NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION

August 24, 2024

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. E-2, Sub 1294 – Duke Energy Progress, LLC
Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C. Gen. Stat. § 62-133.9 and Commission Rule R8-69

Dear Ms. Dunston:

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

1. Direct Testimony and Exhibit of Michelle M. Boswell, Director, Accounting Division; and

2. Directed Testimony and Exhibits of David M. Williamson, Utilities Engineer, Energy Division.

By copy of this letter, I am forwarding a copy to all parties of record by electronic delivery.

Sincerely,

Electronically submitted
s/ Nadia L. Luhr
Staff Attorney
nadia.luhr@psncuc.nc.gov

Attachments

Executive Director (919) 733-2435	Accounting (919) 733-4279	Consumer Services (919) 733-9277	Economic Research (919) 733-2267
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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1294

In the Matter of		
Application of Duke Energy Progress,	)	TESTIMONY OF
LLC, for Approval of Demand-Side	)	MICHELLE M. BOSWELL
Management and Energy Efficiency	)	PUBLIC STAFF –
Cost Recovery Rider Pursuant to	)	NORTH CAROLINA
N.C.G.S. § 62-133.9 and Commission	)	UTILITIES COMMISSION
Rule R8-69	)	

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND PRESENT POSITION.

A. My name is Michelle M. Boswell. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am the Director of the Accounting Division of the Public Staff – North Carolina Utilities Commission (Public Staff).

Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.

A. A summary of my qualifications and duties is set forth in Appendix A of this testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present the review of the Application submitted by Duke Energy Progress, LLC (DEP or the Company) regarding the Demand-Side Management (DSM) and Energy Efficiency (EE) cost and incentive recovery rider (DSM/EE Rider)[1] filed in this docket on June 14, 2022, and supplemented on August 23, 2022. The DSM/EE Rider is authorized by N.C. Gen. Stat. § 62-133.9 and implemented pursuant to Commission Rule R8-69.

[1] The DSM/EE Rider is comprised of various class-based DSM, EE, DSM Experience Modification Factor (DSM EMF), and EE EMF billing rates.

Q. PLEASE DESCRIBE THE BASIS FOR THE COMPANY'S FILING.

A. North Carolina General Statute § 62-133.9(d) allows a utility to petition the Commission for approval of an annual rider to recover: (1) the reasonable and prudent costs of new DSM and EE measures; and (2) other incentives to the utility for adopting and implementing new DSM and EE measures. However, N.C.G.S. § 62-133.9(f) allows industrial and certain large commercial customers to opt out of participating in the power supplier's DSM/EE programs and paying the DSM/EE rider, if each such customer notifies its electric power supplier that it has implemented or will implement, at its own expense, alternative DSM and EE measures. Commission Rule R8-69, which was adopted by the Commission pursuant to N.C.G.S. § 62-133.9(h), sets forth the general parameters and procedures governing approval of the annual rider, including, but not limited to: (1) provisions for both (a) a DSM/EE rider to recover the estimated costs and utility incentives applicable to the "rate period" in which that DSM/EE rider will be in effect, and (b) a DSM/EE EMF rider to recover the difference between the DSM/EE rider in effect for a given test period (plus a possible extension) and the actual recoverable amounts incurred during that test period; and (2) provisions for interest or a return on amounts deferred and on refunds to customers.

In this proceeding, DEP has calculated its proposed DSM/EE Rider (incorporating both prospective and EMF DSM and EE billing rates) using, for vintage years prior to 2022, the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved by the Commission in Docket No. E-2, Sub 931 (Sub 931), on January 20, 2015, in its Order Approving Revised Cost Recovery and Incentive Mechanism and Granting Waivers, as subsequently revised by the Commission in its August 23, 2017 Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice, issued in the Company's 2017 DSM/EE rider proceeding in Docket No. E-2, Sub 1145 (2017 Mechanism).[2] For vintage years 2022 and after, the Company utilized a revised mechanism,[3] which was approved by the Commission on October 20, 2020, also in Sub 931, in its Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery

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[2] Certain billing factor components consisting of costs incurred or incentives earned prior to January 1, 2016, but being carried forward to or amortized as part of the billing factors proposed in this proceeding, were determined pursuant to the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs (Initial Mechanism) approved by the Commission on June 15, 2009, in its Order Approving Agreement and Stipulation of Partial Settlement, Subject to Certain Commission-Required Modifications, in Docket No. E-2, Sub 931, as modified by the Commission's November 25, 2009 Order Granting Motions for Reconsideration in Part, in the same docket.

[3] In the same order, which was also issued in Docket No. E-7, Sub 1032, the Commission also approved a revised DSM/EE Cost Recovery and Incentive Mechanism for Duke Energy Carolinas, LLC (DEC).

Mechanisms, and took effect on January 1, 2022, (2020 Mechanism).

The Public Staff detailed the development and major components of the 2017 and 2020 Mechanisms in the testimony of Michael C. Maness in Docket No. E-2, Sub 1273.

Q. HAS THE COMPANY PROPOSED ANY CHANGES IN THIS PROCEEDING TO THE 2020 COST RECOVERY MECHANISM?

A. Yes. Pursuant to the Commission's order in last year's DSM/EE rider proceeding in Docket No. E-2, Sub 1273, the Company has proposed language to incorporate the Commission-ordered methodology to be used regarding the inclusion of the Reserve Margin Adjustment Factor (RMAF). The Public Staff's review of this language is described in the testimony of Public Staff witness David M. Williamson. Boswell Exhibit I is the 2020 Mechanism as revised to include the proposed RMAF language.

Q. PLEASE DESCRIBE THE BILLING FACTORS, VINTAGE YEARS, RATE PERIOD, AND TEST PERIOD BEING CONSIDERED IN THIS PROCEEDING.

A. In its Application in this proceeding, DEP requested approval of prospective and EMF DSM and EE billing rates that would result in annual North Carolina retail revenue of approximately $155 million. These proposed billing factors are set forth on DEP witness

Listebarger's Exhibit 1. The factors (rates), as applicable to each class, are proposed by the Company to be charged to all participating North Carolina retail customers (i.e., those that have not opted out pursuant to N.C.G.S. § 62-133.9(f)) served during the rate period.

The decrease in the monthly bill of a residential customer using 1,000 kilowatt-hours (kWh) of energy resulting from this revenue requirement decrease would be $0.81. The change in a non-residential customer's bill would depend on the particular vintage years of DSM and/or EE rates for which the customer is opted out or opted in.

The rate period for this proceeding is the twelve-month period from January 1, 2023, through December 31, 2023. This is the period over which the prospective DSM and EE billing rates and the DSM and EE EMF billing rates determined in this proceeding will be charged. It is also the period for which the estimated revenue requirements (program costs, net lost revenues (NLR), and Program Performance Incentive (PPI)) to be recovered through the prospective DSM/EE rates are determined.

The test period applicable to this proceeding is the twelve-month period ended December 31, 2021. This is the period for which the under- or over-recovery of DSM/EE revenue requirements as compared to actual DSM/EE rider revenues is measured for purposes of determining the DSM and EE EMF billing rates (although Commission Rule R8-69(b) allows the true-up to be extended to cover additional months, subject to review and adjustment in the following year's proceeding). Actual program costs considered for true-up in this proceeding are either costs actually incurred during the test period, or further true-ups or corrections related to previous test periods. For purposes of recovery, actual program costs may be amortized over periods ranging from one to ten years. A return is also calculated on program costs deferred during the test year and on over-recoveries of total revenue requirements after the date the rates change. NLR and PPI reflected in the EMF revenue requirements being set in this proceeding are associated with kWh and dollar savings achieved during Vintage Year 2021 (which is also the test year), as well as true-ups associated with prior vintage years. The PPI revenue requirement may also be amortized on a levelized basis over several years.

Q. WHAT ARE SOME OF THE CHARACTERISTICS OF DEP'S PROPOSED DSM/EE BILLING FACTORS IN THIS SPECIFIC PROCEEDING?

A. The prospective DSM and EE billing rates incorporate several cost recovery elements as estimated for the rate period, including amortizations of operations and maintenance costs, administrative and general (A&G) costs, capital costs of the Demand Side

Distribution Response program, carrying costs (return on deferred costs), NLR, and levelized PPI incentives. The test period true-up DSM and EE EMF billing rates contain test period actual amounts of the same types of costs and incentives as the prospective rates. The DSM and EE EMF billing rates may also include adjustments to any required return on over- or under-collections of DSM/EE revenues.

Q. WILL THERE BE FUTURE TRUE-UPS OF THE DSM/EE REVENUE REQUIREMENTS?

A. The finalization of the true-ups of NLR and PPI sometimes lags behind the true-ups of program costs and A&G expenses subject to amortization. This feature of the true-up process is due to the fact that, while cost amounts are typically known and determinable very soon after they are incurred, it can take several months or years to complete the applicable EM&V process and to refine and adjust the cost savings results for a given vintage year so that the final actual incentives payable to the utility can be determined. Therefore, while the cost amounts to be trued up as part of the test period DSM/EE EMF revenue requirement typically correspond very closely to the actual costs incurred during the test period, the test period revenue requirement often contains incentives related to more than one vintage year. Additionally, certain components of the revenue requirements related to prior years will remain subject to prospective update adjustments and retrospective true-ups in the future, as participation and EM&V analyses are finalized, reviewed, and perhaps refined.

Q. PLEASE DESCRIBE YOUR INVESTIGATION OF DEP'S FILING.

A. The Public Staff's investigation of DEP's filing in this proceeding focused on determining whether the proposed DSM/EE Rider (a) was calculated in accordance with the 2017 or 2020 Mechanism, as applicable, and (b) otherwise adhered to sound ratemaking concepts and principles. The procedures I and other members of the Public Staff's Accounting Division acting under my supervision utilized included a review of the Company's filing, relevant prior Commission proceedings and orders, and workpapers and source documentation used by the Company to develop the proposed billing rates. Performing the investigation required the review of responses to written data requests, as well as discussions with Company personnel. As part of its investigation, the Accounting Division performed a review of the actual DSM/EE program costs incurred by DEP during the 12-month period ended December 31, 2021. To accomplish this, the Accounting Division selected and reviewed samples of source documentation for test year costs included by the Company for recovery through the DSM/EE Rider. Review of this sample is intended to test whether the actual costs included by the Company in the DSM and EE billing rates are either valid costs of approved DSM and EE programs or administrative costs supporting those programs.

The investigation, including the sampling of source documentation, concentrated primarily on costs and incentives related to the January through December 2021 test period, which will begin to be trued up through the DSM and EE EMF billing rates approved in this proceeding. The Public Staff also performed a more general review of the prospective billing rates proposed to be charged for Vintage Year 2023, which are subject to true-up in future proceedings.

Q. BESIDES REVIEW OF THE PROPOSED RMAF LANGUAGE, WHAT OTHER IMPACTS DOES THE TESTIMONY OF PUBLIC STAFF WITNESS WILLIAMSON HAVE ON YOUR CONCLUSIONS REGARDING THE COMPANY'S RIDER APPLICATION IN THIS PROCEEDING?

A. Witness Williamson has also filed testimony in this proceeding discussing several other topics related to the Company's filing. None of the matters discussed by Mr. Williamson necessitate an adjustment in this proceeding to the Company's billing factor calculations, although some of them may affect the determination of the factors in future proceedings.

Q. WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING?

A. Based on the results of the Public Staff's investigation, I recommend that the billing factors proposed by the Company, as set forth in Listebarger Exhibit 1 Revised, be approved by the Commission. These factors should be approved subject to any true-ups in future cost recovery proceedings consistent with the 2017 and 2020 Mechanisms and the Commission Orders with which they are associated, as well as other relevant orders of the Commission, including the Commission's final order in this proceeding.

In making this recommendation, the Public Staff notes that reviewing the calculation of the DSM/EE rider is a process that involves reviewing numerous assumptions, inputs, and calculations, and that its recommendation regarding this proposed rider should not preclude the Public Staff from taking issue in future proceedings with the same or similar assumptions, inputs, and calculations.

Q. DOES THE PUBLIC STAFF HAVE ANY ADDITIONAL COMMENTS?

A. As stated in Public Staff witness Shawn L. Dorgan's testimony in Duke Energy Carolinas, LLC's 2022 DSM/EE rider proceeding in Docket No. E-7, Sub 1265, the Public Staff intends to undertake a review of DSM/EE advertising and promotion costs, including their relationship to incentives directly or indirectly provided to DSM/EE program participants in order to determine the steps the Company regularly takes to right-size its DSM/EE advertising costs and whether additional steps can be taken.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

QUALIFICATIONS AND EXPERIENCE

MICHELLE M. BOSWELL

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

As Director of the Accounting Division of the Public Staff, I am responsible for the performance, supervision, and management of the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties under the jurisdiction of the Commission or involved in Commission proceedings; and (2) the preparation and presentation to the Commission of testimony, exhibits, and other documents in those proceedings. I have been employed by the Public Staff since September 2000.

I have performed numerous audits and/or presented testimony and exhibits before the Commission regarding a wide range of electric, natural gas, and water topics. I have performed audits and/or presented testimony in DEC's 2010, 2015, 2017, 2019, and 2020 REPS Cost Recovery Rider proceedings; DEP's 2014, 2015, 2017, 2018, and 2019 REPS Cost Recovery Rider proceedings; the 2014 REPS Cost Recovery Rider proceeding for Dominion North Carolina Power (DNCP); the 2008 REPS Compliance Reports for North Carolina Municipal Power Agency 1, North Carolina Eastern Municipal Power Agency, GreenCo Solutions, Inc., and EnergyUnited Electric Membership Corporation; four recent Piedmont Natural Gas (Piedmont) rate cases; the 2016 rate case of Public Service Company of North Carolina (PSNC); the 2012 and 2019 rate case for Dominion Energy North Carolina (DENC, formerly Dominion North Carolina Power); the 2013, 2017, and 2019 DEP rate cases; the 2017 and 2019 DEC rate cases; the 2018 fuel rider for DENC; several Piedmont, NUI Utilities, Inc. (NUI), and Toccoa annual gas cost reviews; the merger of Piedmont and NUI; and the merger of Piedmont and North Carolina Natural Gas (NCNG).

COST RECOVERY AND INCENTIVE MECHANISM OF DUKE ENERGY PROGRESS, LLC, FOR DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS

(Docket No. E-2, Sub 931, as Modified by the Commission, to be Effective January 1, 2022)

Definitions

1. *Common costs* are administrative and general, or other, costs that are not attributable or directly assignable to specific demand-side management (DSM) or energy efficiency (EE) Programs but are necessary to design, implement, and operate the Programs collectively.

2. *Costs* include program costs (including those of pilot programs approved by the Commission for inclusion in the Mechanism), common costs, and, subject to Rule R8-69(b), any other costs approved by the Commission for inclusion in the Mechanism. Costs include only those expenditures appropriately allocable to the North Carolina retail jurisdiction.

3. *Incremental Program Costs* are utility-incurred costs directly attributable and expended solely for a specific DSM or EE Program, and include all appropriate capital costs (cost of capital, depreciation expenses, property taxes, and other associated costs found reasonable by the Commission), implementation

costs, incentive payments to Program participants, other operations and maintenance costs, EM&V costs, and administrative and general costs incurred specifically for the Program, net of any grants, tax credits, or other reductions in cost received by the utility from outside parties and specifically related to the Program.

4. Low-Income Programs or Low-Income Measures are DSM or EE Programs or DSM or EE Measures approved by the Commission to be provided specifically to low-income customers.

5. *Measure* means, with respect to EE, an "energy efficiency measure," as defined in N.C. Gen. Stat. § 62-133.8(a)(4), that is new within the meaning of N.C. Gen. Stat. § 62-133.9(a); and, with respect to DSM, an activity, initiative, or Program change, that is new under N.C. Gen. Stat. § 62- 133.9(a) and satisfies the definition of “demand-side management” as set forth in N.C. Gen. Stat. § 62-133.8(a)(2).

6. *Measurement unit* means the basic unit that is used to measure and track the (a) incurred costs; (b) Net Lost Revenues; and (c) kilowatt (kW), kilowatt-hour (kWh), and dollar savings, net of Net-to-gross (NTG) effects for DSM or EE Measures installed in each Vintage Year. A Measurement Unit may consist of an individual Measure or bundle of Measures. Measurement units shall be requested by Duke Energy Progress (DEP) and established by the Commission for each Program in the Program approval process, and shall be subject to modification by

the Commission when appropriate. If Measurement Units have not been established for a particular Program, the Measurement Units for that Program shall be the individual Measures, unless the Commission determines otherwise.

7. *Measurement unit's life* means the estimated number of years that equipment or customer treatment associated with a Measurement Unit will operate if properly maintained, or activities (services or customer behavior) associated with the Measurement Unit will continue to be cost-effective, and produce energy (kWh) or peak demand (kW) savings, unless the Commission determines otherwise.

8. *Net Found Revenues* means any increases in revenues resulting from any activity by DEP's public utility operations that causes a customer to increase demand or energy consumption, whether or not that activity has been approved pursuant to Commission Rule R8-68. The dollar value of Net Found Revenues will be determined in a manner consistent with the determination of the dollar value of NLR provided in Paragraph No. 9 below. In determining which activities produce Net Found Revenues, the “Decision Tree” attached to this Mechanism as Attachment C will be applied. Net Found Revenues may be reduced, if such reduction is approved as reasonable and appropriate by the Commission, by a decrease in revenues resulting from an activity by DEP's public utility operations that causes a customer to reduce demand or energy consumption (negative found revenues). To be approved, it must be demonstrated that the activity producing the negative found revenues reduces the profitability of the Company. Additionally, the total amount of Net Found Revenues for a given

vintage year will not be reduced to a level below zero by the inclusion of negative found revenues.

9. *Net Lost Revenues (NLR)* means DEP's revenue losses due to new DSM or EE Measures, net of fuel costs and non-fuel variable operating and maintenance expenses avoided at the time of the kilowatt-hour sale(s) lost due to the DSM or EE Measures10, or in the case of purchased power, in the applicable billing period incurred by DEP public utility operations as the result of a new DSM or EE Measure. PPIs shall not be considered in the calculation of NLR or NLR recovery.

10. *Net-to-gross (NTG) factor* means an adjustment factor used to compute the net kW/kWh savings by accounting for behavioral effects, including, but not limited to, free ridership, moral hazard, free drivers, and spillover.

11. *Portfolio Performance Incentive (PPI)* means a utility incentive payment to DEP as a bonus or reward for adopting and implementing new (as defined in N.C. Gen. Stat. § 62-133.9(a)) EE or DSM Measures and/or Programs. The PPI is based on the sharing of avoided cost savings, net of Program Costs, achieved by those DSM and EE Programs in the aggregate. Such Program Costs will be adjusted as discussed elsewhere in this Mechanism. The PPI is also subject to certain limitations as further set forth in this Mechanism. PPI excludes NLR.

12. *Program Return Incentive (PRI)* means a utility incentive payment to DEP for adopting and implementing programs that fail to pass the Utility Cost Test,

but are approved by the Commission due to the societal benefit they provide, such as low income programs. For these types of programs, the PRI will be based on a percentage of the NPV of the avoided costs savings achieved by those DSM and EE Programs. The PRI is subject to certain additional factors and limitations, as further set forth in this Mechanism.

13. *Program* means one or more new DSM or EE Measures with similar objectives that have been consolidated for purposes of delivery, administration, and cost recovery, and that have been adopted on or after January 1, 2007, including subsequent changes and modifications.

14. *Program costs* are costs that are directly attributable or reasonably and appropriately allocable to specific DSM or EE Programs or groups of Programs (for purposes of setting the DSM/EE and DSM/EE EMF riders), and include all appropriate and reasonable Incremental Program Costs, and reasonably assigned or allocated administrative and general expenses and other Common Costs, net of any reasonably assigned or allocated grants, tax credits, Program Cost adjustments as discussed elsewhere in this Mechanism, or other reductions in cost received by the utility from outside parties.

15. *Total Resource Cost* (TRC) *test* means a cost-effectiveness test that measures the net costs of a DSM or EE Program or portfolio as a resource option based on the incremental costs of the Program or portfolio, including both the participants' costs and the utility's costs (excluding incentives paid by the utility to

or on behalf of participants). The benefits for the TRC test are the avoided supply costs (i.e., the reduction in generation capacity costs, transmission and distribution capacity costs, and energy costs caused by a load reduction), valued at marginal cost for the periods when there is a load reduction. The avoided supply costs shall be calculated using net Program or portfolio savings (i.e., savings net of reductions in energy use (NTG impacts) that would have happened even in the absence of the Program). Non-Energy benefits as approved for use by the Commission may be considered in the determination of TRC results. The costs for the TRC test are the incremental net Program or portfolio costs incurred by the utility and participants, plus the increased supply costs for any periods in which load is increased. All costs of equipment, installation, operation and maintenance (O&M), removal (less salvage value), and administration, no matter who pays for them, are included in this test. However, Common Costs shall not be included in a Program-level TRC test used for program approval purposes, but shall be included in a portfolio-level TRC test. Any grants, tax credits, or other reductions in cost received by the utility or participants from outside parties and specifically related to the Program or portfolio, as applicable, are considered a reduction to costs in this test.

16. *Utility Cost Test* (UCT) means a cost-effectiveness test that measures the net costs of a DSM or EE Program or portfolio as a resource option based on the incremental costs incurred by the utility (including incentive costs paid by the utility to or on behalf of participants) and excluding any net costs

incurred by the participants. The benefits for the UCT are the avoided supply costs (i.e., the reduction in generation capacity costs, transmission and distribution capacity costs, and energy costs caused by a load reduction), valued at marginal cost for the periods when there is a load reduction. The avoided supply costs shall be calculated using net Program or portfolio savings (i.e., savings net of reductions in energy use (NTG impacts) that would have happened even in the absence of the Program or portfolio). The costs for the UCT are the net Program or portfolio Costs incurred by the utility and the increased supply costs for any period in which load is increased. Utility costs include initial and annual costs, such as the cost of utility equipment, O&M, installation, Program or portfolio administration, incentives paid to or on behalf of participants, and participant dropout and removal of equipment (less salvage value). However, Common Costs shall not be included in a Program-level UCT test used for program approval purposes, but shall be included in a portfolio-level UCT test. Any grants, tax credits, or other reductions in cost received by the utility from outside parties and specifically related to the Program are considered a reduction to costs in this test.

17. *Vintage year* means an identified 12-month period in which a specific DSM or EE Measure is installed for an individual participant or group of participants.

Application for Approval of Programs

18. In evaluating potential DSM/EE Measures and Programs for selection and implementation, DEP will first perform a qualitative measure screening to ensure Measures are:

(a) Commercially available and sufficiently mature;

(b) Applicable to the DEP service area demographics and climate; and

(c) Feasible for a utility DSM/EE program.

19. DEP will then further screen EE and DSM Measures for cost-effectiveness. For purposes of this screening, estimated incremental EM&V costs attributable to the Measures shall be included in the Measures' costs. With the exception of Measures included in a Low-Income Program, or other Program in which PPI incentives are not requested that may potentially be filed with the Commission for approval, an EE or DSM Measure with a UCT result less than 1.0 will not be considered further, unless the Measure can be bundled into an EE or DSM Program to enhance the overall costeffectiveness of that Program. Measures under consideration for bundling, whether as part of a new Program or into an existing Program, should, unless otherwise approved by the Commission, be consistent with and related to the measure technologies, and/or delivery channels currently offered in the existing Program or to be otherwise offered in the new Program. Consistent with DEP's agreement with Piedmont Natural Gas and Public

Service Company of NC, with the exception of Low- Income Programs, all EE and DSM Measures associated with an end-use that can be served by natural gas must pass the UCT.

20. With the exception of Low-Income Programs or other programs explicitly identified at the time of the application for their approval, all Programs submitted for approval will have a Program-level UCT result greater than 1.00. Additionally, for purposes of calculating cost-effectiveness for program approval, consistent with the Commission's Orders in Docket Nos. E-2, Sub 1145 and E-2, Sub 1174, the Company shall use projected avoided capacity and energy benefits specifically calculated for the program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities as of the date of the filing for the new program approval. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility. For purposes of determining cost-effectiveness, estimated incremental EM&V costs attributable to each Program shall be included in the Program costs. DEP will comply, however, with Commission Rule R8- 60(i)(6)(iii), which requires DEP to include in its biennial

Integrated Resource Plan, revised as applicable in its annual report, certain information regarding the Measures and Programs that it evaluated but rejected.

20A. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility. For purposes of determining cost-effectiveness, estimated incremental EM&V costs attributable to each program shall be included in program costs. Duke Energy Carolinas will comply, however, with Rule R8-60(i)(6)(iii), which requires that Duke Energy Carolinas' biennial Integrated Resource Plan, revised as applicable in its annual report, include certain information regarding the measures and programs that it evaluated but rejected.

20B. Moreover, for the Calculation of the underlying avoided capacity benefits, when authorized pursuant to Commission Rule R8-69(c) and unless the Commission determines otherwise in a G.S. 62-133.9 DSM/EE Rider proceeding, the Company shall be permitted to recognize the impact of the Reserve Margin Adjustment Factor used in the determination of the PPI and PRI values for its energy efficiency programs.

The Reserve Margin Adjustment Factor is equivalent to (1 + Reserve Margin) / (Performance Adjustment Factor) and will be applied to the avoided capacity costs of all energy efficiency programs.

The Reserve Margin employed shall be based upon the value reflected in the most recent Commission accepted Integrated Resource Plan proceeding as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. The Performance Adjustment Factor employed shall be based upon value reflected in the most recent Commission approved Biennial Avoided Cost proceeding as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing.

21. If a Program fails the economic screening in Paragraph 19 above, DEP will determine if certain Measures can be removed from the Program to satisfy the criteria established in Paragraph 19.

22. DEP will provide its Stakeholder Collaborative with information relating to Programs and Measures either currently being considered or planned for future consideration. DEP will also seek suggestions from its Collaborative for additional Programs and Measures for its future consideration.

23. Nothing in this Mechanism relieves DEP from its obligation to comply with Commission Rule R8-68 when filing for approval of DSM or EE Measures or Programs. As specifically required by Commission Rule R8-68(c)(3)(iii), DEP shall, in its filings for approval of Measures and Programs, describe the industry-accepted methods to be used to collect and analyze data; measure and analyze Program participation; and evaluate, measure, verify, and validate the energy and peak demand savings. In its filings, DEP shall also provide a schedule for reporting

the results of this EM&V process to the Commission. The EM&V process description should describe not only the methodologies used to produce the impact estimates utilized, but also any methodologies the Company considered and rejected. Additionally, where known, DEP shall identify the independent third party it plans to use for purposes of EM&V, and include an estimate of all third-party costs in its filing. If not known at the time of filing for approval, the information shall be provided at the time of DEP's next annual rider filing.

Program Management

24. In each annual DSM/EE cost recovery filing, DEP shall (a) perform prospective cost-effectiveness test evaluations for each of its approved DSM and EE Programs, (b) perform prospective aggregated portfolio-level cost-effectiveness test evaluations for its approved DSM/EE Programs (including any assigned or allocated administrative and general or other common costs), and (c) include these prospective cost-effectiveness test results in its DSM/EE rider application.

24A. Consistent with the Commission's Orders in Docket Nos. E-2, Sub 1145 and E-2, Sub 1174, for purposes of calculating prospective cost-effectiveness in each DSM/EE rider proceeding to be used to determine whether a program should remain in the portfolio, the Company shall assess each program by:

(a) Using projected avoided capacity and energy benefits specifically calculated for each program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility; and,

(b) Evaluating each cost-effectiveness test using projections of participation, savings, costs, and benefits for the upcoming vintage year.

24B. The parties acknowledge that prospective cost-effectiveness evaluations are snapshots of the program's performance, and that ongoing cost-effectiveness is impacted by many factors outside the Company's control, including but not limited to market and economic conditions, avoided costs, and government mandates. The parties shall continue to work to maintain the cost-effectiveness of its portfolio and individual programs. However, for any program that initially demonstrates a UCT, determined pursuant to Paragraph 24A above of less than 1.00, the Company shall include a discussion in its annual DSM/EE rider proceeding of the actions being taken to maintain or improve cost-effectiveness, or alternatively, its plans to terminate the program.

24C. For programs that demonstrate a prospective UCT, determined pursuant to Paragraph 24A above, of less than 1.00 in a second DSM/EE rider proceeding, the Company shall include a discussion of what actions it has taken to improve cost-effectiveness. Fluctuations of UCT above and below 1.0 should be addressed on a case by case basis.

24D. For programs that demonstrate a prospective UCT, determined pursuant to Paragraph 24A above, of less than 1.00 in a third DSM/EE rider proceeding, the Company shall terminate the program effective at the end of the year following the DSM/EE rider order, unless otherwise ordered by the Commission. However, any party may propose termination of a program prior to a third DSM/EE rider proceeding if earlier information indicates that cost-effectiveness is not likely to reach 1.0 or greater under the UCT test.

25. DEP will seek to leverage available state and federal funds to operate effective efficiency Programs. Its application for such funds will be transparent with respect to the cost, operation, and profitability of Programs operated with those funds in a manner consistent with its authorized revenue recovery mechanism. Use of such funds helps offset the participant's project costs and is supplemental to DEP's incentives to participants. As such, these funds will not change the impacts or Program- or portfolio-level cost-effectiveness of DEP's

Programs as calculated using the UCT. Further, the amount of avoided costs recognized by the Company will not be reduced if participants also use state or federal funds to offset any portion of their project costs.

Program Modifications

25A. Modifications to Commission approved DSM/EE Programs will be considered as provided for in Attachment A to this Mechanism.

25B. Modifications filed with the Commission for approval will be evaluated under the same guidelines and parameters used in DEP's most recently filed DSM/EE rider proceeding.

Stakeholder Collaborative

26. DEP will conduct periodic collaborative stakeholder meetings for the purpose of collaborating on new Program ideas, reviewing modifications to existing Programs, ensuring an accurate public understanding of the Programs and funding, reviewing the EM&V process, giving periodic status reports on Program performance, helping to set EM&V priorities, providing recommendations toward DEP's submission of applications to revise or extend Programs and rate structures, and guiding efforts to expand costeffective Programs for low-income customers. A third party may facilitate the discussions.

27. The Carolinas EE Collaborative is an advisory group made up of interested stakeholders from across North and South Carolina representing a wide

array of customer groups and interests related to energy efficiency and demand response. The Collaborative should serve as an open forum for the sharing of information and discussion of topics related to energy efficiency including program design and development, program evaluation, regulatory and other market conditions that will impact program performance, specific issues or topics as requested by the North and South Carolina Utilities Commissions in orders regarding DSM and EE matters, and other topics or issues to achieve the most demand and energy savings possible. A third party may facilitate the discussions. The collaborative will continue to determine its own rules of operation, including the process for setting the agendas and activities of the group, consistent with these terms. Members agree to participate in the advisory group in good faith consistent with mutually-agreed upon rules of participation. Meetings are open to additional parties who agree to the participation rules.

28. DEP will provide information related to the development of EE and DSM to stakeholders in a transparent manner. The Company agrees to disclose Program-related data at a level of detail similar to that which it has disclosed in other states or as disclosed by other regulated utilities in the Carolinas. The Company will share all aspects of the development and evaluation of Programs, including the EM&V process.

29. At its discretion, the Company may require confidentiality agreements with members who wish to review confidential data or any calculations that could be used to determine the data. Disclosure of this data would harm DEP

competitively and could result in financial harm to its customers. Participation in the advisory group shall not preclude any party from participating in any Commission proceedings.

Distribution System Demand Response (DSDR) Program

30. The DSDR Program is an EE Program defined as “new” pursuant to N.C. Gen. Stat. § 62-133.8 and N.C. Gen. Stat. § 62-133.9, and is eligible for recovery of reasonable and prudent costs, as well as NLR, subject to the terms and conditions of NLR set forth herein. The DSDR Program is not eligible for recovery of a PPI.

31. The rate of return on investment used to determine the DSDR Program capital-related costs included in each annual rider will be based on the then-current capital structure, embedded cost of preferred stock, and embedded cost of debt of the Company (net of appropriate income taxes), and the cost of common equity approved in the Company's then most recent general rate case.

Evaluation, Measurement and Verification

32. The EM&V of Programs will be conducted using a nationally recognized protocol to ensure that Programs remain cost-effective. Except for DEP’s DSDR Program, EM&V of Programs will be conducted by an independent third-party. EM&V of the DSDR Program will be conducted by DEP. EM&V protocol

may be modified with approval of the Commission to reflect the evolution of best practices.

33. EM&V will be applied in accordance with the provisions of Attachment B to this Mechanism.

34. EM&V will also include updates of any NTG factors related to previous NTG estimates for Programs and Measures. All of the updated information will be used in evaluating the continued cost-effectiveness of existing Programs and portfolio. Updates to NTG estimates will be applied consistent with the application of EM&V results pursuant to Attachment B to this Mechanism, but updates to NTG estimates will not be applied retrospectively to Measures that have already been installed or Programs that have already been completed. If it becomes apparent during the implementation of a Program that NTG factors are substantially different than anticipated, the Company will file appropriate Program adjustments with the Commission.

Opt-Out Eligibility Requirement for Industrial Customers and Certain Commercial Customers

35. Commercial customers with annual consumption of 1,000,000 kWh or greater in the billing months of the prior calendar year and all industrial customers that implement or will implement alternative DSM/EE Measures may, consistent with Commission Rule R8-69(d), elect to not participate in any utility-offered DSM/EE Measures and, after written notification to the utility, will not be

subject to the DSM/EE rider and DSM/EE EMF rider. For purposes of application of this option, a customer is defined to be a metered account billed under a single application of a Company rate tariff. For commercial accounts, once one account meets the opt-out eligibility requirement, all other accounts billed to the same entity with lesser annual usage located on the same or contiguous properties are also eligible to optout of the DSM/EE rider and DSM/EE EMF rider. Since these rates are included in the rate tariff charges, customers electing this option shall receive a DSM and/or EE credit on their monthly bill statement.

36. Opt-out eligible customers that have received DSM/EE Program incentives will be subject to the applicable DSM/EE rider and DSM/EE EMF rider billings for a period of no less than 36 months.

37. Eligible non-residential customers may opt out of either or both of the DSM and EE categories of Programs as well as opt back into either or both. If a customer receives Program incentives from a Company DSM or EE Program, that customer must opt-in for a period of no less than 36 months. A customer receiving Program incentives from a DSM Program will be required to pay the DSM portion of the DSM/EE Rider for a period of not less than 36 months. A customer receiving Program incentives from an EE Program will be required to pay the EE portion of the DSM/EE Rider for a period of not less than 36 months.

38. In cases when the DSM rate element of Rider DSM/EE is a credit, any opt-out eligible customer who wishes to opt-in to the DSM portion of the Rider,

without participating in a DSM program, will be required to remain opted into the DSM portion of the Rider for the same number of months that they received a bill credit following the last month in which they received a DSM bill credit from the Rider.

39. In cases when the EE rate element of Rider DSM/EE is a credit, any opt-out eligible customer who wishes to opt-in to the EE portion of the Rider, without participating in a EE program, will be required to remain opted into the EE portion of the Rider for the same number of months that they received a bill credit following the last month in which they received a EE bill credit from the Rider.

Procedural Matters and General Structure of Riders

40. The rate period for each proposed DSM/EE Rider will be the next upcoming calendar year at the time of the filing of DEP's annual DSM/EE rider application. The test period used in the development of the DSM/EE EMF Rider will be the most recently concluded calendar year at the time of filing of the application.

41. For purposes of measuring the cost-effectiveness of Programs and for calculation of the PPI and PRI, a Vintage Year will be equivalent to a calendar year.

42. The annual filing date of DEP's DSM/EE rider application, supporting testimony, and exhibits will be no later than 98 days prior to the hearing date

prescribed by Commission Rule (currently the first Tuesday of June of each calendar year). Should the Company become aware prior to filing of a determined or possible change in the hearing date, the Company shall strive to file its application and associated documents no later than 98 days prior to the changed hearing date.

43. DEP shall not request that the annual hearing to consider the proposed DSM/EE and DSM/EE EMF riders be held sooner than 98 days after the filing date of the Company's application, supporting testimony, and Exhibits.

44. All DSM/EE and DSM/EE EMF riders shall be calculated and charged to customers based on the annual revenue requirements associated with DSM and EE Programs. Separate DSM/EE and DSM/EE EMF riders shall be calculated for the Residential customer class, the Non-Residential customer classes, and the Lighting class.

45. One integrated (prospective) DSM/EE rider and one integrated DSM/EE EMF rider shall be calculated for the Residential class and the Residential portion of the Lighting class, respectively, to be effective each rate period. The integrated Residential and Lighting class DSM/EE EMF riders shall include all true-ups for each Vintage Year appropriately considered in each proceeding.

46. Separate DSM and EE billing factors will be available to Non-Residential opt-out-eligible customers. Additionally, the Non-Residential DSM and EE rates and the DSM and EE EMF billing factors will be appropriately considered

in each proceeding, so that the factors can be appropriately charged to Non-Residential opt-out eligible customers.

47. For purposes of normalizing or forecasting kWh sales for its annual DSM/EE and DSM/EE EMF rider filing, DEP shall calculate customer growth, weather normalization, and other applicable adjustments on the basis of the test period and/or rate period for each annual filing, as applicable.

Allocation Methodologies

48. Unless the Commission determines otherwise in a N.C. Gen. Stat. § 62-133.9 DSM/EE rider (or other) proceeding:

(a) The Program Costs of an approved DSM or EE Program will be allocated to the North Carolina and South Carolina retail jurisdictions and will only be recovered from those customer classes to which the Program is targeted.

(b) No Program Costs of any approved DSM or EE Program will be allocated to the wholesale jurisdiction.

(c) For EE Programs, the costs of each Program will be allocated based on the annual energy requirements of North Carolina and South Carolina retail customers (at the generator), as reflected in the annual cost of service studies.

(d) For DSM Programs, the aggregated costs of DSM Programs will be allocated based on the annual summer coincident peak demand of North Carolina and South Carolina retail customers, as reflected in the annual cost of service studies.

(e) The allocation factors and inputs used to allocate the estimated rate period costs of DSM and EE Programs shall be those drawn from the most recently filed cost of service study at the time the annual cost recovery filing is made. The allocations of costs shall be trued up at the time that finalized and trued-up costs for a given test period are initially passed through the DSM/EE EMF, using the most recently filed cost of service study at the time the filing is made (but for no later year than the period being trued up). For subsequent true-ups of that period, the cost of service study used will be the same as that used for the initial true-up. (f) For purposes of recovery through the DSM/EE and DSM/EE EMF riders, the Company's North Carolina retail jurisdictional costs for approved DSM and EE Programs and Measures shall be assigned or allocated to North Carolina retail customer classes by directly assigning the North Carolina retail jurisdictional costs to the customer group to which the Program is offered. For the DSDR Program, North Carolina retail jurisdictional amounts shall be allocated to customer classes on the basis of the energy requirements of each class, drawn from the most recently filed cost of service study at the time the annual cost recovery filing is made (adjusted to exclude the energy requirements of opted-out customers). The process of estimating and truing up the class assignments and allocations will be the same as practiced for jurisdictional allocations.

Cost Recovery

49. In general, as provided in Commission Rule R8-69 and N.C. Gen. Stat. § 62-133.9(d), but subject to the specific provisions and/or modifications

contained elsewhere in this Mechanism, DEP shall be allowed to recover, through the DSM/EE rider, all reasonable and prudent Program Costs reasonably and appropriately estimated to be incurred in expenses, during the current rate period, for DSM and EE Programs that have been approved by the Commission under Rule R8-68. As permitted by N.C. Gen. Stat. § 62-133.9(d), but subject to the specific provisions and/or modifications contained elsewhere in this Mechanism, any of the Stipulating Parties may propose a procedure for the deferral and amortization in future DSM/EE riders of all or a portion of DEP's reasonable and prudent O&M Program Costs to the extent those costs are intended to produce future benefits.

50. Unless the Commission determines otherwise, and subject to the specific provisions and/or modifications contained elsewhere in this Mechanism, DEP shall be allowed to amortize any O&M costs incurred through Vintage Year 2020 deferred pursuant to Paragraph 49 of this Mechanism over a period of time not to exceed 10 years.

51. Beginning with Vintage (calendar) Year 2016, and extending through Vintage Year 2020 (as reflected in its 2019 Rider filing), DEP may recover, subject to approval by the Commission in the annual DSM/EE rider proceedings, Program Costs incurred, without deferral for amortization in future DSM/EE riders, even if Program Costs incurred for the same Program in prior years have been deferred and amortized.

52. With regard to O&M Program Costs incurred prior to January 1, 2016, said costs will be recovered using the amortization rates existing at December 31, 2015, until such time that those deferred costs are recovered, in their entirety, through the DSM/EE cost recovery clause, unless the Parties recommend, and the Commission approves, a different treatment.

53. O&M Program Costs incurred in Vintage Year 2021 will be recovered utilizing the same amortization periods as utilized for Vintage Year 2020 Costs for the same Program, unless otherwise approved by the Commission.

54. Beginning with Vintage Year 2022, unless otherwise ordered by the Commission pursuant to its own motion or at the request of another party, and extending through a Vintage Year as identified in a future Mechanism review, DEP may recover all Program Costs previously recovered through amortization periods exceeding three years over amortization periods of no less than three years.

55. With regard to O&M Program Costs incurred on and subsequent to January 1, 2016 but prior to January 1, 2022, said costs will be recovered using the amortization rates existing at December 31, 2021, until such time that those deferred costs are recovered, in their entirety, through the DSM/EE cost recovery clause, unless the Parties recommend, and the Commission approves, a different treatment.

56. In the next Mechanism review, the parties shall consider whether or not to allow the minimum three-year amortization period designated in Paragraph

54 above to be further reduced, taking into consideration the impact upon customer rates, as well as other relevant factors.

57. Pursuant to Commission Rule R8-69(b)(6), except for administrative and general expenses (addressed in Paragraph No. 58 below), DEP shall be allowed to earn a rate of return at the overall weighted average net-of-tax rate of return approved in DEP's most recent general rate case on all such unamortized deferred costs (net of income taxes). The return so calculated will be adjusted in any rider calculation to reflect necessary recoveries of income taxes. Pursuant to Commission Rule R8-69(c)(3), the Company is not allowed to accrue a return on NLR or the PPI.

58. To the extent DEP chooses to defer and amortize in future DSM/EE riders the Program Costs for a Program pursuant to Paragraph No. 54 above, nonincremental administrative and general costs reasonably assigned or allocated to, but not directly related to, that Program will be deferred and amortized over a period not to exceed three years, unless the Commission determines otherwise. Pursuant to Commission Rule R8-69(b)(6), DEP shall be allowed to earn a rate of return at the overall weighted average netof-tax rate of return approved in DEP's most recent general rate case on all such unamortized deferred administrative and general costs (net of income taxes). The return so calculated will be adjusted in any rider calculation to reflect necessary recoveries of income taxes. However, irrespective of the prospective treatment of Program Costs in calendar year 2016 or afterwards, previously deferred administrative and general costs will be

recovered using existing amortization rates, until such time that those deferred costs are recovered, in their entirety, through the DSM/EE cost recovery clause, unless the parties recommend, and the Commission approves, a different treatment.

59. The DSM/EE EMF rider shall reflect the difference between the reasonable and prudent Program Costs incurred or amortized during the applicable test period (Vintage Year) and the revenues actually realized during such test period under the DSM/EE rider then in effect.

60. For Program Costs not deferred for amortization in future DSM/EE riders, the accrual of a return on any under-recoveries or over-recoveries of cost will follow the requirements of Commission Rule R8-69(b), subparagraphs (3) and (6), unless the Commission determines otherwise.

61. The cost and expense information filed by DEP pursuant to Commission Rules R8-68(c) and R8-69(f) shall be categorized by Measurement Unit or Program, as applicable, and period, consistent with the presentation included in the Company's application.

Net Lost Revenues (NLR)

62. When authorized pursuant to Commission Rule R8-69(c) and unless the Commission determines otherwise, DEP shall be permitted to recover, through the DSM/EE and DSM/EE EMF riders, NLR associated with the implementation of

approved DSM and EE Measurement Units or Programs, subject to the restrictions set out below.

63. The North Carolina retail kWh sales reductions that result from an approved measurement unit installed in a given Vintage Year shall be eligible for use in calculating NLR eligible for recovery only for the first 36 months after the installation of the Measurement Unit. Thereafter, such kWh sales reductions will not be eligible for calculating recoverable NLR for that or any other Vintage Year.

64. Programs or Measures with the primary purpose of promoting general awareness and education of EE and DSM activities, as well as research and development activities, are ineligible for the recovery of NLR.

65. In order to recover estimated NLR associated with a Pilot Program or Measure, DEP must, in its application for program or measure approval, demonstrate (a) that the program or measure is of a type that is intended to be developed into a full-scale, Commission-approved program or measure, and (b) that it will implement an EM&V plan based on industry-accepted protocols for the program or measure. No pilot program or measure will be eligible for NLR recovery upon true-up unless it (a) is ultimately proven to have been cost-effective, and (b) is developed into a full-scale, commercialized program.

66. Notwithstanding the allowance of 36 months' NLR associated with eligible kWh sales reductions, the kWh sales reductions that result from measurement units installed shall cease being eligible for use in calculating NLR

as of the effective date of (a) a Commission-approved alternative recovery mechanism that accounts for the eligible NLR associated with eligible kWh sales reductions, or (b) the implementation of new rates approved by the Commission in a general rate case or comparable proceeding to the extent the rates set in the general rate case or comparable proceeding are set to explicitly or implicitly recover the NLR associated with those kWh sales reductions.

67. Recoverable NLR shall be calculated in a manner that appropriately reflects the incremental revenue losses suffered by the Company, net of avoided fuel and non-fuel variable O&M expenses.

68. Overall recoverable NLR as measured for the 36-month period identified in Paragraph 63 above shall be reduced by any increases in Net Found Revenues during the same periods (offset by any negative found revenues found appropriate and reasonable by the Commission pursuant to the provisions of paragraph 8 of this Mechanism and other factors deemed applicable by the Commission). The “decision tree” adopted by Order in Docket No. E-2, Sub 931, on January 20, 2015, should be applied for determining what constitutes Net Found Revenues. DEP shall closely monitor its utility activities to determine if they are causing a customer to increase demand or consumption, and shall identify and track all such activities with the aid of the “decision tree,” so that they may be evaluated by intervening parties and the Commission as potential Net Found Revenues. Net Found Revenues shall be calculated in an appropriate and reasonable manner that mirrors the calculation used to determine NLR.

69. Recoverable NLR shall ultimately be based on kWh sales reductions and kW savings verified by the EM&V process and approved by the Commission. Recoverable NLR shall be estimated and trued-up, on a Vintage Year basis, in the following manner:

(a) As part of the DSM/EE rider approved in each annual cost and incentive recovery proceeding, DEP shall be allowed to recover the appropriate and reasonable level of recoverable NLR associated with each applicable program and Vintage Year (subject to the limitations set forth in this Mechanism), estimated to be experienced during the rate period for which the DSM/EE rider is being set.

(b) NLR related to any given program/measure and Vintage Year shall be trued-up through the DSM/EE EMF rider in subsequent annual cost and incentive recovery proceedings based on the Commissionapproved results of the appropriate EM&V studies related to the program/measure and Vintage Year. The true-up shall be based on verified savings and shall be applied to prospective and past time periods in accordance with the Evaluation, Measurement, and Verification section of this Mechanism.

(c) The true-up shall be calculated based on the difference between projected and actual recoverable NLR for each Program and period under consideration, accounting for any differences derived from the completed and reviewed EM&V studies, including: (1) the projected and actual number of installations per Measurement Unit; (2) the projected and actual net kilowatt-hour (kWh) and kilowatt (kW) savings per installation; (3) the projected and actual gross lost revenues per kWh and kW saved; and (4) the projected and actual deductions from gross lost revenues per kWh and kW saved.

(d) The reduction in NLR due to Net Found Revenues (offset by any approved and applicable negative found revenues) shall be trued up in a manner consistent with the true-up of NLR.

(e) The combined total of all Vintage Year true-ups calculated in a given year's Commission Rule R8-69 proceeding shall be incorporated into the appropriate DSM/EE EMF billing factor.

Portfolio Performance Incentive (PPI) and Program Return Incentive (PRI)

70. When authorized pursuant to Commission Rule R8-69(c), DEP shall be allowed to collect a PPI and PRI, as each is applicable, for its DSM/EE portfolio for each Vintage Year, separable into Residential, Lighting, Non-Residential DSM, Non-Residential EE categories. The PPI and PRI, as applicable, shall be subject to the restrictions set out below.

71. Programs, Measures, and activities undertaken by DEP with the primary purpose of promoting general awareness of and education about EE and DSM activities, as well as research and development activities, that are not directly associated with a Commission approved EE or DSM Program, are ineligible to be included in the portfolio for purposes of the PPI or PRI calculations.

72. Unless (a) the Commission approves DEP's specific request that a pilot program or measure be eligible for PPI or PRI inclusion when DEP seeks approval of that program or measure, and (b) the pilot is ultimately commercialized, pilot programs or measures are ineligible for and the benefits and costs associated with those pilots will not be factored into the calculation of the PPI.

73. The PPI and PRI for each Vintage Year shall be incorporated into DEP's DSM/EE or DSM/EE EMF billing factors, as appropriate.

74. In its annual filing, pursuant to Commission Rule R8-69(f), DEP shall file an exhibit that indicates, for each Program or Measure for which it seeks a PPI or PRI, the annual projected and actual utility costs, participant costs, number of Measurement Units installed, per kW and kWh impacts for each Measurement Unit, and per kW and kWh avoided costs for each Measurement Unit, consistent with the UCT, related to the applicable Vintage Year installations that it requests the Commission to approve. Upon its review, the Commission will make findings based on DEP's annual filing for each Program or Measure that is included in an estimated or trued-up PPI or PRI calculation for any given Vintage Year.

75. Low-Income Programs and other specified societal programs or other programs explicitly approved with expected UCT results less than 1.00 shall not be included in the portfolio for purposes of the PPI calculation until they demonstrate UCT results greater than 1.00. However, such programs will be

eligible for the PRI, if so approved by the Commission, until they demonstrate UCT results greater than 1.00.

76. The PPI shall be based on the net dollar savings of DEP's DSM/EE portfolio, as calculated using the UCT. The North Carolina retail jurisdictional and class portions of the system-basis net dollar savings shall be determined in the same manner as utilized to determine the North Carolina retail jurisdictional and class portions of recoverable system costs.

77. Unless the Commission determines otherwise in an annual N.C. Gen. Stat. § 62-133.9 DSM/EE rider proceeding, and subject to the factors and limitations set forth elsewhere in this Mechanism, beginning for Vintage Year 2022 the amount of the pre-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for a Vintage Year, excluding Programs not eligible for a PPI, shall be equal to 10.60% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that Vintage Year, calculated by Program using the UCT (and excluding Low Income Programs and other specified societal programs). The present value of the estimated net dollar savings shall be the difference between the present value of the annual lifetime avoided cost savings for measurement units projected to be installed in that Vintage Year and the present value of the annual lifetime program costs for those measurement units. The annual lifetime avoided cost savings for measurement units installed in the applicable Vintage Year shall be calculated by multiplying the number of each specific type of Measurement Unit projected to be installed in that

Vintage Year by the most current estimates of each lifetime year's per installation kW and kWh savings and by the most current estimates of each lifetime year's per kW and kWh avoided costs. In calculating the forecasted initial PPI it will be assumed that projections will be achieved.

78. Beginning with Vintage Year 2022, the dollar amount of the pre-tax PPI ultimately allowed for each Vintage Year, after true-up pursuant to Paragraph 89 of this Mechanism, shall be no greater than the dollar amount that produces a 19.50% margin over the aggregate pre-tax Program Costs for the Vintage Year of those programs in the Portfolio that are eligible for the PPI. Likewise, the dollar amount of the pre-tax PPI ultimately allowed for each Vintage Year, after true-up pursuant to Paragraph 89 of this Mechanism, shall be no less than the dollar amount that produces the following margins over the aggregate pre-tax Program Costs for the Vintage Year of those programs in the Portfolio that are eligible for the PPI.

Vintage Year 2022: 10.00%

Vintage Year 2023: 6.00%

Vintage Year 2024: 2.50%

Vintage Year 2025 and afterwards, until the next Mechanism review is completed: 2.50%

When making its initial estimates of the PPI pursuant to this Mechanism, DEP shall utilize the best and most accurate estimate of the margin and the resulting PPI percentage it can determine at that time.

79. Unless the Commission determines otherwise in a N.C. Gen. Stat. § 62- 133.9 DSM/EE rider proceeding, the PPI for vintage periods subsequent to the approval of this mechanism through Vintage Year 2021 shall be converted into a stream of no more than 10 levelized annual payments, accounting for and incorporating DEP's overall weighted average net-of-tax rate of return approved in DEP's most recent general rate case as the appropriate discount rate. After Vintage Year 2021, the PPI related to any given Vintage Year will be levelized over the same period over which O&M Program Costs for that Vintage Year are amortized. Levelized annual payments applicable to Programs in prior vintage periods will continue until all such amounts are recovered.

80. The PRI shall be based on the gross avoided costs of those programs eligible for the PRI. The North Carolina retail jurisdictional and class portions of the system-basis gross dollar savings shall be determined in the same manner as utilized to determine the North Carolina retail jurisdictional and class portions of recoverable system costs.

81. Unless the Commission determines otherwise in an annual N.C. Gen. Stat. § 62-133.9 DSM/EE rider proceeding, and subject to the factors and limitations set forth in this Mechanism, beginning for Vintage Year 2022 the amount

of the pre-income-tax PRI initially to be recovered for Low Income Programs and other specified societal programs not eligible for a PPI shall be a percentage, as determined pursuant to Paragraph 82 of this Mechanism, multiplied by the present value of the estimated gross dollar avoided cost savings associated with the applicable DSM/EE Programs installed in that Vintage Year, used in determination of the UCT. The present value of the estimated gross dollar savings shall be determined in the same manner as used for Programs eligible for the PPI.

82. The percentage used to determine the estimated PRI for each Vintage Year shall be 10.60%. This percentage will be multiplied by the Vintage Year avoided costs projected to be generated by each approved PRI-eligible program. When making its initial estimates of the PRI, DEP shall utilize the best and most accurate estimate of the UCT and the resulting PRI percentage it can determine at that time.

83. For the PPI and PRI for Vintage Years 2019 and afterwards, consistent with the Commission's Orders in Docket Nos. E-2, Sub 1145 and E-2, Sub 1174, the program-specific per kW avoided capacity benefits and per kWh avoided energy benefits used for the initial estimate of the PPI and PRI and any PPI or PRI true-up will be derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commissionapproved Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities as of December 31 of the year immediately preceding the date of the

annual DSM/EE rider filing. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility.

84. No later than December 31, 2021, DEP and the Public Staff will jointly review the issue of the appropriate avoided T&D costs to be used in the Company's calculations of cost-effectiveness and achieved net dollar savings, and, if appropriate, recommend in the Company's annual DSM/EE rider proceeding adjustments to the avoided T&D cost rates.

85. The per kW avoided transmission and avoided distribution (avoided T&D) costs used to calculate net savings for a Vintage Year shall be based on the study update at least every three years only if the study update results in a 20% change from the prior study's avoided T&D costs.

86. Unless DEP and the Public Staff agree otherwise, DEP shall not be allowed to update its avoided capacity costs and avoided energy costs after filing its annual cost and incentive recovery application for purposes of determining the DSM/EE and DSM/EE EMF riders in that proceeding.

87. When DEP files for its annual cost recovery under Commission Rule R8-69, it shall comply with the filing requirements of Commission Rule R8-69(f)(1)(iii), reporting all measurement and verification data, even if that data is not

final, to assist the Commission and the Public Staff in their review and monitoring of the impacts of the DSM and EE Measures.

88. DEP bears the burden of proving all dollar savings and costs included in calculating the PPI and PRI. As provided in Rule R8-68(c)(3)(iii), DEP shall be responsible for the EM&V of energy and peak demand savings consistent with its EM&V plan.

89. The PPI and PRI for each Vintage Year shall ultimately be based on net or gross dollar savings, as applicable, as verified by the EM&V process and approved by the Commission. The PPI and PRI for each Vintage Year shall be trued-up as follows:

(a) As part of the DSM/EE rider approved in each annual cost and incentive recovery proceeding, DEP shall be allowed to recover an appropriately and reasonably estimated PPI and PRI (subject to the limitations set forth in this Mechanism) associated with the Vintage Year covered by the rate period in which the DSM/EE rider is to be in effect.

(b) The PPI and PRI related to any given Vintage Year shall be trued-up through the DSM/EE EMF rider in subsequent annual cost and incentive recovery proceedings based on the Commission-approved results of the appropriate EM&V studies related to the program/measure and Vintage Year, as determined pursuant to the EM&V Agreement. The true-up shall be based on verified savings and shall be applied to prospective and past time periods in accordance with the Evaluation, Measurement, and Verification section of this Mechanism.

(c) The amount of the PPI ultimately to be recovered for a given Vintage Year shall be based on the present value of the actual net dollar savings derived from all Measurement Units installed in that Vintage Year, as associated with each DSM/EE program offered during that year (excluding Low Income Programs and other specified societal programs), and calculated by DSM/EE program using the UCT. The present value of the actual net dollar savings shall be the difference between the present value of the annual lifetime avoided cost savings for measurement units installed in that Vintage Year and the present value of the annual lifetime program costs for those measurement units. The annual lifetime avoided cost savings for Measurement Units installed in the applicable Vintage Year shall be calculated by multiplying the number of each specific type of Measurement Unit installed in that Vintage Year by each lifetime year's per installation kW and kWh savings (as verified by the appropriate EM&V study pursuant to the EM&V agreement) and by each lifetime year's per kW and kWh avoided costs as determined when calculating the initially estimated PPI for the Vintage Year. The ultimate PPI will also be subject to the additional factors and limitations set forth in this Mechanism. The Stipulating Parties agree to make all reasonable efforts to ensure that all vintages are fully trued-up within 24 months of the vintage program year.

(d) The amount of the PRI ultimately to be recovered for a given Vintage Year shall be based on the present value of the actual gross dollar savings derived from all Measurement Units installed in that Vintage Year, as associated with each DSM/EE program offered during that year that is eligible for the PRI. Furthermore, the percentage used to determine the final PRI for each Vintage Year will be based on the Company's ability to maintain or improve the cost effectiveness of the PRI-eligible programs. The PRI percentage for each PRI-eligible Program will be determined by comparing (1) the projected UCT ratio for the portfolio of PRI-eligible Programs for the Vintage Year at the time of the Company's DSM Rider filing first estimating that projected Vintage Year UCT ratio to (2) the actual UCT ratio achieved for that portfolio of PRI-eligible Programs as that Vintage Year is trued up in future filings. The ratio (UCT actual / UCT estimate) will then be multiplied by 10.60% to determine the PRI percentage that will be applied to the actual avoided costs generated by each approved PRI-eligible program. At no time will the PRI percentage utilized fall below 2.65% or rise above 13.25%. The present value of the estimated gross dollar savings shall be determined in the same manner as used for determining the recovery of the ultimate PPI. The ultimate PRI will also be subject to the additional factors and limitations set forth in this Mechanism. The Stipulating Parties agree to make all reasonable efforts to ensure that all vintages are fully trued-up within 24 months of the vintage program year.

(e) A program's eligibility for a PPI or PRI will be determined at the time of filing the projection for a Vintage Year and will continue to be eligible for the same incentive at the time of the Vintage Year true-up.

(f) If a program previously eligible for a PRI becomes cost effective under the UCT, it will no longer be eligible to receive a PRI in the next projected Vintage Year for the program, but will be eligible for the PPI.

90. The combined total of all Vintage Year true-ups of the PPI and PRI calculated in a given year's Rule R8-69 proceeding shall be incorporated into the appropriate DSM/EE EMF billing factor.

91. The PRI will be determined on the basis of the avoided costs employed in the determination of the UCT. PRI amounts will be assigned to the Program in which they were earned.

92. The PPI for each Vintage Year shall be allocated to DSM and EE programs in proportion to the present value net dollar savings of each program for the Vintage Year, as calculated pursuant to the method described herein.

Other Incentives

93. As further incentive to motivate the Company to aggressively pursue savings from cost-effective EE and DSM Programs, if the Company achieves annual energy savings of 1.0% of the prior year's DEP system retail electricity sales, in any year during the four-year 2022-2025 period, the Company will receive

an additional incentive of $500,000 for that year. During that same period, if the Company fails to achieve annual energy savings of 0.5% of retail sales, net of sales associated with customers opting out of the Company's EE programs, the Company will reduce its EE revenue requirement by $500,000. Verification of this achievement will be obtained through the EM&V process discussed elsewhere in this Mechanism.

Financial Reporting Requirements

94. In its quarterly ES-1 Reports to the Commission, DEP shall calculate and present its primary North Carolina retail jurisdictional earnings by including all actual EE and DSM Program revenues, including PPI and NLR incentives, and costs. Additionally, DEP shall prepare and present (1) supplementary schedules setting forth the Company's North Carolina retail jurisdictional earnings excluding the effects of the PPI; (2) supplementary schedules setting forth the Company's North Carolina retail jurisdictional earnings excluding the effects of its EE and DSM Programs; (3) supplementary schedules setting forth earnings, including overall rates of return and returns on common equity actually realized from DEP's EE and DSM Programs in total and stated separately by Program Class (Program Classes are hereby defined to be (a) EE Programs and (b) DSM Programs); and (4) supplementary schedules setting forth earnings, including overall rates of return and returns on common equity actually realized from DEP's (a) DSDR Program and (b) all other Programs, collectively, in the EE Program Class. (Show DSDR Program returns and all other collective EE Program returns separately.) Detailed

workpapers shall be provided for each scenario described above. Such workpapers, at a minimum, shall clearly show actual revenues; expenses; taxes; operating income; rate base/investment, including components; and the applicable capitalization ratios and cost rates, including overall rate of return and return on common equity.

Review of Mechanism

95. The terms and conditions of this Mechanism shall be reviewed by the Commission every four years unless otherwise ordered by the Commission. However, a Stipulating Party may request the Commission to initiate such a review at any time within the four year period. The Company and other parties shall submit any proposed changes to the Commission for approval at the time of the filing of the Company's annual DSM/EE rider filing. During the time of review, the Mechanism shall remain in effect until further order of the Commission revising the terms of the Mechanism or taking such other action as the Commission may deem appropriate.

Term

96. This Mechanism shall continue until terminated pursuant to Order of the Commission.

No Precedential Effect

97. The terms of this Mechanism, including the methods and results of determining the PPI, PRI, and other Bonus Incentives, shall not be considered precedential for any purpose other than their application to eligible DSM/EE Programs and cost and utility incentive recovery associated with those Programs, and only until those terms are next partially or wholly reviewed.

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1294

In the Matter of		
Application of Duke Energy Progress,	)	**TESTIMONY OF**
LLC, for Approval of Demand-Side	)	**DAVID M. WILLIAMSON**
Management and Energy Efficiency	)	**PUBLIC STAFF –**
Cost Recovery Rider Pursuant to N.C.	)	**NORTH CAROLINA**
Gen. Stat. § 62-133.9 and Commission	)	**UTILITIES COMMISSION**
Rule R8-69	)	

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND PRESENT POSITION.

A. My name is David M. Williamson. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a Utilities Engineer with the Energy Division of the Public Staff – North Carolina Utilities Commission.

Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.

A. My qualifications and duties are included in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present the Public Staff's analysis and recommendations with respect to the June 14, 2022 application, testimony, and exhibits of Duke Energy Progress, LLC (DEP) for approval of its demand-side management (DSM) and energy efficiency (EE) cost recovery rider for 2023 (2023 Rider).

My testimony discusses: (1) the portfolio of DSM/EE programs included in the proposed 2023 Rider, including modifications to those programs made pursuant to the Flexibility Guidelines;[1] (2) the ongoing cost-effectiveness of each DSM/EE program; (3) the

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[1] The "Flexibility Guidelines" were included as Attachment A to the Cost Recovery and Incentive Mechanism approved by the Commission in its January 20, 2015 Order Approving Revised Cost Recovery and Incentive Mechanism and Granting Waivers in Docket No. E-2, Sub 931.

responses to Commission Questions filed as Appendix A to the Commission's May 20, 2022 Order Requiring Filing of Additional Testimony; (4) concerns regarding various DSM/EE programs going forward; and (5) the evaluation, measurement, and verification (EM&V) studies filed as Exhibits A through G to the testimony of Company witness Karen K. Holbrook.

Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR INVESTIGATION OF DEP'S PROPOSED 2023 RIDER?

A. I reviewed the Company's application and supporting testimony and exhibits, supplemental testimony and exhibits, and responses to Public Staff data requests. In addition, I reviewed the following documents that are pertinent to the 2023 Rider:

1. The Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved on November 27, 2017, in the Commission's Order Approving DSM/EE Rider, Revising DSM/EE Mechanism, and Requiring Filing of Proposed Customer Notice in Docket No. E-2, Sub 1145 (2017 Mechanism).

2. The Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved on October 20, 2020, in the Commission's Order Approving

Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms in Docket No. E-2, Sub 931 (2020 Mechanism).

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. The Public Staff makes the following recommendations:

1. That the Commission approve the proposed reserve margin adjustment factor (RMAF) language for inclusion in the Company's 2017 Mechanism and 2020 Mechanism (collectively, Mechanisms);
2. That, with the exception of Holbrook Exhibit B, the EM&V reports filed by DEP as Holbrook Exhibits A through G be accepted;
3. That the EM&V report filed as Holbrook Exhibit B be held open until an updated report is filed in the next rider proceeding; and
4. That the Commission require the Company, in its next MyHER EM&V report, to conduct a more detailed assessment, as detailed later in this testimony.

Q. ARE YOU PROVIDING ANY EXHIBITS WITH YOUR TESTIMONY?

A. Yes. I have two exhibits:

- Exhibit 1: Proposed Cost-Effectiveness Scores for Vintage Years 2020, 2021, 2022, and 2023; and
- Exhibit 2: Current Actual Cost-Effectiveness Scores for Vintage Years 2019, 2020, and 2021.

DSM/EE Programs in the 2023 Rider

Q. PLEASE IDENTIFY THE DSM/EE PROGRAMS FOR WHICH DEP IS SEEKING COST RECOVERY THROUGH THE DSM/EE RIDER IN THIS PROCEEDING.

A. In its proposed 2023 Rider, DEP is seeking recovery of the costs and incentives associated with the following DEP programs:

- Residential
  - EE Education Program (Sub 1060)
  - Multi-Family EE Program (Sub 1059)
  - My Home Energy Report (MyHER) Program (Sub 989)
  - Neighborhood Energy Saver (Low-Income) Program (Sub 952)
  - Residential Smart $aver EE Program (Sub 936)
  - New Construction Program (Sub 1021)
  - Load Control Program (EnergyWise Home) (Sub 927)
  - Save Energy and Water Kit Program (Sub 1085) (now part of the EE Appliances and Devices Program)

- Energy Assessment Program (Sub 1094)
- Low-Income Weatherization Pay for Performance Program (Sub 1187)
- Energy Efficient Appliances and Devices Program (Subs 936 and 1174)

- Non-Residential
  - Non-Residential Smart $aver Energy Efficient Products and Assessment Program (Sub 938)
  - Non-Residential Smart $aver Performance Incentive Program (Sub 1126)
  - Small Business Energy Saver Program (Sub 1022)
  - CIG Demand Response Automation (CIG DRA) Program (Sub 953)
  - EnergyWise for Business (Sub 1086)
- Combined Residential and Non-Residential
  - Energy Efficient Lighting Program (EE Lighting) (Sub 950)
  - Distribution System Demand Response (DSDR) Program (Sub 926)

Each of these programs has received Commission approval as a new DSM or EE program and is eligible for cost recovery in this proceeding pursuant to N.C. Gen. Stat. § 62-133.9, subject to certain program-specific conditions imposed by the Commission.

Since initial program approval, DEP has modified several of these programs to add or remove measures, consistent with the Flexibility Guidelines, to enhance the programs' cost-effectiveness and to address changing market conditions and technologies. In each case, DEP either sought Commission approval or provided notice of those modifications in compliance with those guidelines.

I also note that since the last rider proceeding, DEP has received Commission approval to modify the Residential Multi-Family EE Program, EnergyWise Home Program, and Small Business Energy Saver Program, and to continue the Low-Income Weatherization Pay for Performance Program.

Q. ARE THERE ANY PROGRAMS THAT ARE EXPECTED TO BE REMOVED FROM THE PORTFOLIO BEFORE THE NEXT RIDER PROCEEDING?

A. Yes. In response to the Commission's April 16, 2021 Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice in Docket No. E-2, Sub 1219, the

Company plans to transition certain DSDR costs from the DSM/EE rider to base rates in its next general rate case. In response to Public Staff discovery, the Company described the process that it intends to take to achieve this transition. The Public Staff expects this issue to be fully explored in the upcoming DEP general rate case.

Cost-Effectiveness

Q. HOW IS THE COST-EFFECTIVENESS OF DEP'S DSM/EE PROGRAMS EVALUATED?

A. The Public Staff reviews the cost-effectiveness of each individual DSM/EE program when it is proposed for approval and then annually in the rider proceedings. Pursuant to the Mechanisms, cost-effectiveness is evaluated at both the program and portfolio levels. The Public Staff reviews cost-effectiveness using the Utility Cost (UC), Total Resource Cost (TRC), Participant, and Ratepayer Impact Measure (RIM) tests. Under each of these tests, a result above 1.0 indicates that a program is cost-effective.

A program may score above 1.0 on one or more tests, and below 1.0 on other tests. The Public Staff, as well as the 2020 Mechanism, places greater weight on the UC test.

The TRC test represents the combined utility and participant benefits that will result from implementation of the program; a result greater than 1.0 indicates that the benefits outweigh the costs of a program to both the utility and the program's participants. A UC test result greater than 1.0 means that the program is cost beneficial[2] to the utility; the overall system benefits are greater than the utility's costs, including incentives paid to participants. The Participant test is used to evaluate the benefits against the costs of program participants. The RIM test shows how ratepayers who <u>do not</u> participate in a program will be impacted by the program.

Q. HOW IS COST-EFFECTIVENESS EVALUATED IN DSM/EE RIDER PROCEEDINGS?

A. In each DSM/EE rider proceeding, DEP calculates the projected cost-effectiveness of each program and the combined portfolio for the upcoming rate period (Holbrook Exhibit 7). Subsequently, when new DSM/EE programs are approved under Commission Rule R8-68, potential cost-effectiveness is evaluated over a three-to-five-year period using estimates of participation and measure attributes that can be reasonably expected over that period. The evaluations in

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[2] The phrase "cost beneficial" used herein denotes the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service and avoiding energy generation from existing or new facilities or purchased power.

DSM/EE rider proceedings look more specifically at the actual performance of a typical measure, as well as the expected performance over the next year. Each year's rider filing is updated with the most current EM&V data and other program performance data.

Q. HOW DOES THE PUBLIC STAFF ASSESS COST-EFFECTIVENESS IN EACH RIDER?

A. The Public Staff compares the cost-effectiveness test projections from previous DSM/EE proceedings to those in the current filing and develops a trend of cost-effectiveness projections that serve as the basis for the Public Staff's recommendation on whether a program should: (1) continue as currently implemented; (2) be monitored for further decreases in cost-effectiveness along with any Company efforts to improve cost-effectiveness; or (3) be terminated.

Q. HOW DO THE FORWARD-LOOKING COST-EFFECTIVENESS TEST SCORES FILED IN THIS RIDER COMPARE TO SCORES IDENTIFIED IN PREVIOUS RIDERS?

A. While many programs continue to be cost-effective, the TRC and UC scores for all programs have a natural ebb and flow over the years of DSM/EE rider proceedings, meaning that the value of the inputs used in determining their scores change over time. Such changes are mainly driven by updates to the avoided cost rate determinations. In addition, changes to cost-effectiveness are also attributable to updates of unit savings as determined through EM&V of the program. As programs mature and baseline standards increase, it becomes more difficult for a program to produce cost-effective savings. On the other hand, some programs have experienced greater than expected participation, which usually results in greater savings per unit cost, generally increasing cost-effectiveness. Finally, as avoided cost rates have decreased in recent years, cost-effectiveness has decreased. The Public Staff does not anticipate this trend to continue as fuel costs increase, more renewable capacity is added and coal plants are retired, the need for additional capacity resources grows, and the emphasis on grid improvement increases; each of these factors is likely to produce higher valuations of the benefits from DSM and EE programs and increases in the cost-effectiveness of both.

Changes in the Company's forward-looking cost-effectiveness test scores are shown for Vintage Years 2020, 2021, 2022, and 2023 in Williamson Exhibit No. 1.

In addition to the forward-looking cost-effectiveness test results, as most of the EM&V reports for the Company's portfolio of programs are completed, the Company has provided the Public Staff with updated, actual cost-effectiveness test results for each program and program year over Vintage Years 2019, 2020, and 2021.

Q. WHAT BENEFIT DOES A REVIEW OF ACTUAL COST-EFFECTIVENESS PROVIDE?

A. Understanding that the date of completion of an EM&V may differ between programs, a rolling record of actual cost-effectiveness results confirms whether the programs within the portfolio have produced and continue to produce cost-effective savings. In addition, actual test results highlight programs that are not performing at or above the original projection. The actual cost-effectiveness results for DEP's portfolio of DSM/EE programs are shown in Williamson Exhibit No. 2. These test results reflect annual updates to cost-effectiveness after the incorporation of savings derived through EM&V and updated participation numbers.

Program Performance

Q. PLEASE DISCUSS THE PERFORMANCE OF THE PORTFOLIO.

A. The Public Staff's review of program performance involved reviewing: (1) cost-effectiveness trends; and (2) Holbrook Exhibit 6, which provides information on each program's marketing strategy, potential areas of concern, and an overall qualitative analysis.

In the Company's bi-monthly EE collaborative meetings, the Company provides updates to the Collaborative about program performance including participation, customer engagement, and potential barriers to entry and continuation of the program, recently completed EM&V and market potential study activities, and potential new program offerings.

Based on the resources mentioned above, the Public Staff believes that the historical performance of the Company's programs is satisfactory. With respect to the Residential Smart $aver EE Program, the Public Staff recognizes that the program continues to struggle to maintain cost-effectiveness and does not object to the Company continuing to offer this program. The forecasted UC test score has increased over the course of the last two rider filings, as shown in Williamson Exhibit No. 1, but actual UC test and TRC test scores have decreased over the three-year period shown in Williamson Exhibit No. 2. HVAC replacement continues to provide significant energy savings to the utility system and the participant, but it is only marginally cost-effective.

<u>Avoided Transmission and Distribution Update</u>

Q. HAS THE COMPANY UPDATED ITS AVOIDED TRANSMISSION AND DISTRIBUTION (T&D) RATES IN THIS PROCEEDING BASED ON ITS AVOIDED T&D STUDY?

A. Yes, the Company updated its avoided T&D rates for purposes of this proceeding. However, while the results of an avoided T&D study are usually used until the next study is completed, the Company and the Public Staff have agreed that the updated avoided T&D rates used in this proceeding will be used for this proceeding only, as the 2021 Avoided T&D Study is still being reviewed. I will discuss this agreement in detail later in my testimony.

Q. WHAT HAS CHANGED SINCE THE LAST AVOIDED T&D STUDY?

A. The methodology for determining the avoided T&D rates remains the same as the methodology used in the 2017 study. However, the Public Staff is working with the Company to review the model inputs at a more granular level.

Q. WHAT DO YOU MEAN BY REVIEWING THE INPUTS AT A MORE GRANULAR LEVEL?

A. Paragraph 84 of the 2020 Mechanism required the Company and the Public Staff, by December 31, 2021, to review the avoided T&D costs to be used in prospective DSM/EE riders, and, if appropriate, make recommendations regarding the avoided T&D cost rates to be used in the Company's annual DSM/EE rider proceeding. When the Company presented the 2021 Avoided T&D Study to the Public Staff in the third quarter of 2021, the Public Staff began to closely review the projects and their associated costs (inputs) that were used to create the annual T&D expenditures that flow into the calculation of the avoided T&D rate.

The Public Staff did not conduct a prudence review as performed in a general rate case investigation, but it reviewed the types of T&D projects included in the avoided T&D methodology and whether those projects were avoidable due either to the implementation of DSM/EE programs or to ordinary customer growth.

After the Public Staff reviewed the Company's proposed 2021 Avoided T&D Study, the Company and the Public Staff met several times to discuss these inputs and the evolution of the screening process for this calculation. However, while the meetings were productive, the Company and the Public Staff continue to work on finalizing the Study. Therefore, the Company and Public Staff agreed to use certain avoided T&D rates for the 2023 Rider only and to continue the dialogue to develop a reasonable rate that would apply in DSM/EE rider applications filed after January 1, 2023. The agreed-upon rates used to calculate cost-effectiveness for the 2023 Rider are shown in the table below.

	Avoided Transmission ($/kW-year)	Avoided Distribution ($/kW-year)	Total Avoided T&D ($/kW-year)
DEC	30.44	47.58	78.02
DEP	29.88	42.90	72.78

Q. HOW WERE THESE PROXY RATES FOR AVOIDED T&D USED IN THIS RIDER FILING DETERMINED?

A. Until the Company and the Public Staff conclude their review of the avoided T&D rate study, the avoided T&D rates used in this proceeding are based on an approximate average of the avoided T&D rates used in the last DSM/EE rider proceeding and the rates presented to the Public Staff by DEP in the third quarter of 2021. The proxy rates agreed to by the Public Staff and DEP, from the Public Staff's perspective, provide assurance that rates are based on projects that were truly avoidable through DSM/EE activities and, from the Company's perspective, are closer to actual avoided T&D rates based on a current level of project costs.

Q. WHEN WILL THE AVOIDED T&D STUDY BE COMPLETED?

A. Given the productive nature of the meetings between the Company and the Public Staff, I believe that a final Avoided T&D Rate Study should be finalized before the end of 2022 and that the avoided T&D rates that result from the Study will be applicable for Vintage Year 2024 and beyond, until the next Avoided T&D Study is completed.

<u>Inclusion of a RMAF in the DSM/EE Mechanism</u>

Q. HAS THE COMPANY PROPOSED CHANGES TO THE DSM/EE COST RECOVERY MECHANISM?

A. Yes, pursuant to the Commission's December 17, 2021 Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice in Docket No. E-2, Sub 1273, the Company proposed language for inclusion in the 2020 Mechanism regarding the methodology to be used for the RMAF.

Q. HAS THE PUBLIC STAFF REVIEWED THE PROPOSED LANGUAGE?

A. Yes. The Company and the Public Staff have worked together to craft agreeable language for the RMAF. Holbrook Exhibit 13 is the product of this work.

Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON THE PROPOSED LANGUAGE?

A. The Public Staff recommends that the Commission approve the Company's language as proposed in Holbrook Exhibit 13 for inclusion in the Company's 2020 Mechanism. The 2020 Mechanism with the RMAF language incorporated is attached to the testimony of Public Staff witness Boswell as Exhibit I.

<u>Public Staff Responses to Commission Questions – Appendix A</u>

Q. COMMISSION QUESTION 1 - DESCRIBE HOW THE NEW CUSTOMER DATA ANALYSIS AND VISUALIZATION COMPONENTS OF ADVANCED METERING INFRASTRUCTURE AND CUSTOMER CONNECT ARE BEING USED TO MARKET EXISTING EE AND DSM PROGRAMS IN GENERAL AND, SPECIFICALLY, WHAT DEP WILL DO TO INTEGRATE THE NEW ADVANCED METERING INFRASTRUCTURE/CUSTOMER CONNECT CAPABILITIES WITH THE MYHER PROGRAM TO AVOID REDUNDANCY AND REDUCE COSTS.

A. Now that DEP has completed the deployment of Advanced Metering Infrastructure (AMI) and the updated Customer Connect billing system, the Company is able to take a more refined look at how its system is operating and how customers are using energy at the point of delivery. More importantly, AMI allows customers to make more informed decisions about their consumption behavior and provides more opportunity for customers to react when high demand and system conditions warrant load reductions. AMI also allows DEP to exercise its DSM resources in a more strategic manner (e.g., addressing load and capacity constraints on specific feeders). AMI and the Customer Connect billing system are able to advance customers' understanding of various rate designs that not only improve system efficiency, but also encourage customers to take advantage of time-of-use (TOU) rates and save on their bills.

The potential for increased participation in DSM and EE programs through the implementation of AMI and Customer Connect should result in system and operational efficiencies that, in turn, lead to greater savings for both DEP and participating customers.

Furthermore, the availability of customer usage data to third parties is likely to provide additional customer benefits through the energy efficiency goods and services that third parties might offer. This availability of customer usage data would be subject to the terms and conditions of Duke's code of conduct, and the third party's obligations to protect customer data. A rulemaking proceeding governing the process related to third parties obtaining access to customer usage data is currently underway in Docket No. E-100, Sub 161.

Last, with the capabilities of AMI and Customer Connect, the Company has transitioned away from using a third party to facilitate its MyHER program. Instead, the Company has achieved cost savings by performing the administration of the program in-house.

Q. COMMISSION QUESTION 2 - PROVIDE AN UPDATE ON THE PROGRESS OF EXPANDING THE USE OF CUSTOMER DATA IN DETERMINING EE AND DSM SAVINGS IN PROGRAM EVALUATIONS AND COST-EFFECTIVENESS TESTS.

A. AMI data is providing information that can be used to target specific market participants, validate EM&V, and inform customers of additional behaviors that could be modified. The use of sub-hourly data (15- and 30-minute intervals) will provide a better view of the impacts realized by a customer's DSM activation. Additionally, sub-hourly data will help customers understand, through visualization, how participating in a DSM program may impact their daily life and finances.

As the Company begins to use AMI data in its EM&V evaluations, it will need to determine whether it is most appropriate to conduct a billing analysis, an engineering analysis, or a combination of the two with its third-party evaluators.[3]

Q. COMMISSION QUESTION 3 - PROVIDE A TABLE COMPARING THE PERFORMANCE OF DEP'S DSM/EE PORTFOLIO'S COSTS AND SAVINGS DURING THE 2020 DSM/EE RIDER TEST YEAR WITH THE PERFORMANCE IN THE 2021 DSM/EE RIDER TEST YEAR. THE TABLE SHOULD SHOW BOTH PROJECTED AND ACTUAL SAVINGS AND PROJECTED AND ACTUAL PROGRAM FIRST YEAR COSTS AND LEVELIZED COSTS.

A. For purposes of this proceeding, the Public Staff accepts the table provided by the Company.

The Public Staff notes that Williamson Exhibit Nos. 1 and 2 provide the actual and forecasted performance of the portfolios for Vintage Years 2020 and 2021. It should also be noted that this data is for the portfolio of programs, each of which is in a different stage of evaluation.

For many reports, the use of AMI data has not yet been incorporated, as the ability to utilize AMI data for EM&V is still evolving.

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[3] Typically, an evaluator uses either a billing analysis or an engineering analysis to assess program savings.

Q. COMMISSION QUESTION 4 - PROVIDE A RESPONSE TO PUBLIC STAFF WITNESS WILLIAMSON'S TESTIMONY IN DOCKET NO. E-2, SUB 1273, RELATED TO THE PROVISIONS OF COMMISSION RULE R8-69(B)(5) AS APPLIED TO THE OVERLAP OF AMI INFORMED SERVICES AND THE SPECIALIZED TIPS SUPPORTED BY THE MYHER EE PROGRAM. HAS DUKE ENERGY INVESTIGATED MODIFYING OR EXPANDING THE CAPABILITIES OF THE MYHER PROGRAM NOW THAT IT HAS AMI DATA THAT CAN TRACK CUSTOMER USAGE AND, THEREFORE, EE OPPORTUNITIES AT A MUCH MORE GRANULAR LEVEL?

A. In response to Public Staff discovery, the Company described how the MyHER EM&V process accounts for savings, as well as how those savings are teased out from other EE measures. The Company also acknowledged that all customers may go online and see their hourly usage AMI data, regardless of whether they are MyHER participants.

The Company's response raises two concerns. First, customers have only recently had the ability to go online and view their hourly usage data. In response to the Public Staff's data request, the Company stated that customers only began having access to the MyAccount AMI charts in November of 2021. It is the Public Staff's expectation that, as more customers become familiar with this tool, they will begin to utilize this interval AMI data tool to maximize their energy bill savings. Second, as described in the Mechanisms, the Company's EM&V reports typically use data points from a sample taken several years prior. The Company discussed in its response that it uses both a treatment and control group to identify MyHER savings. However, the current MyHER EM&V process does not account for customers who utilize the customer web portal where they can view their AMI data and take actions to change their usage patterns going forward.

The Company further acknowledged that participants using the Smart Meter Usage App (a mobile app that allows customers to view their AMI interval data) are treated like regular customers and are assigned to either a control or treatment group in the EM&V process.

As the EM&V sampling period gets closer to the date when these new AMI tools became available to customers, the Public Staff believes that the EM&V process should increase its rigor by including an analysis, surveys, and other relevant studies that show how having the AMI usage data available to customers influences their behaviors toward implementing DSM and EE, whether that is through the creation of another treatment group in the EM&V process or by other means.

Q. COMMISSION QUESTION 5 - HAS DEP INVESTIGATED MODIFYING OR EXPANDING THE CAPABILITIES OF THE MYHER PROGRAM NOW THAT CUSTOMER CONNECT PAIRED WITH AMI DATA HAS CREATED EXPANDED OPPORTUNITIES FOR COMMUNICATING WITH CUSTOMERS?

A. In response to this question, the Company provided three potential capabilities that it is currently exploring. The Public Staff is satisfied that some of these items will improve EM&V capabilities and MyHER's energy usage comparison function by helping to identify customers who have certain types of equipment (e.g., pool pumps, electric vehicles, etc.).

That being said, the Public Staff is concerned with the Company's approach to using AMI data to alert customers when their usage spikes as part of the MyHER program. This is an important capability that <u>all</u> customers should have access to as a result of the implementation of AMI, especially customers on a dynamic rate tariff. The Company's response implies that only MyHER customers would have access to such a functionality. If so, the Public Staff disagrees with this approach, as AMI meter costs are collected through base rates paid by all customers, and all customers should have access to the benefits of AMI's implementation.

Q. COMMISSION QUESTION 6 - DOES DEP HAVE METRICS THAT SHOW THE NUMBER OF MYHER PARTICIPANTS THAT HAVE UTILIZED NEW AMI/CUSTOMER CONNECT CAPABILITIES, SUCH AS THE PERCENTAGE OF MYHER CUSTOMERS THAT HAVE VISITED THE AMI USAGE WEB SITE? IF SO, PROVIDE THAT INFORMATION.

A. The Public Staff has reviewed the Company's response to this question and notes that the customer count for the My Account AMI charts is based on customers only having access to AMI data since November 2021. As with any initiative, it will take time for awareness and usage to grow. Efforts to improve customer awareness and marketing should allow customers to understand what this portal has to offer.

The Public Staff encourages the Company to advertise all new Customer Connect and AMI-related functions and features on the home page (both the generic and customer portal homepages) of its website so that customers are aware of the options available to them.

Q. COMMISSION QUESTION 7 - DESCRIBE ANY IMPACTS THAT DEP'S NEW DYNAMIC PRICING TARIFFS ARE EXPECTED TO HAVE ON EXISTING EE AND DSM PROGRAM MARKETING, IMPLEMENTATION, COST-EFFECTIVENESS CALCULATIONS AND EVALUATION. FOR EXAMPLE, WILL THE SAVINGS ATTRIBUTED TO THE IMPLEMENTATION OF AN EE MEASURE FOR A CUSTOMER SUBSCRIBED TO A DYNAMIC PRICING TARIFF BE DIFFERENT FROM THOSE OF A CUSTOMER ON A TRADITIONAL RATE STRUCTURE?

A. The Public Staff recommends that the Commission exclude dynamic pricing tariffs from the DSM/EE portfolio for several reasons. First, to the Public Staff's knowledge, the Commission has never considered dynamic rate tariffs such as the Company's TOU and real-time pricing schedules to be DSM or EE, including their treatment in the 2017 and 2020 Mechanisms and DEP's earlier mechanism approved in Docket No. E-2, Sub 931 on June 15, 2009, and as revised on January 20, 2015.[4] Like a DSM program, dynamic pricing tariffs encourage customers to shift usage from on-peak periods to off-peak. However, dynamic pricing tariffs solely rely on the customer to

[4]See Docket No. E-2, Sub 931. This docket established the initial DSM/EE cost recovery mechanism that was adopted pursuant to the promulgation of N.C.G.S. §§ 62-133.8 and 133.9.

take some action to shift usage, while DSM programs are actively managed by the Company, and when necessary, are activated without customer involvement.

Another reason to exclude dynamic pricing tariffs from the DSM/EE portfolio is cost recovery. The effects of passive changes in load due to customers reacting to dynamic pricing tariffs are similar to when customers choose to increase or decrease their loads to respond to the changes in the rates for service. The only difference is the effect on net load - an increase or decrease based on the customer's response. Those net impacts are recovered on a cost-of-service basis from all customers, while the cost of the DSM/EE portfolio is recovered from the customer class targeted by the DSM/EE program.

A third reason to exclude dynamic pricing tariffs from the DSM/EE portfolio is system planning. The utility develops its load forecast on a system and customer class basis. That forecast serves to inform the capacity resources needed in the future. Only controllable resources are used to satisfy the capacity resources needed. DSM programs are controlled by the utility, which allows DEP to incorporate the impacts as load resources when system conditions justify their use.

Dynamic pricing tariffs should have little to no impact on DSM/EE program marketing, implementation, or cost-effectiveness. As previously stated, dynamic pricing tariffs provide passive savings if customers respond to a price signal and shift their loads from on- to off-peak periods. These savings are different from the capacity savings realized from the Company's active management of a DSM program. While dynamic pricing tariffs can provide further motivation to the customer to adopt EE measures, adoption and the incremental savings realized from EE measures are less certain. Further survey and EM&V work would be required to determine the extent to which the dynamic pricing tariff itself motivated the customer to adopt an EE measure. The Public Staff is not aware of any EM&V that has attempted to determine the influence of dynamic pricing tariffs on EE adoption rates. Further, the Public Staff is not aware of any data or calculations of cost-effectiveness in other jurisdictions that incorporate any impacts from dynamic pricing tariffs.

Q. COMMISSION QUESTION 8 - PROVIDE A SUMMARY OF KEY DSM AND/OR EE PROGRAM MODIFICATIONS OR ADDITIONS INTRODUCED DURING AND AS A PRODUCT OF THE DSM/EE COLLABORATIVE DURING 2020 AND 2021 AND ESTIMATE THE ENERGY SAVINGS AND ECONOMIC IMPACTS ATTRIBUTED TO THOSE ACTIONS.

A. In addition to the Company's response to this question in its testimony, the Company also stated, in response to a Public Staff data request, that:

> All measures are presented to the DSM/EE Collaborative before they are finalized to gather and incorporate Collaborative feedback. As a result of that feedback, the Company often evaluates different measures or ensures that specific issues are addressed. Such feedback was incorporated for the Residential Energy Assessments measures, Energy Efficient Appliances and Devices, Low-Income EE and Weatherization Assistance Program and EnergyWise for Business. All of these program expansions originated within the Company. However, the Company presented each of the measures listed in Holbrook Exhibit 16 to the Collaborative prior to the expansions being finalized. Various members asked questions, requested clarifications, and provided input, which may have influenced the final version of implementation or execution of the program.

The Public Staff finds the Company's response to this question to be reasonable.

Q. COMMISSION QUESTION 9 - DESCRIBE ANY IMPLICATIONS THAT ANY OF THE NEW COMPONENTS OF S.L. 2021-165 WILL HAVE OR IS EXPECTED TO HAVE ON DEP'S EE AND/OR DSM PROGRAMS AND THE RIDER APPLICATION.

A. In its response to this question, the Company discussed the aggressive goals used by DEP and Duke Energy Carolinas, LLC (collectively, Duke) in their proposed Carbon Plan, filed in Docket No.

E-100, Sub 179 on May 16, 2022. The Company's EE savings goal in its proposed Carbon Plan targets an annual impact of 1% of retail sales from eligible load and exceeds the achievable savings projected in Duke's current Market Potential Study. Additionally, this is a long-term forecast that assumes numerous enablers. One such proposed enabler is the consideration of as-found baselines for energy savings.[5] Generally, this methodology is predicated on a calculation that uses the existing equipment installed at the time an EE measure is to be installed, with the resulting energy savings calculated as the difference between the existing equipment and new EE equipment. While there have been instances of the as-found baseline methodology being used in past EM&V reports for custom and prescriptive projects, the impact of relying more on this methodology for DSM/EE cost recovery purposes may need to be examined further to determine if the current 2020 Mechanism needs to be amended.

Another enabler is associated with updates to the avoided cost methodology for energy efficiency. The calculation of avoided cost currently excludes the cost of carbon in its biennial avoided cost proceedings. If a cost of carbon were approved in an avoided cost

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[5] Chapter 4 of Duke's proposed Carbon Plan at p. 34.

proceeding, that input would be incorporated into the final avoided cost calculations and rates ultimately approved by the Commission. This change would then flow to the avoided cost rates utilized in the DSM/EE Rider, program approval applications, and the calculation of the utilities' performance incentive. In this case, the cost recovery mechanism may need to be reassessed to ensure that utility incentives are reasonable.

In addition, the method of accounting for carbon reductions for purposes of satisfying S.L. 2021-165 would be similar to how EE credits are counted for compliance with the Renewable Energy and Energy Efficiency Portfolio Standard (REPS). There would be no financial impact on the riders or program applications but would allow for the tracking of the carbon reductions produced by each program and by the portfolio as a whole. It remains to be seen how these updates will affect savings and ultimately the PPI.

Q. COMMISSION QUESTION 10 - PROVIDE A SUMMARY OF THE MOST UP-TO-DATE PROJECTED AND ACTUAL PROGRAM PARTICIPATION (RESIDENTIAL ACCOUNTS), DIRECT SAVINGS PER PARTICIPANT (PROVISIONAL AND IF APPLICABLE CORRECTED), AND TOTAL PROGRAM DIRECT SAVINGS (PROVISIONAL PROJECTED IN RIDER YEAR

APPLICATION AND FINAL AFTER ALL ADJUSTMENTS). DO NOT INCLUDE ANY AVOIDED COST OR RESULTING PPI IN THE SAVINGS TOTALS – ONLY PROVIDE DIRECT PARTICIPANT ANNUAL ENERGY SAVINGS ATTRIBUTED TO PROGRAM PARTICIPATION. FOR "FINAL" AND "ADJUSTED" TOTALS – USE ANY ADJUSTMENTS THAT WERE MADE IN THE YEARS AFTER INITIAL RIDER APPLICATION BASED ON ACTUAL DATA OR DATA FROM REVISED EM&V REPORTS.

A. The Public Staff has reviewed the Company's response to this question and believes their response to be complete.

Q. COMMISSION QUESTION 11 - TAKING INTO ACCOUNT ANY ADJUSTMENTS MADE AFTER THE INITIAL RIDER APPLICATION, PROVIDE A SUMMARY OF THE DIFFERENT MYHER PROGRAM COSTS AND OTHER REVENUE REQUIREMENT COMPONENTS THAT OCCURRED DURING ACTUAL RIDER RATE YEARS. FOR LATER YEARS SUCH AS 2021 OR 2022 ONWARDS WHEN ACTUAL COSTS WERE NOT AVAILABLE, PROVIDE ESTIMATES. VALUES SHOULD COINCIDE WITH THE RATE YEAR THEY WERE INCURRED, NOT THE YEAR WHEN THEY WERE ULTIMATELY INCLUDED IN THE RIDER REVENUE REQUIREMENTS.

A. The Public Staff has reviewed the Company's response to this question and believes their response to be complete.

Q. COMMISSION QUESTION 12 - EXPLAIN HOW THE ANTICIPATED SAVINGS SHOWN IN THE TABLE ABOVE ARE INCORPORATED OR REFLECTED IN FUTURE LOAD PROJECTIONS (E.G., LOAD PROJECTIONS PRESENTED IN THE CARBON PLAN)?

A. The Public Staff believes that the Company's response regarding its historical treatment of anticipated savings in Integrated Resource Plan proceedings, as well as how the Company has proposed to introduce a flat savings target of 1% of eligible load in its proposed Carbon Plan, are an accurate representation of how it is handling these filings.

Q. COMMISSION QUESTION 13 - PROVIDE ESTIMATES OF THE NUMBER OF MYHER PARTICIPANTS THAT BEGAN PARTICIPATION FOR THE FIRST TIME DURING EACH RIDER RATE YEAR.

A. The Public Staff has reviewed the Company's response to this question and believes its response to be complete.

EM&V

Q. HAVE YOU REVIEWED THE EM&V REPORTS FILED BY DEP?

A. Yes. The Public Staff contracted the services of GDS Associates, Inc. (GDS) to assist with review of EM&V. With GDS's assistance, I have reviewed the EM&V reports filed in this proceeding as Holbrook Exhibits A through G.

I also reviewed previous Commission orders to determine if DEP complied with provisions regarding EM&V contained in those orders. My review leads me to conclude that the Company is complying with the various Commission orders regarding EM&V of its DSM/EE portfolio.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING THESE EM&V REPORTS?

A. Yes. Based on my review and discussions with the Company, it has been determined that Holbrook Exhibit B contains an error in the model inputs associated with the interactive effects that are used to determine the net-to-gross ratio. The Company has agreed to update the report and incorporate the financial impacts associated with the update in the next rider proceeding. The Public Staff is agreeable to this procedure and recommends that the Commission hold this report open until the next rider proceeding.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING FUTURE EM&V REPORTS?

A. Yes, I have four recommendations. First, the Public Staff would like to see a more expansive survey evaluation for the MyHER program. Currently, the treatment group is asked limited questions about the interactions it has with the MyHER report. Namely, the primary question asking participants whether they read the reports provides the following response options: (1) “Always;” (2) “Sometimes;” and (3) “Never.” The Public Staff agrees that “Always” and “Never” are strong indicators that would influence a Net-to-Gross ratio. However, “Sometimes” is too vague a response to provide meaningful data. For example, does “Sometimes” represent one out of eight reports or seven out of eight reports? The MyHER Report’s determination of the meaning of “Sometimes” and how influential that response is to the conclusions drawn by the MyHER Report is unclear. The Public Staff does not take issue with this terminology in this proceeding. However, the Public Staff does recommend that the Commission require the Company, in its next MyHER EM&V report, to expand on its methodology and include more detailed questions to determine how often customers actually read their MyHER report.

Second, the Public Staff’s recommendations for a deeper inquiry into participant use of MyHER reports are based on questions regarding the influence of reports that do not get opened and how those unused reports are considered in the EM&V evaluation. For example, if a participant states that he or she received fewer than four reports, but the Company sends six-eight reports per year, the Public Staff would like to know whether the evaluation takes into account those unopened or unreceived reports in its calculation of savings determinations from the program. Therefore, the Public Staff recommends that the Commission require the Company, in its next MyHER EM&V report, to include more detailed questions related to the number of MyHER reports that participants do not read.

Third, the Company's EM&V report discusses the ability, through the use of AMI, to disaggregate participants who have electric vehicles. The EM&V report does not discuss, however, whether it can also disaggregate participants with solar panels or on a TOU rate schedule. All three of these activities would generate a different load shape for a participating customer's home and would be distinct enough to warrant being grouped with other participants with similar homes. Currently, the Public Staff does not believe that the rigor of home grouping reaches this level of granularity. Therefore, the Public Staff recommends that the Commission require the Company, in its next MyHER EM&V report, to provide an assessment of the criteria used to group similar homes together in the EM&V report, and to clarify whether homes with features such as electric vehicles, solar panels, and a TOU rate are grouped together.

Fourth, the Public Staff believes there is value in understanding whether and to what extent the MyHER reports motivate customers to participate in other programs within DEP's DSM/EE portfolio, and, relatedly, what other non-utility initiatives have motivated customers to install EE measures in their homes. Therefore, the Public Staff recommends that the Commission require the Company, in its next MyHER EM&V report, to include more detailed questions related to: (1) whether the MyHER reports motivate participants to adopt measures within DEP's DSM/EE portfolio; and (2) how other non-utility initiatives have influenced participant decisions to install EE measures in their homes.

Q. SHOULD THE REMAINING EM&V REPORTS FILED IN THIS PROCEEDING BE ACCEPTED AS COMPLETE?

A. Yes, the remaining EM&V reports filed in this proceeding should be considered complete.

Q. HAVE YOU CONFIRMED THAT THE COMPANY'S CALCULATIONS INCORPORATE THE VERIFIED SAVINGS OF THE VARIOUS EM&V REPORTS?

A. Yes. As in previous cost recovery proceedings, I was able, through sampling, to verify that the changes to program impacts and participation were appropriately incorporated into the rider calculations for each DSM/EE program, as well as the actual participation and impacts calculated with EM&V data. Specifically, I reviewed: (1) workpapers provided in response to data requests; (2) a sampling of the EE programs; and (3) Holbrook Exhibit 1, which incorporates data from various EM&V studies. I also met with DEP personnel to review the calculations, EM&V, DSMore modeling inputs, and other data related to the program/measure participation and impacts. My ongoing review of this data indicates that DEP has appropriately incorporated the findings from EM&V studies and annual participation into its rider calculations consistent with Commission orders and the 2020 Mechanism.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

APPENDIX A

DAVID M. WILLIAMSON

I am a 2014 graduate of North Carolina State University with a Bachelor of Science Degree in Electrical Engineering. I began my employment with the Public Staff's Electric Division in March of 2015. In August of 2020, the Electric Division merged with the Natural Gas Division to form the Energy Division, where I am a part of the Electric Section - Rates and Energy Services. My current responsibilities include reviewing applications, making recommendations for certificates of public convenience and necessity of small power producers, master meters, resale of electric service, and interpreting and applying utility service rules and regulations.

My primary responsibility within the Public Staff is reviewing and making recommendations on DSM/EE filings for initial program approval, program modifications, EM&V evaluations, and on-going program performance of Electric and Natural Gas' portfolio of EE programs. I have filed testimony in various Duke Energy Carolinas, LLC, Duke Energy Progress, LLC, and Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina Demand Side Management/Energy Efficiency rider proceedings, as well as recent Electric and Natural Gas general rate case proceedings.

Duke Energy Progress, LLC
Comparison of "As-Filed" Cost-Effectiveness Scores to Previous DSM/EE Riders

Public Staff
Williamson Exhibit 1
E-2, Sub 1294

	Evans Exhibit 7 in Sub 1206 Vintage 2020				Evans Exhibit 7 in Sub 1252 Vintage 2021				Evans Exhibit 7 in Sub 1273 Vintage 2022				Holbrook Exhibit 7 in Sub 1294 Vintage 2023				Percent Change from previous V2020 to V2021	
Program	**UCT**	**TRC**	**RIM**	**PCT**	**UCT**	**TRC**	**RIM**	**PCT**	**UCT**	**TRC**	**RIM**	**PCT**	**UCT**	**TRC**	**RIM**	**PCT**	**UCT**	**TRC**
Residential Programs																		
Energy Education Program for Schools	1.35	1.38	0.51	10.30	1.37	1.39	0.56	9.10	1.46	1.50	0.60	8.95	1.18	1.18	0.41	10.62	-19%	-21%
Energy Efficient Appliances & Devices	14.59	15.40	0.88	34.77	8.44	10.13	0.84	31.03	2.78	1.70	0.55	4.37	2.78	2.34	0.75	5.87	0%	38%
Energy Efficient Lighting	2.01	2.70	0.71	6.42	1.99	2.96	0.63	7.09	1.92	3.24	0.58	9.47	2.00	3.08	0.59	8.82	4%	-5%
Residential Smart $aver (Home Energy Improvement)	1.60	0.97	0.69	1.66	0.57	0.40	0.33	1.39	1.01	0.49	0.43	1.38	1.37	0.66	0.58	1.41	36%	35%
Multi-Family	2.65	2.65	0.54	1.66	2.64	2.65	0.58	20.70	2.59	2.85	0.57	10.49	2.80	2.87	0.56	10.64	8%	1%
Neighborhood Energy Saver	0.49	0.49	0.31	1.66	0.87	0.90	0.49	2.51	0.85	0.90	0.48	2.61	1.08	1.08	0.61	2.56	28%	21%
Residential Energy Assessments	2.15	2.19	0.56	1.66	2.03	1.96	0.54	30.63	2.29	2.21	0.56	31.28	2.26	2.19	0.57	33.81	-1%	-1%
Residential New Construction	1.55	4.93	1.30	1.66	1.31	1.38	0.58	3.40	1.35	1.46	0.58	3.48	1.81	2.05	0.76	3.78	34%	40%
My Home Energy Report	1.01	1.01	0.43	1.66	1.61	1.61	0.65	-	1.64	1.64	0.64	-	2.69	2.69	0.77	-	64%	64%
EnergyWise Home	5.27	15.93	5.27	1.66	1.96	5.83	1.96	-	3.77	26.74	3.77	-	1.96	2.96	1.96	-	-48%	-89%
Residential Total	**2.56**	**3.68**	**1.11**	1.66	**1.76**	**1.95**	**0.68**	**5.95**	**1.77**	**1.69**	**0.60**	**5.22**	**1.91**	**1.92**	**0.68**	**5.39**	8%	14%
Non-Residential Programs																		
Energy Efficient Lighting	4.03	2.03	0.86	4.04	3.93	1.92	0.88	3.69	4.31	7.27	1.30	9.47	4.48	6.92	1.31	8.82	4%	-5%
Smart $aver Performance (Custom)[1]	2.61	1.17	0.94	2.19	3.16	1.52	0.89	-	2.89	1.68	0.87	3.26	2.98	1.39	1.15	2.02	-	-
Smart $aver Performance (Prescriptive)[1]													2.22	1.35	0.59	3.73	-	-
Smart $aver Performance Incentive	4.05	0.99	1.09	1.54	2.83	1.09	1.00	1.79	2.80	1.11	1.00	1.83	4.19	1.42	1.24	1.84	50%	28%
Small Business Energy Saver	2.51	1.55	0.86	2.85	2.01	1.24	0.76	2.50	2.48	1.46	0.85	2.76	1.95	1.17	0.71	2.67	-21%	-20%
EnergyWise ® for Business	0.27	0.46	0.27	-	0.27	0.52	0.27	-	0.28	0.81	0.28	-	1.19	1.89	1.16	67.03	325%	133%
Commercial Industrial Governmental Demand Response	1.84	28.03	1.84	-	1.77	29.70	1.77	-	2.11	26.31	2.11	-	3.99	67.34	3.99	-	89%	156%
Non-Residential Total	**2.59**	**1.77**	**0.92**	**3.21**	**2.41**	**1.49**	**0.86**	**2.72**	**2.48**	**1.66**	**0.86**	**3.18**	**2.41**	**1.49**	**0.81**	**3.08**	-3%	-10%
Overall Portfolio total	**2.57**	**2.51**	**1.02**	**4.52**	**2.01**	**1.71**	**0.75**	**3.90**	**2.07**	**1.68**	**0.71**	**4.09**	**2.10**	**1.71**	**0.73**	**4.07**	2%	2%

[1] **Similar to what DEC has done, DEP is combining the Performance Custom and Performance Prescriptive programs due to their similarities in participants and renaming them Non-Residential Smart Saver (formerly known as EE for Business)**

Duke Energy Progress, LLC
Comparison of Actual Cost-Effectiveness Scores to Previous DSM/EE Riders

Public Staff
Williamson Exhibit 2
E-2, Sub 1294

	Evans Exhibit 7 in Sub 1174 Vintage 2019				Evans Exhibit 7 in Sub 1206 Vintage 2020				Evans Exhibit 7 in Sub 1252 Vintage 2021			
Program	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT
Residential Programs												
Energy Education Program for Schools	1.39	1.37	0.48	11.58	1.06	1.04	0.27	13.11	0.91	0.90	0.26	13.20
Energy Efficient Appliances & Devices	4.73	4.61	0.79	12.69	2.85	2.65	0.43	10.82	4.22	3.16	0.53	7.49
Energy Efficient Lighting (Res and Non-Res)	2.63	3.78	0.70	8.52	3.35	4.07	0.50	9.65	2.33	3.66	0.42	12.24
Residential Smart $aver (Home Energy Improvement)	0.84	0.63	0.44	1.78	0.84	0.63	0.35	1.78	0.61	0.44	0.27	1.56
Multi-Family	2.77	2.70	0.56	21.75	1.56	1.58	0.35	21.54	1.78	1.45	0.52	10.70
Neighborhood Energy Saver	0.86	0.82	0.47	2.68	0.49	0.49	0.31	2.47	0.39	0.38	0.21	3.08
Residential Energy Assessments	2.06	2.03	0.54	38.16	1.87	1.88	0.38	56.26	1.40	1.37	0.35	31.64
Residential New Construction	1.28	1.42	0.54	3.96	1.21	1.44	0.39	4.22	1.11	1.26	0.40	3.70
Save Energy and Water Kit												
Residential Home Advantage												
My Home Energy Report	1.85	1.85	0.66	-	1.46	1.46	0.43	-	2.26	2.26	0.59	-
EnergyWise Home	9.17	281.08	9.17	-	7.94	7.94	7.94	-	0.36	0.36	0.36	
Residential Total	**2.65**	**3.13**	**1.11**	**7.84**	**1.77**	**1.84**	**0.47**	**7.42**	**1.39**	**1.44**	**0.44**	**6.03**
Non-Residential Programs												
Business Energy Reports												
Smart$aver EE Products and Assessment (formally EE for Business)												
Energy Efficient Lighting												
Smart $aver Performance (Custom)[1]	3.48	1.60	0.99	2.78	2.70	1.55	0.56	3.42	2.08	1.34	0.54	3.16
Smart $aver Performance (Prescriptive)[1]	4.00	2.29	0.90	4.33	3.63	2.00	0.58	3.77	2.78	1.56	0.54	3.15
Smart $aver Performance Incentive	2.27	0.98	0.75	2.37	3.21	2.03	0.47	5.07	1.67	1.24	0.52	3.30
Small Business Energy Saver	2.39	1.48	0.85	2.78	2.22	1.41	0.59	2.57	1.76	1.19	0.55	2.38
EnergyWise ® for Business	0.38	0.60	0.30	17.15	0.36	0.66	0.27	24.28	0.34	0.88	0.32	140.63
Commercial Industrial Governmental Demand Response	2.43	7.73	2.43	-	2.19	26.91	2.19	-	2.11	3.78	2.11	-
Non-Residential Total	**2.87**	**1.88**	**0.91**	**3.57**	**2.70**	**1.81**	**0.59**	**3.53**	**2.15**	**1.62**	**0.64**	**3.09**
Overall Portfolio total	**2.71**	**2.61**	**1.03**	**4.91**	**2.05**	**1.83**	**0.52**	**4.89**	**1.67**	**1.52**	**0.54**	**4.10**

[1] Similar to what DEC has done, DEP is combining the Performance Custom and Performance Prescriptive programs due to their similarities in participants and renaming them Non-Residential Smart Saver (formerly known as EE for Business)