESS BACKGROUND AND EXPERIENCE.

A. I began my career with Duke Power Company (now known as Duke Energy Carolinas) in 1990, where I held various positions in the customer service and the finance organizations. I joined the Rates Department in 2019 and

moved to my current position as Renewable Compliance Manager in the Business Development and Compliance Department in 2021.

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

A. Yes, I most recently provided testimony in Docket No. E-7, Sub 1264 on DEC's 2021 REPS compliance report and application for approval of its REPS cost recovery rider.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe Duke Energy Progress' activities and the costs it has incurred, or projects it will incur, in support of compliance with North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard under N.C. Gen. Stat. ("G.S.") § 62-133.8 during the twelve months beginning on April 1, 2021 and ending on March 31, 2022 ("Test Period"), as well as during the twelve months beginning on December 1, 2022 and ending on November 30, 2023 ("Billing Period").

Q. PLEASE DESCRIBE THE EXHIBITS TO YOUR TESTIMONY.

A. My testimony includes sixteen exhibits. Presson Confidential Exhibit No. 1 is the Company's 2021 REPS Compliance Report, and Presson Confidential Exhibit No. 2 provides actual and forecasted REPS compliance costs, by resource, that the Company has incurred during the Test Period and projects to incur during the Billing Period in support of compliance with REPS. Presson Confidential Exhibit No. 3 is a worksheet detailing the other incremental costs included in the DEP REPS filing, listing the labor costs

by activity, as directed by the North Carolina Utilities Commission ("Commission") in its January 17, 2017 Order in Docket No. E-2, Sub 1109. Presson Exhibit Nos. 4-16 are the results of studies the costs of which the Company is recovering via the REPS Rider.

Q. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR DIRECTION AND UNDER YOUR SUPERVISION?

A. Presson Confidential Exhibit Nos. 1, 2 and 3 were prepared by me or under my supervision. Presson Exhibit Nos. 4-16 include the results of studies not prepared under my supervision; however, in my role at Duke Energy I am familiar with the studies.

Compliance with REPS Requirements

Q. WHAT ARE DUKE ENERGY PROGRESS' REPS REQUIREMENTS UNDER G.S. § 62-133.8?

A. Pursuant to G.S. § 62-133.8,[1] as an electric power supplier, Duke Energy Progress is required to comply with the overall REPS requirement ("Total Requirement") by submitting for retirement a total volume of renewable energy certificates ("RECs") equivalent to the following percentages of its North Carolina retail sales in the prior year:

- Beginning in 2012, three percent (3%);
- In 2015, six percent (6%);
- In 2018, ten percent (10%); and

[1] In its *Order Clarifying Electric Power Suppliers' Annual REPS Requirements*, Docket No. E-100, Sub 113 (November 26, 2008), the Commission clarified that the calculation of these requirements for each year shall be based upon the electric utility's North Carolina retail sales for the prior year.

- In 2021 and thereafter, twelve point five percent (12.5%).

Furthermore, each electric power supplier must comply with the requirements of G.S. § 62-133.8 (d), (e), and (f) (individually referred to as the "Solar Set-Aside," "Swine Waste Set-Aside," and "Poultry Waste Set-Aside," respectively). That is, within the Total Requirement described above, each electric power supplier is to ensure that specific quantities of qualifying solar RECs, swine waste RECs, and poultry waste RECs are also submitted for retirement. The Company generally refers to its Total Requirement net of the three set-asides as its "General Requirement."

Specifically, each electric power supplier is to comply with the Solar Set-Aside by submitting for retirement a volume of qualifying solar RECs equivalent to the following percentages of its North Carolina retail sales in the prior year:

- Beginning in 2010, two-hundredths of one percent (0.02%);
- In 2012, seven-hundredths of one percent (0.07%);
- In 2015, fourteen-hundredths of one percent (0.14%); and
- In 2018 and thereafter, two-tenths of one percent (0.20%).

Each electric power supplier is also to comply with the Swine Waste Set-Aside by submitting for retirement a volume of qualifying swine waste RECs equivalent to its pro-rata share of total retail electric power sold in North Carolina multiplied by the statewide, aggregate Swine Waste Set-

Aside Requirement.[2] Duke Energy Progress' Swine Waste Set-Aside Requirements, as modified by the Commission,[3,4] are as follows:

- In 2018, its pro-rata share of two-hundredths of one percent (0.02%) of the total retail electric power sold in North Carolina in the year prior;
- In 2019, its pro-rata share of four-hundredths of one percent (0.04%) of the total retail electric power sold in North Carolina in the year prior;
- In 2020, its pro-rata share of seven-hundredths of one percent (0.07%) of the total retail electric power sold in North Carolina in the year prior;
- In 2022, its pro-rata share of fourteen-hundredths of one percent (0.14%) of total retail electric power sold in North Carolina in the year prior; and
- In 2025 and thereafter, its pro-rata share of two-tenths of one percent

[2] In its *Order on Pro Rata Allocation of Aggregate Swine and Poultry Waste Set-Aside Requirements and Motion for Clarification* in Docket No. E-100, Sub 113 (March 31, 2010), the Commission approved the electric power suppliers' proposed pro-rata allocation of the statewide aggregate swine and poultry waste set-aside requirements, such that the aggregate requirements will be allocated among the electric power suppliers based on the ratio of each electric power supplier's prior year retail sales to the total statewide retail sales.

[3]In its *Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief* (December 16, 2019) and its *Errata Order* (February 13, 2020), Docket No. E-100, Sub 113, the Commission not only modified the 2019 Swine Waste Set-Aside Requirement for electric public utilities but also delayed by one year the scheduled increases to the requirement to 0.07% in 2020.

[4]In its *Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief* (March 4, 2022) in Docket No. E-100, Sub 113, the Commission modified the 2021 Swine Waste Set-Aside Requirement for electric membership corporations and municipalities, and modified the scheduled increases to the requirement. Similarly, the Commission modified the statewide 2021 Poultry Waste Set-Aside Requirement to be 300,000 MWh and set the 2022 and 2023 requirements at 700,000 MWh and 900,000 MWhs respectively.

(0.20%) of total retail electric power sold in North Carolina in the year prior.

Finally, each electric power supplier is also to submit for retirement a volume of qualifying poultry waste RECs equivalent to its pro-rata share of the aggregate state-wide Poultry Waste Set-Aside requirement. Duke Energy Progress' Poultry Waste Set-Aside Requirements, as modified by the Commission,[3,4] are as follows:

- Beginning in 2014, its pro-rata share of 170,000 megawatt-hours ("MWh");
- In 2018, its pro-rata share of 300,000 MWh;
- In 2019, its pro-rata share of 500,000 MWh;
- In 2020, its pro-rata share of 700,000 MWh;
- In 2021, its pro-rata share of 300,000 MWh
- In 2022, its pro-rata share of 700,000 MWh and
- In 2023 and thereafter, its pro-rata share of 900,000 MWh.

The requirements described in this testimony and accompanying exhibits reflect the aggregation of the REPS requirements of Duke Energy Progress' retail customers.

Q. WHAT WERE THE COMPANY'S TOTAL NORTH CAROLINA RETAIL SALES FOR CALENDAR YEAR 2020, THE YEAR ON WHICH THE COMPLIANCE REQUIREMENTS FOR 2021 ARE BASED?

A. The Company's total North Carolina retail sales for calendar year 2020 were 36,175,543 MWhs. This includes an additional 6,856 MWhs that were not reported in NC-RETS due to minor revenue reporting system issues the Company experienced and later corrected.

Q. PLEASE SUMMARIZE DUKE ENERGY PROGRESS' REPS REQUIREMENTS FOR THE TEST AND BILLING PERIODS.

A. The Company submitted 4,521,943 RECs for retirement to meet its 2021 Total Requirement of 12.5% of its North Carolina retail sales in the prior year. Within this total, the Company submitted 72,352 RECs to meet its solar set-aside requirement, 83,850 RECs to meet its poultry waste set-aside requirements, and 25,323 RECs to meet its swine waste set-aside requirement.

For the prospective Billing Period, which spans two calendar years, with different requirements in each year, the Company's estimated requirements are as follows[5]:

For compliance year 2022, the Company estimates that it will be required to submit for retirement 4,572,269 RECs to meet its Total Requirement. Within this total, the Company is also required to retire the following: 73,157 solar RECs, 51,210 swine waste RECs and 195,649 poultry waste RECs.

[5] The Company's projected requirements are based upon retail sales estimates and will be subject to change based upon actual prior-year North Carolina retail sales data. Additionally, the poultry waste set-aside requirement allocation is expected to be updated in 2022 for the 2022-2024 compliance periods per the December 16, 2019 Order in Docket No. E-100, Sub 113.

For compliance year 2023, the Company estimates that it will be required to submit for retirement 4,836,674 RECs to meet its Total Requirement. Within this total, the Company estimates that it will be required to retire approximately 77,387 solar RECs, 54,171 swine waste RECs and 251,548 poultry waste RECs.

Q. HAS THE COMPANY COMPLIED WITH ITS GENERAL REQUIREMENT FOR 2021?

A. Yes, the Company has met its 2021 General requirement of 4,340,418 RECs. Specifically, the RECs to be used for 2021 compliance have been transferred from the NC-RETS Progress Energy Electric Power Supplier account to the Progress Energy Compliance Sub-Account. Upon completion of this regulatory proceeding, the Commission will finalize retirement of the RECs.

Q. WILL THE COMPANY COMPLY WITH ITS GENERAL REQUIREMENT IN 2022?

A. Yes, the Company is in a position to comply with its General requirement in 2022.

Q. WHAT ACTIONS HAS DUKE ENERGY PROGRESS TAKEN DURING THE TEST PERIOD TO SATISFY ITS CURRENT AND FUTURE REPS REQUIREMENTS?

A. During the Test Period, Duke Energy Progress has continued to produce and procure RECs to satisfy its REPS requirements. Specifically, the Company has taken the following actions: (1) executed and continued

negotiations for additional REC purchase agreements with renewable facilities; (2) solicited renewable energy proposals of various types; (3) continued operations of its solar facilities; (4) enhanced and expanded energy efficiency programs that will generate savings that can be counted towards the Company's REPS requirement; (5) performed research studies, both directly and through strategic partnerships, to enhance the Company's ability to comply with its future REPS requirements; and (6) monitored the progress of projects selected in the first and second tranches of the Competitive Procurement of Renewable Energy ("CPRE") Program of North Carolina House Bill 589 ("NC HB 589"), the RECs from which will be used to meet the Company's future REPS requirements.

Q. IS THE COMPANY ABLE TO USE RECS GENERATED FROM NET METERING FACILITIES TO SATISFY ITS FUTURE REPS REQUIREMENTS?

A. Yes. Under the current Net Metering for Renewable Energy Facilities Rider offered by DEP (Rider NM-4B), a customer receiving electric service under a schedule other than a time-of-use schedule with demand rates ("NMNTD customer") shall provide any RECs to DEP at no cost. Per the Commission's June 5, 2018 *Order Approving Rider and Granting Waiver Request* ("*NMNTD Order*") in Docket Nos. E-2, Sub 1106 and E-7, Sub 1113, for NMNTD customers, DEP may use the PVWatts™ Solar Calculator developed by the National Renewable Energy Laboratory ("NREL") for estimating the generation from NMNTD customers' solar facilities, as

permitted by Commission Rule R8-67(g)(2). Commission Rule R8-67(g)(2) allows the use of a scalable conversion factor for estimating annual generation from program participants. DEP shall then report the total amount of electricity produced by facilities under the Rider directly into NC-RETS in a separately identified generation project. DEP has complied with these requirements and reported generation from NMNTD customers to NC-RETS. The RECs from these facilities are currently in DEP's REC inventory and available for use for future compliance requirements.

Q. ARE THERE OTHER COMPLIANCE REQUIREMENTS IN THE NMNTD ORDER WITH WHICH DEP MUST COMPLY?

A. Yes. The *NMNTD Order* also requires that DEP shall provide NC-RETS monthly with a list of participating customers, including location and the kW capacity of their installations, to be made available on the NC-RETS website. DEP has complied, and continues to comply, with this requirement.

Q. HOW WILL THE CPRE PROGRAM OF NC HB 589 IMPACT DEP'S COMPLIANCE WITH ITS GENERAL REQUIREMENT?

A. Under G.S. § 62-110.8(a), DEC and DEP are responsible for procuring renewable energy and capacity through a competitive procurement program with the purpose of adding renewable energy to the state's generation portfolio in a manner that allows DEC and DEP to continue to reliably and cost-effectively serve their customers' future energy needs. To meet the CPRE Program requirements, the Companies must issue requests for proposals to procure energy and capacity from renewable energy facilities

in the aggregate amount of 2,660 MW (subject to adjustment in certain circumstances) reasonably allocated over a term of 45 months beginning on February 21, 2018, when the Commission approved the CPRE Program.

Renewable energy facilities eligible to participate in the CPRE solicitation(s) include those facilities that use renewable energy resources identified in G. S. § 62-133.8(a)(8), the REPS statute. The renewable energy facilities developed or acquired by the Companies, or the renewable energy procured from a third party through a power purchase agreement under the CPRE Program, must also deliver to the Companies the environmental and renewable attributes, or RECs, associated with the power. The first tranche of CPRE solicitations selected 2 projects for a total of 86 MW in the DEP service territory, and the second tranche selected 1 project for a total of 75 MW in the DEP service territory. Both projects from the first tranche are operational, and the project from the second tranche is expected to come online at the end of 2023. The NC retail allocated portion of the actual and estimated REC production from these projects during the test and billing periods can be found in Presson Exhibit No. 2. DEP plans to use the RECs acquired through the CPRE RFP solicitations for its future REPS compliance requirements and has therefore included the planned MW allocation and timeline in its REPS compliance planning process. Additional details regarding DEP's CPRE compliance activities for the current Test Period are being filed concurrently with this REPS filing and may be reviewed in Docket No. E-2, Sub 1296.

Q. HAS THE COMPANY COMPLIED WITH ITS SOLAR SET-ASIDE REQUIREMENT FOR 2021?

A. Yes, the Company has met its 2021 Solar Set-Aside requirement of 72,352 RECs. Specifically, the RECs to be used for 2021 compliance have been transferred from the NC-RETS Progress Energy Electric Power Supplier account to the Progress Energy Compliance Sub-Account. Upon completion of this regulatory proceeding, the Commission will finalize retirement of the RECs.

Q. WILL THE COMPANY COMPLY WITH ITS SOLAR SET-ASIDE REQUIREMENT IN 2022?

A. Yes, the Company will be in compliance with its Solar Set-Aside requirement in 2022.

Q. PLEASE PROVIDE AN UPDATE ON THE COMPANY'S EFFORTS TO COMPLY WITH ITS SOLAR SET-ASIDE REQUIREMENT.

A. The Company is in a position to comply with its Solar Set-Aside requirement in 2022 through a diverse and balanced portfolio of solar resources. The Company's efforts to comply with the Solar Set-Aside requirement include REC generation and procurement from solar renewable energy facilities.

The Company previously constructed four DEP-owned solar photovoltaic ("PV") facilities, which will generate an estimated 250,000 RECs per year over the life of the projects. These facilities include the 13 MW Camp Lejeune Solar Facility located in Onslow County, the 40 MW

Elm City Solar Facility located in Wilson County, the 23 MW Fayetteville Solar Facility located in Bladen County, and the 65 MW Warsaw Solar Facility located in Duplin County.

Q. HAS THE COMPANY COMPLIED WITH ITS POULTRY WASTE SET-ASIDE REQUIREMENT FOR 2021?

A. Yes, the Company has met its 2021 Poultry Waste Set-Aside requirement of 83,850 RECs. Specifically, the RECs to be used for 2021 compliance have been transferred from the NC-RETS Progress Energy Electric Power Supplier account to the Progress Energy Compliance Sub-Account. Upon completion of this regulatory proceeding, the Commission will finalize retirement of the RECs.

Q. WILL THE COMPANY COMPLY WITH ITS POULTRY WASTE SET-ASIDE REQUIREMENT IN 2022?

A. Yes, the Company will be in compliance with the Poultry Waste Set-Aside requirement in 2022. Compliance with the poultry waste requirement for 2023 and 2024 appears achievable, but is dependent on the performance of poultry waste-to-energy developers under current contracts, particularly achievement of projected delivery requirements and commercial operation milestones. One new poultry waste-to-energy project is expected to come online in 2022 and another in 2024. Historical experience indicates that facilities usually incur some start-up issues and take time to reach full expected production levels. The Companies are, nevertheless, encouraged

by the performance of many current poultry waste-to-energy facilities and the proposals that have recently been received from developers.

Q. WHAT ACTIONS HAS THE COMPANY TAKEN DURING THE TEST PERIOD TO PROCURE OR DEVELOP POULTRY WASTE-TO-ENERGY RESOURCES TO SATISFY ITS POULTRY WASTE SET-ASIDE REQUIREMENTS?

A. In the Test Period, the Company (1) continued direct negotiations for additional supplies of both in-state and out-of-state resources; (2) secured contracts for additional poultry waste-to-energy resources; (3) continued pursuit of poultry-derived directed biogas from facilities located in North Carolina and directing such biogas to combined cycle plants for combustion and electric generation; (4) worked diligently to understand the technological, permitting, and operational risks associated with various methods of producing qualifying poultry RECs to aid developers in overcoming those risks; when those risks could not be overcome, the Company worked with developers via contract amendments to adjust for more realistic outcomes; (5) explored leveraging current bioenergy contracts by working with developers to add poultry waste to their fuel mix; (6) explored adding thermal capabilities to current poultry sites to bolster REC production; (7) evaluated out-of-state poultry REC offers when available in the market; and (8) funded a North Carolina biogas utilization study through RTI International with hopes for future growth of poultry-derived directed biogas project development. Additional information on the

Company's compliance with the Poultry Waste Set-Aside requirement can be found in the Company's Joint Semiannual Progress Report, filed on June 1, 2022 in Docket No. E-100, Sub 113A.

The Company remains committed to satisfying its statutory requirements for the Poultry Waste Set-Aside and will continue to reasonably and prudently pursue procurement of these resources.

Q. HAS THE COMPANY COMPLIED WITH ITS SWINE WASTE SET-ASIDE REQUIREMENT FOR 2021?

A. Yes, the Company has met its 2021 Swine Waste Set-Aside requirement of 25,323 RECs. Specifically, the RECs to be used for 2021 compliance have been transferred from the NC-RETS Progress Energy Electric Power Supplier account to the Progress Energy Compliance Sub-Account. Upon completion of this regulatory proceeding, the Commission will finalize retirement of the RECs.

Q. WILL THE COMPANY COMPLY WITH ITS SWINE WASTE SET-ASIDE REQUIREMENT IN 2022?

A. Compliance with the swine waste set-aside for 2022 and beyond is uncertain and will be difficult to meet as the swine waste obligation increases. Swine waste-to-energy compliance challenges have been numerous and varied. Existing contracts have not reached contracted levels of production, and new contracts have failed to come online in the timeframe originally planned and have taken longer than expected to ramp up production. One new swine waste-to-energy project is under construction and is scheduled

to come online in 2022, and one is scheduled to come online in 2023. The ability of these new facilities to come online and for all facilities to produce their full contracted RECs will determine the levels of compliance that DEC and DEP are able to meet in the near term.

Successfully developing additional swine waste-to-energy projects in North Carolina has been a slow and tedious process over the last few years due to several factors. The Companies understand that swine waste-to-energy projects have encountered difficulties due to issues including local opposition to siting of the facilities, the inability to secure firm and reliable sources of swine waste feedstock from waste producers, difficulties securing project financing, technological challenges encountered when ramping up production and issues with lower-than-expected production due to revised industry expectations, farm waste management and biosecurity practices. Additionally, the outbreak of the COVID-19 pandemic adversely impacted swine and poultry farms and processing plants in North Carolina through staff shortages, personal protective equipment supply issues, and delivery challenges. COVID-19, together with the war in Ukraine, have created or exacerbated global supply chain disruptions, affecting prices and availability of equipment and building materials. Disruptions in work flows due to COVID have led to depleted inventories, and market price volatility for certain materials (e.g., stainless steel, rebar) has caused reluctance by suppliers to carry inventories, in turn creating shortages for those materials and goods. All of these factors together have caused shipment delays and

thus increased wait times on completion of new facilities. Developers have also communicated potential delays as they work through the regulatory process, environmental regulations and other stakeholder concerns affecting their development plans.

Q. WHAT ACTIONS HAS DUKE ENERGY PROGRESS TAKEN DURING THE TEST PERIOD TO PROCURE OR DEVELOP SWINE WASTE-TO-ENERGY RESOURCES TO MEET ITS SWINE WASTE SET-ASIDE REQUIREMENTS?

A. In the Test Period, the Company (1) continued direct negotiations for additional supplies of both in-state and out-of-state resources; (2) secured contracts for additional swine waste-to-energy resources; (3) continued pursuit of swine-derived directed biogas from North Carolina facilities, working with Piedmont Natural Gas Company, Inc. to locate favorable biogas injection sites; (4) worked diligently to understand the technological, permitting, and operational risks associated with various methods of producing qualifying swine RECs to aid developers in overcoming those risks; when those risks could not be overcome, the Company worked with developers via contract amendments to adjust for outcomes that the developers believe are achievable based on new experience; (5) explored leveraging current bioenergy contracts by working with developers to add swine waste to their fuel mix; (6) evaluated out-of-state swine REC offers when available in the market; and (7) continued support of research through North Carolina State University associated with on-farm swine waste

drying technology and mortality combustion possibilities as well as funding a North Carolina biogas utilization study through RTI International with hopes for future growth of swine-derived directed biogas project development. Additional information on the Company's compliance with the Swine Waste Set-Aside requirement can be found in the Company's Joint Semiannual Progress Report, filed on June 1, 2022 in Docket No. E-100, Sub 113A.

The Company remains committed to satisfying its statutory requirements for the Swine Waste Set-Aside and will continue to reasonably and prudently pursue procurement of these resources.

Q. IS DUKE ENERGY PROGRESS CONTINUING TO EXECUTE ADDITIONAL REC PURCHASE AGREEMENTS?

A. Yes. The Company continues to execute additional REC purchase agreements and maintains an open solicitation for proposals from developers of renewable energy resources.

Q. DID THE COMPANY SELL ANY RECS DURING THE TEST PERIOD?

A. No, the Company did not sell any RECs during the test period.

Costs of REPS Compliance

Q. WHAT ARE THE COMPANY'S COSTS ASSOCIATED WITH REPS COMPLIANCE DURING THIS TEST PERIOD AND THE UPCOMING BILLING PERIOD?

A. Duke Energy Progress' costs associated with REPS compliance are reflected in Presson Confidential Exhibit No. 2 and are categorized by actual costs incurred during the Test Period and projected costs for the Billing Period.

Q. IN ADDITION TO RENEWABLE ENERGY AND REC COSTS, WHAT OTHER COSTS OF REPS COMPLIANCE DOES THE COMPANY SEEK TO RECOVER IN THIS PROCEEDING?

A. Presson Confidential Exhibit Nos. 2 and 3 identify "Other Incremental Costs," "Solar Rebate Program Costs," and "Research Costs" the Company incurred, and estimates it will incur, in association with REPS compliance.

Other Incremental Costs and Solar Rebate Program Costs

Q. PLEASE EXPLAIN THE OTHER INCREMENTAL COSTS INCLUDED FOR RECOVERY IN THIS PROCEEDING.

A. Other Incremental Costs include labor costs associated with REPS compliance activities and non-labor costs associated with administration of REPS compliance. Among the non-labor costs associated with REPS compliance are the Company's subscription to NC-RETS, and accounting and tracking tools related to RECs, reduced by agreed-upon liquidated damages paid by sellers for failure to meet contractual milestones, and amounts paid for administrative contractual amendments requested by sellers.

Q. PLEASE PROVIDE INFORMATION ON THE NC HB 589 (SL 2017-192) SOLAR REBATE PROGRAM ("SOLAR REBATE PROGRAM").

A. As required by G.S. § 62-155(f), DEP developed a Solar Rebate Program offering reasonable incentives to residential and non-residential customers for the installation of small customer owned or leased solar energy facilities participating in the Company's net metering tariff. The incentive is limited to 10 kilowatts alternating current ("kW-AC") for residential solar installations and 100 kW-AC for non-residential solar installations. The program incentive was limited to 10,000 kW of installed capacity annually starting January 1, 2018 and continuing until December 31, 2022.

Consistent with the Commission's April 3, 2018 order and subsequent orders in Docket Nos. E-7, Sub 1166 and E-2, Sub 1167, the Solar Rebate Program launched on July 9, 2018. In every year since its launch, the Solar Rebate Program's annual participation limits for the residential and non-residential classes have been met, although the 2,500 kW of capacity limit for non-profit organizations has not been met.

On April 1, 2020, DEP filed its Solar Rebate Program Annual Report for 2019, which included: (1) information on problems encountered with the 2020 solar rebate application process due to a website malfunction, (2) the Company's commitment to technological fixes, and (3) proposed changes to the program to avoid a recurrence of the problems in future years, including a request to amend the program application windows for

2021 and 2022. The NCUC subsequently issued an *Order Allowing Comments on 2019 Annual Report*, through which parties could propose their own changes to the program for the Commission's consideration. Multiple parties filed comments and reply comments. On November 6, 2020, the NCUC issued its *Order Modifying Fourth Year of Solar Rebate Program and Requesting Additional Comments* ("*November 2020 Order*"), in which the Commission approved Duke Energy's recommendation that half of the available annual capacity each year be offered in January and half in July. Thus, the first window of the 2021 program opened on January 6 with incentive amounts remaining at the 2020 levels of $0.60 per watt for residential customer installations, $0.50 per watt for commercial customer installations, and $0.75 per watt for non-profit customers. On January 8, 2021, DEP filed a notice that the participation limit for the first window of 2021 for residential and non-residential customers under the Solar Rebate Program, exclusive of the non-profit participation set-aside, was reached quickly.

Also in its *November 2020 Order*, the Commission solicited comments recommending revised rebate amounts for residential, non-residential, and non-profit customers for consideration to be effective for the application window opening on July 7, 2021, with particular interest in the viability of a tiered system aimed at incentivizing smaller solar installations with a declining incentive structure up to 10 kW for residential customer installations and 100 kW for non-residential customer installations.

On March 3, 2021, the Companies filed an Application for Approval to Revise Solar Rebate Program in which they requested that the Commission:

(1) implement a lottery for the Solar Rebate Program, beginning with the July 2021 launch,

(2) eliminate the 90-day rule, such that customers who installed a system on or after October 6, 2020 would be eligible to apply for future rebates, and

(3) allow residential customers and non-residential customers under 20 kW 180 days from the rebate reservation award to install their systems, with the exception of non-profit systems.

On March 23, 2021, the Commission issued an *Order Modifying Solar Rebate Program and Allowing Comments* ("*March 2021 Order*") in which it reduced the solar rebate incentive to reflect the current reasonable cost of these solar installations to $0.40 per watt for residential installations and $0.30 per watt for non-residential installations. The incentive for non-profit customer installations remained at $0.75 per watt. Additionally, the Commission granted Duke Energy's request to implement a lottery for the solar rebate program beginning with the scheduled July 2021 period. The Commission did not approve Duke Energy's request to eliminate the 90-day rule or modify the installation period, but requested additional information and proposals regarding appropriate installation time periods for residential customers and small commercial (under 20 kW non-

residential) customers that are less than 180 days, in order to allow uninstalled capacity to be allocated to customers waitlisted during that enrollment period or to allow more capacity to be included in the following lottery.

On July 8, 2021, the Commission issued an *Order Modifying Reservation Install Period* for customers who receive a rebate reservation in the July and January application windows. Residential and small commercial customers who received a rebate reservation in the July 2021 application window had until December 15, 2021 to install their solar systems; if their systems were not installed by December 15, 2021, their application and rebate eligibility was cancelled and the resulting unused capacity was allocated to customers on the July 2021 waitlist. Likewise, residential and small commercial customers who received a rebate reservation in the January 2022 application window have until June 15, 2022 to install their solar systems; if their systems are not installed by June 15, 2022, their application and rebate eligibility will be cancelled and the resulting unused capacity will be allocated to customers on the January 2022 waitlist.

The July 2021 enrollment period limits were reached for residential and non-residential customers after the random selection process following the close of the application period on July 14, 2021. Since the participation limit was not reached for non-profit customers, the Company continued to accept applications for non-profit installations. Additional details relating

to the random selection process may be found in the Company's informational filing made August 27, 2021, as required by the *March 2021 Order*.

The January 2022 enrollment period began January 5, 2022. Participation caps for both residential and non-residential customers were met following the random selection process established in 2021. The Company continues to accept applications for non-profit customers and will update the Company website if the participation limits for non-profit customers are reached.

As stated in the Company's Joint Biannual Solar Rebate Program Report filed on April 1, 2022, any set-aside rebates that are not used by December 31, 2022 shall be reallocated for use by any customer who otherwise qualifies. The unsubscribed capacity would become available for a random selection process in January 2023.

Q. ARE COSTS RELATED TO THE NC HB 589 SOLAR REBATE PROGRAM INCLUDED FOR RECOVERY IN THIS FILING?

A. Yes. Pursuant to G.S. § 62-155(f), each public utility required to offer a solar rebate program "shall be authorized to recover all reasonable and prudent costs of incentives provided to customers and program administrative costs by amortizing the total program incentives distributed during a calendar year and administrative costs over a 20-year period, including a return component adjusted for income taxes at the utility's overall weighted average cost of capital established in its most recent

general rate case, which shall be included in the costs recoverable by the public utility pursuant to G.S. 62-133.8(h)." G.S. § 62-133.8(h) provides for an electric power supplier's cost recovery and customer charges under the REPS statute; NC HB 589 (SL 2017-192) amended it by adding a provision to allow for the recovery of incremental costs incurred to "provide incentives to customers, including program costs, incurred pursuant to G.S. § 62-155(f)." Therefore, DEP has included for recovery in this filing both costs incurred during the EMF period, and projected to be incurred in the Billing Period, related to the implementation of the NC HB 589 Solar Rebate Program. As detailed on Presson Confidential Exhibit No. 3, these costs include the annual amortization of incentives paid to customers and program administration costs which includes labor, information technology, and marketing costs. Projected incentive costs for the Billing Period are based on the currently-approved rebate amounts.

A residential customer who obtained a rebate reservation in the January 2022 application window must complete the installation of their solar system by June 15, 2022. A residential customer who obtains a rebate reservation in the July 2022 application window must complete the installation by December 15, 2022.

A non-residential customer with a project of 20 kW or less who does not require an interconnection agreement and who obtained a rebate reservation in the January 2022 application window must complete the installation of their system by June 15, 2022. A non-residential customer

with a project of 20 kW or less who does not require an interconnection agreement and who obtains a rebate reservation in the July 2022 application window must complete the installation of their system by December 15, 2022.

A non-profit customer with a project that is 20 kW or less, who obtained a rebate reservation in the January 2022 application window and who does not require an interconnection agreement must complete installation of their system within 365 days of the date Duke Energy issues the rebate reservation.

Non-residential or non-profit customers with a project size over 20 kW-AC, who obtained a rebate reservation prior to installation, must complete installation no later than 365 days from the date of an executed interconnection agreement.

Therefore, rebate payments for a specific program year may continue into the next year, with payments likely continuing after the final program year.

Q. PLEASE PROVIDE DETAIL ON THE INTERNAL LABOR COSTS THAT ARE ASSOCIATED WITH REPS COMPLIANCE AND NC HB 589 (SL 2017-192) SOLAR REBATE PROGRAM ACTIVITIES THAT ARE INCLUDED IN DEP'S CURRENT APPLICATION FOR REPS COST RECOVERY.

A. DEP charges only the incremental cost of REPS compliance and the NC HB 589 (SL 2017-192) Solar Rebate Program to the REPS cost recovery rider.

Consistent with that policy and DEP's practices in previous applications for cost recovery for REPS compliance, internal employees who work to comply with G.S. § 62-133.8 and G.S. § 62-155(f) charge only that portion of their labor to REPS. The departments/functions that charged labor to REPS during the Test Period are detailed in Presson Confidential Exhibit No. 3.

Q. HOW DO EMPLOYEES CHARGE THEIR REPS-RELATED AND NC HB 589 (SL2017-192) SOLAR REBATE PROGRAM-RELATED LABOR COSTS TO REPS?

A. Employees positively report their time, which means that each employee is required to submit a timesheet every two weeks in the Company's time reporting system. The hours reported for the period are split according to the accounting entered in the time reporting system for that specific employee, and the division of hours is updated for each reporting period as the nature of the employee's work changes. Additionally, every year prior to filing for approval of the DEP REPS Compliance Report and Cost-Recovery Rider, the labor hours charged are carefully reviewed and confirmed.

Research Costs

With respect to Research activities during the Test Period and projected for the Billing Period, the Company has incurred or projects to incur costs associated with the support of various pilot projects and studies related to distributed energy technology and the Company's REPS compliance.

Q. THE COMMISSION'S *ORDER APPROVING REPS AND REPS EMF RIDERS AND 2012 REPS COMPLIANCE* REQUIRES DUKE ENERGY PROGRESS TO FILE WITH ITS 2021 REPS RIDER APPLICATION STUDY RESULTS FOR ANY STUDIES THE COSTS OF WHICH IT HAS RECOVERED VIA THE REPS RIDER. IS THE COMPANY SUPPLYING SUCH STUDIES IN THIS FILING?

A. Yes. The Company's Research efforts are an integral part of its REPS Compliance efforts. The following summary outlines efforts undertaken by the Company in the test period and specifies the availability of applicable study results.

- Astrapé – Battery Storage Effective Load Carrying Capability ("ELCC") Study – In 2020, the Company contracted with Astrapé Consulting to analyze the capacity value of battery technology within the Company's system. The study results provide the capacity value for battery energy storage systems used in the Company's Integrated Resource Plans. Charges were incurred in 2021 to wrap up the study. The results of this project were previously provided in E-2, Sub 1276 Jennings Exhibit No. 4.
- Astrapé – Effective Load Carrying Capability Study – In 2021 the Company requested a study to analyze the capacity value of solar, storage, and wind within each system. Both DEC and DEP are winter planning due to winter peak loads and the amount of solar on

the systems. Because of this, the study focused on winter capacity values which can then be used for reserve margin accounting and expansion planning purposes. Average seasonal capacity values are used for reserve margin calculations, and seasonal marginal values can be used for capacity expansion planning. The study results provide the winter capacity value for solar, storage and wind which are used in both the Companies' Carbon Plan and its Integrated Resource Plans. The results of this study can be found in Presson Exhibit No. 4.

- Bring Your Own Battery Study – In 2021 the Company contracted Virtual Peaker, an aggregation technology vendor who can control and collect data from battery storage original equipment manufacturers ("OEMs"), to evaluate utilizing residential customer-owned batteries as a demand response resource. The Company plans to study the aggregation technology, battery discharge, customer usage patterns and the customer experiences that could inform a future pilot or program filing. The progress for this report can be found in Presson Exhibit No. 5.
- Center for Advanced Power Engineering Research ("CAPER") – Developing large Distributed Energy Resources ("DER") Protection Guidelines and Settings for Mitigating System-wide Impacts across T&D Systems – In late 2021, the Company started the project with the North Carolina State University ("NCSU" or "NC State

University"), the University of North Carolina at Charlotte ("UNCC"), and Clemson University ("Clemson") through CAPER. The project is to develop a strategy for evaluating protection device, recloser settings and control algorithms for Inverter-based Resources ("IBR") with high penetration levels of DER at both the distribution and transmission levels with an integrated simulation model. The project scope can be found in Presson Confidential Exhibit No. 6.

- Coalition for Renewable Natural Gas – The Company renewed its membership to the Coalition for Renewable Natural Gas in 2021 to add a valuable resource of knowledge and public policy advocation in this growing sector of potential animal waste supply. The Coalition for Renewable Natural Gas provides its members with exclusive whitepapers, support on model pipeline gas specifications and access to other members for discussions on current and future projects. The Company also provided funding through the Coalition for Renewable Natural Gas for additional studies including: an Economic Analysis of the US Renewable Natural Gas Industry, which is included as Presson Exhibit No. 7; a white paper on the sustainability profile of RNG, authored by Professors at Rutgers University, which is included as Presson Confidential Exhibit No. 8; a study by Colorado State University of methane leakage from RNG processing facilities to promote improved practices, which is

close to completion; and a literature review and scientific journal article on the benefits and challenges of RNG to be authored by researchers at Duke University and Stanford University.

- DC Meter Testing Project – In 2021 the Company worked with Open Energy Solutions, Accuenergy and Renewable Design Associates on a project to test the DEC energy meters and evaluate their functionality and accuracy along with software testing to allow communications to the Company's back-end metering systems. The results of this project can be found in Presson Exhibit No. 9.
- Distributed Generation ("DG") Cost of Service Study – In 2021 the Company completed the project with NC State University and Advanced Energy to determine the cost-of-service impacts of DG. This study focused on the Operations and Maintenance and planning costs the utility incurs due to the DG impact on the system and develops a methodology for their quantification. The study results were filed with the North Carolina Utilities Commission under Docket No. E-100, Sub 101 on June 30, 2021 (https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=85f553b4-2f26-48ea-841e-470b1358bb08).
- Electric Power Research Institute ("EPRI") – In 2021 the Company subscribed to the following EPRI programs, the costs of which were recovered via the REPS rider: Program 174 – Integration of Distributed Energy Resources ("DER"), and Program 94 – Energy

Storage and Distributed Generation. The Company continued its support of one supplemental project under Program 174 – "Model-Based Analysis of DER Functions and Settings." EPRI designates such study results as proprietary or as trade secrets and licenses such results to EPRI members, including Duke Energy Progress. As such, the Company may not disclose the information publicly. Non-members may access these studies for a fee. Information regarding access to this information can be found at http://www.epri.com/Pages/Default.aspx.

- NC State University's ("NCSU") Future Renewable Electric Energy Delivery and Management ("FREEDM") Systems Center – Duke Energy supports NCSU's FREEDM Center through annual membership dues. The FREEDM partnership provides Duke Energy with the ability to influence and focus research on materials, technology, and products that will enable the utility industry to transform the electric grid into a two-way power flow system supporting distributed generation.
- NCSU – Adopting DVAR to Mitigate PV Impacts on a Distribution System, Phase 2 – In late 2021, the Company kicked off phase 2 of the project with NCSU to assess the effectiveness of the American Superconductor Corporation Dynamic Volt-Amp Reactive Compensation Solution ("mini-DVAR") in mitigating various power quality issues on distribution circuits due to increasing

penetration of PV. Phase 2 of the study focuses on the development of more dynamic dispatching schemes for the mini-DVAR such that the expected benefits are maximized. The project scope for phase 2 can be found in Presson Confidential Exhibit No. 10.

- NCSU – Feeder Anti-islanding Detection Using HIL Modeling and Simulation – In 2021 the Company completed the project with NCSU to evaluate the challenge from increasing penetration of PV and installation of mini-DVAR to the islanding protection scheme. This project started in 2019 with the scope of using a Hardware-in-the-loop ("HIL") setup to simulate different fault conditions with the Schweitzer Engineering Laboratories ("SEL") relays at PV sites and different operating conditions. The project had been paused during 2020 due to COVID-related lab access restrictions. The final report for this project can be found in Presson Confidential Exhibit No. 11.
- NCSU – Swine Lagoon Sludge Research Study – The Animal and Poultry Waste Management Center ("APWMC") at NC State University – In 2021 the Company continued support of the various projects being undertaken by the APWMC. This work is centered around drying swine lagoon solids, bagged lagoon sludge and lagoon sludge mixed with agricultural wastes at a farm-based level to create a higher MMBtu fuel that can be safely and easily transported to a central plant for combustion. An update on the project can be found in Presson Confidential Exhibit No. 12.

- Research Triangle Institute – Biogas Utilization in North Carolina – In 2021 the Company continued support of the Research Triangle Institute project for the NC Energy Policy Council to determine the potential bioenergy/biogas resources available in NC and to identify the most beneficial and optimum utilization of resources to maximize economic, environmental and societal advantages. An overview of the project can be found in Presson Confidential Exhibit No. 13.
- Smart Electric Power Alliance ("SEPA") – The Company renewed its membership to the Smart Electric Power Alliance in 2021. SEPA provides its members with exclusive whitepapers and working group event opportunities on various topics including DER integration, DER management systems, energy efficiency and demand response, electric vehicle development, microgrid and grid resiliency. Please visit SEPA's website at https://sepapower.org/ for more information on SEPA.
- Southeast Wind Coalition ("SEWC") – The Company renewed its membership in the Southeast Wind Coalition in 2021. SEWC conducts research on land-based wind, offshore wind, and energy storage, which informs the Company of potential renewable generation opportunities that may enable the Company to comply with REPS in a cost-effective manner. In addition, SEWC's work is to advance wind policies across the southeast by holding

conferences, addressing prohibitive state policies related to wind deployment, and ensuring workforce development and educational outreach. Please visit SEWC's website at https://www.sewind.org/ for more information on SEWC.

- University of North Carolina at Charlotte ("UNCC") – Power Flow Analysis to Improve Integrated Volt/Var ("IVVC") and Energy Efficiency Programs – In late 2021 the Company contracted with UNCC to address the issue of inaccurate power flow analysis results in the current Distribution Management System when there are Distributed Energy Resources ("DER") on a distribution system. This research will directly benefit IVVC programs and enable utilities to operate IVVC more effectively on systems with high levels of DERs. The project scope can be found in Presson Exhibit No. 14.
- UNCC – Reliabililty Assessment for Utility PV Inverter System – In late 2021 the Company contracted with UNCC to conduct research on the Reliability Assessment for Utility PV Inverter Systems. The goal of this project is to develop a reliability assessment tool to support the development of safer and more reliable PV, quantitatively assess the PV system reliability based on field data provided by Duke Energy, and provide recommendations for failure mechanism identification, predictive maintenance and

lifetime extension strategy. The project scope can be found in Presson Exhibit No. 15.

- UNCC – Resilient Community Microgrids with Dynamic Reconfiguration to Serve Critical Loads in the Aftermath of Severe Events – In 2021 the Company supported UNCC in the research project awarded by the Department of Energy ("DOE") Office of Energy and Efficiency and Renewable Energy ("EERE") under DE-FOA-0002243. Duke Energy supports this project with the expectation that it address all topics of interest: (1) the study will recommend a methodology which specifies relay-protection elements and settings for utilization in island mode of operation; (2) the study will recommend methodologies for island black start sequences; and (3) a performance evaluation of the microgrid-control will be provided. This is a three-year project expected to be complete in April 2024. The progress for this project can be found in Presson Confidential Exhibit No. 16.

Q. ARE YOU SATISFIED THAT THE ACTUAL COSTS INCURRED IN THE TEST PERIOD HAVE BEEN, AND THAT THE PROJECTED COSTS OF THE BILLING PERIOD WILL BE, PRUDENTLY INCURRED?

A. Yes. Duke Energy Progress believes it has incurred and projects to incur all of these costs associated with REPS compliance in a prudent manner. The Company continues to exercise thorough and rigorous technical and

economic analysis to evaluate all options for compliance with its REPS requirements. Duke Energy Progress has developed strong foundational market knowledge related to renewable resources. The Company continues to enhance and develop expertise in this field through the Company's various solicitations for renewable energy and the operation of its unsolicited bid process, its operation of DEP-owned utility-scale solar facilities, its participation in industry research, and daily interaction with developers of renewable energy facilities. As a result of these efforts, the Company has been able to identify, procure, and develop a diverse portfolio of renewable resources to meet its REPS requirements in a prudent, reasonable, and cost-effective manner.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.