PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Tuesday, June 7, 2022

TIME: 12:11 p.m. - 2:05 p.m.

DOCKET NO: E-7, Sub 1265

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding

Chair Charlotte A. Mitchell

Commissioner Daniel G. Clodfelter

Commissioner Kimberly W. Duffley

Commissioner Jeffrey A. Hughes

Commissioner Floyd B. McKissick, Jr.

Commissioner Karen M. Kemerait

IN THE MATTER OF:

Application of Duke Energy Carolinas, LLC, for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. § 62-133.9 and Commission Rule R8-69

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T A B L E O F C O N T E N T S

E X A M I N A T I O N S

T A B L E O F C O N T E N T S

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E X H I B I T S

P R O C E E D I N G S

COMMISSIONER BROWN-BLAND: Good afternoon. Let's go on the record. I'm Commissioner ToNola D. Brown-Bland with the North Carolina Utilities Commission, presiding Commissioner for this hearing. And with me this afternoon are Chair Charlotte A. Mitchell, and Commissioners Daniel G. Clodfelter, Kimberly W. Duffley, Jeffrey A. Hughes, Floyd B. McKissick, Jr., and Karen M. Kemerait.

I now call for hearing Docket No. E-7, Sub 1265, in the Matter of Application of Duke Energy Carolinas, LLC for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Riders Pursuant to G.S. 62-133.9 and Commission Rule R8-69. G.S. 62-133.9 establishes the procedure for cost recovery of Demand-side Management, hereafter DSM and Energy Efficiency, hereafter EE expenditures, and G.S. 62-133.9(d) provides for an annual DSM/EE Rider for electric public utilities to recover all reasonable and prudent costs incurred and appropriate incentives for adoption and implementation of new DSM and EE measures.

On December 17th, 2021, the Commission issued an Order requiring that DEC file with its 2022

DSM/EE Rider Application the responses to questions that were attached to that Order.

On March 1st, 2022, Duke Energy Carolinas, LLC, hereafter DEC or Applicant, filed its Application for Approval of DSM and EE Cost Recovery Rider along with the direct testimony and exhibits of Robert P. Evans and Shannon R. Listebarger in support of the Application.

On March 14th, 2022, the Commission issued an Order Scheduling this matter for a hearing on Tuesday, June 7th, 2022, to be held immediately after the hearings on the Company's CPRE, Fuel and REPS Riders, and the Order scheduled those hearings to begin at 10:00 a.m. in the Commission Hearing Room here in the Dobbs Building in Raleigh, North Carolina.

Based on their timely petitions to intervene, the following parties were allowed to intervene by Order of the Commission: North Carolina Sustainable Energy Association, NCSEA; Carolina Utility Customers Association, Inc., CUCA; Carolina Industrial Group for Fair Utility Rates III, CIGFUR III, and jointly Southern Alliance for Clean Energy, SACE; North Carolina Housing Coalition, and the North Carolina Justice Center. Jointly or collectively, I'll refer to SACE, S-A-C-E, et al.

The intervention and participation of the Public Staff is recognized pursuant to G.S. 62-15(d) and Commission Rule R1-19(e).

On March 16th, 2022, DEC filed the supplemental testimony and exhibits of witness Listebarger to present updates and corrections to the calculations shown on Listebarger Exhibit Numbers 1, 2, and 3. The supplemental exhibits also included and renamed several exhibits that were not updated, those being Listebarger's Supplemental Exhibit Numbers 4, 5, and 6, and Evans Supplemental Exhibits 1, 2, 3, 4, 7, 8 and 10.

On May 17th, 2022, the Public Staff filed the testimony and exhibits of Shawn C. Dorgan (sic) and David M. Williamson. On the same date, SACE, et al., jointly filed the testimony and exhibits of Forest Bradley-Wright.

May 19th, 2022, DEC filed a motion stating that Listebarger Supplemental Exhibit Numbers 4, 5, and 6, and Evans Supplemental Exhibit Numbers 1, 2, 3, 4, 7, and 8 -- 4, 7, 8, and 10, all collectively, hereafter referred to as inadvertently-filed exhibits, should not have been included in the supplemental testimony and exhibits of witness Listebarger, but were filed in error, and DEC requested to be allowed to withdraw the inadvertently-filed exhibits so that the record would be clear on which exhibits were updated.

On May 24th, 2022, the Commission issued an Order allowing DEC to withdraw the inadvertently-filed exhibits.

On May 26, 2022, DEC filed the rebuttal testimony of witness Jean P. Williams and witness Lynda S. Powers.

On May 31st, 2022, the Commission issued an Order requiring additional testimony of Duke Energy Carolinas, LLC.

On June 1st, 2022, DEC filed a letter advising that Karen K. Holbrook intended to adopt the direct testimony of witness Evans because witness Evans had retired. In addition, DEC requested that witness Holbrook, Powers, and Williams be allowed to appear as a panel to respond to the Commission's questions in the Order on additional testimony.

On June 2nd, 2022, DEC, SACE, et al., and the Public Staff, filed a joint motion requesting that witnesses that Listebarger, Williamson, Dorgan, and Bradley-Wright be excused from appearing at today's hearing, and that the prefiled testimony and exhibits of said witnesses be received into evidence and made part of the record.

On June 3rd, 2022, the Commission issued an Order allowing witness Karen K. Holbrook to adopt the prefiled testimony and exhibits of witness Evans, allowing DEC's witnesses Holbrook, Powers, and Williams to testify as a panel.

Also on June 3rd, the Commission issued an Order granting the motion to excuse Public Staff witness Dorgan and SACE, et al., witness Bradley-Wright, but denying the motion to excuse witnesses -- DEC witness Listebarger and Public Staff witness Williams.

Also on June 3rd, 2022, DEC filed the Affidavits of Publication of public notice. And on June 6, 2022, DEC filed prefiled panel Cross-examination Exhibit 1 in response to the Commission's Order on additional testimony.

In compliance with the requirements of State Government Ethics Act, I remind the Members of our duty to avoid conflicts of interest and inquire, at this time, whether any member has any known conflict of interest with respect to the matter now before us.

(No response)

COMMISSIONER BROWN-BLAND: The record will reflect that no conflicts were identified. And I will now call for appearances of counsel, beginning with the Applicant.

MS. FENTRESS: Good morning, presiding Commissioner Brown-Bland and Commissioners. My name is Kendrick Fentress. I'm appearing today on behalf of Duke Energy Carolinas, and with me is Robert Kaylor.

COMMISSIONER BROWN-BLAND: Good afternoon. And I call for appearance of counsel on the other side.

MR. LEDFORD: Good morning, Commissioner Brown-Bland. Peter Ledford on behalf of the North Carolina Sustainable Energy Association.

MR. SCHAUER: Good morning. Craig Schauer on behalf of the Carolina Utility Customers Association.

MS. CRESS: Good afternoon, presiding Commissioner Brown-Bland, Chair Mitchell, members of the Commission, Christina Cress with the Law Firm of Bailey & Dixon, appearing on behalf of CIGFUR III.

MR. NEAL: Good morning, presiding Commissioner Brown-Bland, Chair Mitchell, the Commissioners, I'm David Neal of the Southern Environmental Law Center, appearing on behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and the Southern Alliance for Clean Energy.

MS. EDMONDSON: Good afternoon. Lucy Edmondson with the Public Staff, on behalf of the Using and Consuming Public.

COMMISSIONER BROWN-BLAND: Thank you-all for your appearances. And, Ms. Edmondson, I'll ask you, are there any public witnesses that you've identified who wish to give testimony?

MS. EDMONDSON: I have not.

COMMISSIONER BROWN-BLAND: Out of an abundance of caution, I'll just ask, is there anyone out in the audience who wishes to come forward with public witness testimony about this docket?

(No response)

COMMISSIONER BROWN-BLAND: The record will reflect that no one came forward. All right. Are there any preliminary matters for us to address?

MS. FENTRESS: Presiding Chair Brown-Bland, we have passed out summaries for these witnesses.

However, I do note that the parties have waived cross-examination. In light of that, we would be willing to waive the summaries into the record, if it is acceptable to the Commission.

COMMISSIONER BROWN-BLAND: It is acceptable to the Commission that we will receive those -- will receive your prepared summaries into the record without having them read from the stand.

MS. FENTRESS: Thank you.

(WHEREUPON, the summaries of Shannon R. Listebarger, Jean P. Williams, Lynda S. Powers, and Karen K. Holbrook are copied into the record as read from the witness stand.)

SUMMARY OF DIRECT AND SUPPLEMENTAL TESTIMONY OF

SHANNON LISTEBARGER

My direct testimony explains and supports the calculation of the Company's proposed DSM/EE cost recovery rider (Rider 14), including prospective and Experience Modification Factor components, and provides information required by Commission Rule R8-69.

I describe the structure of Rider 14 and explain how the revenue requirements – including program costs, net lost revenues, and performance portfolio incentive – were determined. I also describe how DSM- and EE-related costs are allocated to the North Carolina retail jurisdiction, as well as to each rate class. Finally, I outline how the DSM/EE billing factors are calculated and provide the proposed rates.

My supplemental testimony presents revised rates reflecting necessary updates and corrections to the calculation of the interest or return due on over- and under- collections. The overall impact to the revenue requirement results in an increase of $248,707, with corresponding increases to the billing factors of $0.0002 for residential customers and $0.0015 for non-residential customers. The Company proposes that the rates filed in the original application be the rates billed to customers beginning January 1, 2023 and that the revised rate impacts be incorporated as a true-up in the Company's next DSM/EE rider application to be filed on February 28, 2023.

This concludes the summary of my testimony.

SUMMARY OF REBUTTAL TESTIMONY OF JEAN P. WILLIAMS

My rebuttal testimony responds to the direct testimony of David Williamson of the Public Staff concerning customers' usage of the Company's Advanced Metering Infrastructure ("AMI") data and its potential impact on the My Home Energy Report ("MyHER") evaluation, measurement and verification ("EM&V") processes.

The Company's evaluation of savings attributable to the MyHER program is conducted by a third-party evaluator. To evaluate the savings, the evaluator randomly assigns eligible customers to either a treatment group or a control group. The customer group that receives the MyHER reports is deemed the treatment group, while the non-participating customers are deemed the "control" group. Both the treatment group customers and the control group customers have access to their AMI data. Therefore, the Company disagrees with witness Williamson's assertion that the EM&V process should distinguish between savings arising from MyHER and savings arising from availability of AMI data. Because customers in both the MyHER treatment group and control group have access to AMI data, any reductions in energy consumption that customers may achieve through AMI engagement in the treatment group effectively cancel out similar reductions seen in the control group.

The Company agrees with witness Williamson that additional research on how AMI data influences customer behavior may be useful in both the treatment and control groups. However, this additional research should be conducted outside of the MyHER EM&V process because the evaluator's randomized control trial inherently controls for AMI usage. The Company is committed to

SUMMARY OF REBUTTAL TESTIMONY OF JEAN P. WILLIAMS

exploring ways in which this independent research can be conducted to determine the impacts from customers having the ability to instantaneously access slightly delayed interval data.

The Company agrees with witness Williamson's statement that dynamic pricing tariffs on their own should not be considered a program in the Company's DSM/EE portfolio. To date, the Company has not requested approval for the current dynamic pricing rates to be recovered through the DSM/EE portfolio; however, EM&V may indicate that such pricing tariffs do impact customers' energy consumption or demand profiles in a way that would make such recovery appropriate in the future.

This concludes the summary of my testimony.

SUMMARY OF REBUTTAL TESTIMONY OF LYNDA S. POWERS

My rebuttal testimony responds to portions of the testimony of Forest Bradley-Wright, filed on behalf of the North Carolina Justice Center, the North Carolina Housing Coalition, and the Southern Alliance for Clean Energy.

I disagree with witness Bradley-Wright's assertion that the Company has not acted on program suggestions appropriately. The Company is eager to find new ways to encourage customers' energy efficiency efforts through the exchange of ideas within the Collaborative. Transforming those ideas into cost-effective, scalable, commercially viable programs, however, is complex. Programs must comply with the Commission-approved Cost Recovery Mechanism, which includes certain cost-effectiveness thresholds and required characteristics (such as commercially available technology). My testimony shows that the Company took meaningful actions toward implementing each of the seven program ideas submitted by the Collaborative and cited in witness Bradley-Wright's testimony. Even if recommendations were not feasible from an implementation standpoint, the continued dialogue with Collaborative members assures that the Company remains aware of potential opportunities to enhance and provide cost-effective programs for DEC customers.

I also address witness Bradley-Wright's concerns related to his request to quantify and monetize carbon savings within the demand-side management and energy efficiency programs and the one percent savings target. With respect to quantifying carbon savings, the Company does not agree with a requirement at this time to report full lifetime carbon savings as a component of its future cost recovery rider proceedings. Once the Commission approves a Carbon Plan and a methodology for determining carbon reductions associated with EE/DSM programs, the Company will share its proposed reporting method and the projected impacts on the determination of cost effectiveness for the portfolio of programs offered.

With respect to the one percent savings target, efforts are well underway to develop strategies to support achieving that goal. Witness Bradley-Wright himself volunteered to lead the working group within the Collaborative to develop a specific plan for closing the gap. The Company is looking forward to hearing the working group's meaningful recommendations.

This concludes the summary of my testimony.

SUMMARY OF DIRECT TESTIMONY

OF KAREN K. HOLBROOK

I am adopting the direct testimony of Robert P. Evans, which supports DEC's Application for approval of its demand-side management and energy efficiency ("DSM/EE") cost recovery rider for 2023, encompassing the Company's currently effective cost recovery and incentive mechanism and its portfolio of programs approved by the Commission. My testimony includes a discussion of items the Commission specifically directed the Company to address in this proceeding, an overview of the Commission's Rule R8-69 filing requirements, a synopsis of the DSM/EE programs included in this filing, a discussion of program results and an explanation of how these results have affected DSM/EE rate calculations, information on the Company's Evaluation, Measurement & Verification, or "EM&V" activities, an overview of the calculation of the Company's Portfolio Performance Incentive, or "PPI," information pertaining to the Collaborative, information requested by the Commission about the Find It Duke ("FID") referral program by historically disadvantaged businesses; and a discussion relating to the Company's Reserve Margin Adjustment Factor ("RMAF").

First I discuss actions that the Commission directed in the last cost recovery proceeding, which includes filing workpapers showing the FID referral channel costs and revenues excluded from the EE Rider and including information about recruitment and participation in FID by historically disadvantaged businesses. The Company and the Public Staff also worked together to develop Mechanism language concerning the RMAF for the Commission's consideration and approval.

SUMMARY OF DIRECT TESTIMONY

OF KAREN K. HOLBROOK

I include a comprehensive list of the DSM and EE programs in the Company's current portfolio. During Vintage 2021, DEC's DSM/EE programs delivered over 637 million kilowatt-hours of energy savings, over 947 megawatts of summer peak capacity savings and over 442 MW of winter peak capacity savings, which produced a net present value of avoided cost savings of over $292 million.

DEC's cost recovery mechanism allows it to (1) recover reasonable and prudent costs incurred for adopting and implementing DSM and EE measures; (2) recover net lost revenues incurred for up to 36 months of a measure's life for EE programs; and (3) earn a PPI based on the sharing of a percentage of the net savings achieved through DEC's DSM/EE programs on an annual basis. Starting in 2022, the shared savings percentage was lowered to 10.6%. The Experience Modification Factor in the rider accounts for changes to actual participation relative to the forecasted participation levels utilized in prior DSM/EE riders and also reflects the application of EM&V results.

Updates to underlying assumptions that materially impact DEC's 2023 portfolio projection are related to EM&V-related impacts and changes in avoided costs. EM&V results were updated to reflect the savings impacts for those programs for which DEC received EM&V reports after it prepared its application in last year's DSM/EE proceeding, which resulted in changes to the projected avoided cost benefits associated with projected participation.

SUMMARY OF DIRECT TESTIMONY

OF KAREN K. HOLBROOK

I explain that the deployment of AMI and Customer Connect has not had any direct impact on the implementation of DSM/EE programs and rider calculations. However, the use of AMI has an indirect, positive impact on the EM&V of programs used in rider calculations. At this time, DEC has not identified any ways, beyond that discussed above, to leverage AMI and Customer Connect to materially increase the effectiveness or materially reduce the cost of its DSM/EE programs. Deployment of AMI and Customer Connect may produce cost savings associated with EM&V activities in the future; however, DEC cannot project the cost savings or increased cost effectiveness at this time.

DEC is making progress on expanding the use of AMI in program evaluations. For demand response evaluations, quarterly or semi-hourly AMI data is the primary data utilized for analysis. For EE savings, evaluators have begun to incorporate hourly and/or daily AMI interval data into the analysis, which increases the analytical capabilities to estimate household-level energy and demand savings.

As with other DEC rate schedules, customers using the new dynamic pricing rates will be eligible to participate in DSM/EE programs and will be treated the same as other participants in DSM/EE programs. At this time DEC has not identified how its new dynamic pricing tariffs may impact existing DSM/EE program marketing, implementation, cost-effectiveness calculations and evaluation. It is expected that those impacts will be reflected in future evaluation, measurement and verification reports.

SUMMARY OF DIRECT TESTIMONY

OF KAREN K. HOLBROOK

Also, the Company continues to evaluate how the carbon reduction associated with EE program kWh savings will be reported as part of future annual DSM/EE Rider filings. To accurately reflect the impacts of DSM/EE programs in future annual Rider filings, the Company is currently pursuing the development of reasonable estimates of the carbon intensity of system generation on an hourly basis.

This concludes my summary.

MS. FENTRESS: And with that, we are prepared to call up our witnesses and introduce them.

COMMISSIONER BROWN-BLAND: All right. Go ahead.

MS. FENTRESS: We would call witnesses Holbrook, Powers, Williams, and Listebarger to the stand, please.

COMMISSIONER BROWN-BLAND: If everyone would come around to where you can reach the bible, and get your left hands on the bible, please.

SHANNON R. LISTEBARGER;
JEAN P. WILLIAMS;
LYNDA S. POWERS;
KAREN K. HOLBROOK;
having been duly sworn,
testified as follows:

COMMISSIONER BROWN-BLAND: You may be seated.

DIRECT-EXAMINATION BY MS. FENTRESS:

Q Ms. Listebarger, I'm going to start with you.
A Okay.
Q Can you please state your name, for the record.
A Yes. Shannon Listebarger.
Q And what is your business address?

A 526 South Church Street, Charlotte, North Carolina.

Q And what is your position with Duke Energy?

A Rates Manager.

Q And did you cause to be prefiled direct testimony in this case with some 20 pages and seven exhibits?

A Yes.

Q And do you have any changes or corrections to your prefiled direct testimony?

A No.

Q So if I were to ask you the same questions as written in your prefiled direct testimony here today, from this stand, would your answers be the same?

A Yes.

Q And Ms. Listebarger, did you also cause to be prefiled some three pages of supplemental testimony and three updated exhibits on May 16, 2022?

A Yes.

Q And do you have any changes or corrections to your prefiled supplemental testimony?

A No.

Q So if I were to ask you the same questions as written in your prefiled supplemental testimony today, from the stand, would your answers be the same?
A Yes.
MS. FENTRESS: I will move all the testimony and exhibits after introducing them, if that's okay. All right. I'll move to Ms. Williams.
BY MS. FENTRESS:
Q Ms. Williams, can you please state your name, for the record.
A Jean P. Williams.
Q And what is your business address?
A 411 South Wilmington Street, Raleigh, North Carolina.
Q And what is your position with Duke Energy?
A I am the Manager of the Valuation Measurement and Verification for Duke Energy.
Q And did you cause to be prefiled rebuttal testimony in this case of some six pages on May 26, 2022?
A Yes.
Q And do you have any changes or corrections to your prefiled rebuttal testimony?

A Yes, I do. Turning to page 3 line 3 of my prefiled rebuttal testimony, the second sentence beginning with the words Mr. Robert P. Evans, and concluding at line 5, should be struck. I am not adopting Mr. Evans' prefiled direct testimony.

Q With that correction to your prefiled rebuttal testimony, if I were to ask you the same questions as written in your prefiled direct testimony here today, would your answers be the same?

A Yes.

Q Ms. Powers, please state your name, for the record.

A My name is Lynda S. Powers.

Q And what is your business address?

A 400 South Tryon Street, Charlotte, North Carolina.

Q And what is your position with Duke Energy.

A I'm the Senior Strategy and Collaboration Manager.

Q And did you cause to be prefiled rebuttal testimony in this case of some 15 pages on May 26, 2022?

A Yes, I did.

Q And do you have any changes or corrections to your prefiled rebuttal testimony?
A No I don't.
Q So if I were to ask you the same questions as written in your prefiled rebuttal testimony today, here from the stand, would your answers be the same?
A Yes, they would.
Q Now, Ms. Holbrook. Can you please state your name, for the record.
A Karen K. Holbrook.
Q And what is your business address?
A It's 400 South Tryon Street in Charlotte, North Carolina.
Q And what is your position with Duke Energy?
A I am Director of both Portfolio Regulatory Strategy and Support in our Enablement Strategy Group.
Q Ms. Holbrook, can you briefly state your educational background and experience?
A I graduated from Marshall University in 1986 with a Bachelor of Science degree in accounting. Passed the Certified Public Accounting exam in 1988. Started my career in 1986 as a general

accountant for Kanawha County Parks and Recreation in Charleston, West Virginia and was promoted to comptroller a couple of years later.

I left in 1989 to join Columbia Gas Transmission, a subsidiary of Columbia Energy Group. I remained with Columbia Gas until 1999. I worked in a variety of financial areas. I joined Duke Energy in 1999 and worked in a variety of financial areas, including financial planning, financial analysis, corporate finance, risk management, financial engineering, and I served my -- assumed my current role as Director of Program Performance in September of 2010, getting to know this area and adopting additional responsibilities up until this time.

Q Ms. Holbrook, are you adopting the direct testimony of Robert P. Evans that was prefiled with this Commission on March 1st?

A Yes, I am.

Q And does this prefiled testimony include some 36 pages, 18 exhibits, and Exhibits A through F?

A Yes.

Q Do you have any changes or corrections to make to that testimony?

A I do not.
Q So if I were to ask you the same questions as written in this prefiled direct testimony here today, would your answers be the same?
A Yes, they would.

MS. FENTRESS: Presiding Chair Brown-Bland, I would move Ms. Holbrook's prefiled direct testimony be copied into the record as if given orally from the stand, and her Exhibits 1 through 18 and A through F be premarked. And that Ms. Listebarger's direct and supplemental testimony be copied into the record as if given from the stand, and her Exhibits 1 through 7 and Supplemental Exhibits 1 through 3 be premarked. And that the rebuttal testimony of Ms. Williams and Ms. Powers be copied into the record as if given orally from the stand.

COMMISSIONER BROWN-BLAND: All right. There being no objection, that motion will be allowed, and the prefiled direct testimony and supplemental testimony of witness Listebarger will be received into evidence, word for word, as if given from the witness stand. The exhibits filed by Ms. Listebarger and noted by Ms. Fentress will be identified as they were when prefiled, as they were marked and prefiled.

The testimony now, witness Holbrook, will be received into the evidence, and the exhibits that were prefiled as part of her testimony will be identified as they were marked when prefiled, and the rebuttal testimony of witnesses Jean P. Williams and Lynda S. Powers will be received into evidence at this time.

(WHEREUPON, Listebarger Direct Exhibits 1-7, Listebarger Supplemental Exhibits 1-6, are marked for identification as prefiled.)

(WHEREUPON, the prefiled direct and supplemental testimony of SHANNON R. LISTEBARGER is copied into the record as if given orally from the stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1265

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
Application of Duke Energy Carolinas, LLC	)	**DIRECT TESTIMONY OF**
for Approval of Demand-Side Management	)	**SHANNON R. LISTEBARGER**
and Energy Efficiency Cost Recovery Rider	)	**FOR**
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	**DUKE ENERGY CAROLINAS,**
Commission Rule R8-69	)	**LLC**

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Shannon R. Listebarger, and my business address is 526 South Church Street, Charlotte, North Carolina, 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Rates Manager for Duke Energy Carolinas, LLC ("DEC" or the "Company" supporting both DEC and Duke Energy Progress, LLC ("DEP").

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I have a Bachelor of Business Administration from DeVry University and a Master of Business Administration from Keller Graduate School of Management. I began my career in 2001 with American Electric Power. During my time there I held a variety of positions in Corporate Accounting, Regulatory and Financial Forecasting. In 2018, I began working with Duke Energy as a lead load forecast analyst. I joined the Rates Department in 2020 as Manager, Rates and Regulatory Strategy.

Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES FOR DEC?

A. I am responsible for providing regulatory support and guidance on DEC's demand-side management ("DSM") and energy efficiency ("EE") cost recovery process.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes. I have provided testimony in support of DEC's Rider 13 application for approval of its DSM/EE cost recovery rider in Docket No. E-7, Sub 1249 and DEP's Rider 12 and Rider 13 applications for approval of its DSM/EE cost recovery riders.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to explain and support DEC's proposed DSM/EE cost recovery rider (Rider 14), including prospective and Experience Modification Factor ("EMF") components, and provide information required by Commission Rule R8-69.

Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. Listebarger Exhibit 1 summarizes the individual rider components for which DEC requests approval in this filing. Listebarger Exhibit 2 shows the calculation of revenue requirements for each vintage, with separate calculations for non-residential DSM and EE programs within each vintage. Listebarger Exhibit 3 presents the return calculations for Vintages 2018, 2019, 2020 and 2021. Listebarger Exhibit 4 shows the actual and estimated prospective amounts collected from customers via Riders 9-13 pertaining to Vintages 2018 through 2022. Listebarger Exhibit 5 provides the calculation of the allocation factors used to allocate system DSM and EE costs to DEC's North Carolina retail jurisdiction. Listebarger Exhibit 6 presents the forecasted sales for the rate period (2023) and the estimated sales related to customers that have opted out of various vintages. These amounts are used to determine the forecasted sales to which the Rider 14 amounts will apply. Listebarger Exhibit 7 is the proposed tariff sheet for Rider 14.

Q. WERE LISTEBARGER EXHIBITS 1-7 PREPARED BY YOU OR AT YOUR DIRECTION AND SUPERVISION?

A. Yes.

II. <u>GENERAL STRUCTURE OF RIDERS</u>

Q. PLEASE DESCRIBE THE STRUCTURE OF RIDER 14.

A. Rider 14 was calculated in accordance with the Company's currently effective cost recovery and incentive mechanism ("Mechanism") and portfolio of programs approved in the Commission's *Order Approving DSM/EE Programs and Stipulation of Settlement*, issued on October 29, 2013 ("the Stipulation"), in Docket No. E-7, Sub 1032 and the prospective Mechanism approved in the Commission's *Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms,* issued on October 20, 2020, in Docket Nos. E-2, Sub 931 and E-7, Sub 1032 ("2020 Sub 1032 Order").[1]

The approved cost recovery mechanism is designed to allow DEC to collect revenue equal to its incurred program costs[2] for a rate period plus a Portfolio Performance Incentive ("PPI") based on shared savings achieved by DEC's DSM/EE programs, and to recover net lost revenues for EE programs

[1] The Stipulation is still currently in effect; however, the new Mechanism applies prospectively to costs projected in 2022. Therefore, this cost recovery proceeding falls under the Commission's orders approving both Mechanisms in Docket No. E-7, Sub 1032 (Sub 1032 Orders).

[2] Program costs are defined under Rule R8-68(b)(1) as all reasonable and prudent expenses expected to be incurred by the electric public utility, during a rate period, for the purpose of adopting and implementing new DSM and EE measures previously approved pursuant to Rule R8-68.

only. In addition, per the 2020 Sub 1032 Order, beginning in 2022 the Income-Qualified EE and Weatherization programs are eligible to receive a Program Return Incentive ("PRI") based on shared savings achieved by these programs. Witness Evans's testimony provides additional information on this matter.

The Company is allowed to recover net lost revenues associated with a particular vintage of an EE measure for the lesser of 36 months or the life of the measure and provided that the recovery of net lost revenues shall cease upon the implementation of new rates in a general rate case to the extent that the new rates are set to recover net lost revenues.

The Company's cost recovery mechanism employs a vintage year concept based on the calendar year.[3] In each of its annual rider filings, DEC performs an annual true-up process for the prior calendar year vintages. The true-up will reflect actual participation and verified Evaluation, Measurement and Verification ("EM&V") results for completed vintages, applied in the same manner as agreed upon by DEC, the Southern Alliance for Clean Energy, and the Public Staff, and approved by the Commission in its *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice* issued on November 8, 2011, in Docket No. E-7, Sub 979 ("EM&V Agreement"). In accordance with the 2020 Sub 1032 Order, DEC continues to apply EM&V in accordance with the EM&V Agreement.

The Company has implemented deferral accounting for over- and under-recoveries of costs that are eligible for recovery through the annual

[3] Each vintage is referred to by the calendar year of its respective rate period (*e.g.*, Vintage 2020).

DSM/EE rider. The balance in the deferral account(s), net of deferred income taxes, may accrue a return at the net-of-tax rate of return rate approved in DEC's then most recent general rate case. The methodology used for the calculation of interest shall be the same as that typically utilized for DEC's Existing DSM Program rider proceedings. Pursuant to Commission Rule R8-69(c)(3), DEC will not accrue a return on net lost revenues or the PPI. Listebarger Exhibit 3, pages 1 through 16, shows the calculation performed as part of the true-up of Vintage 2018, Vintage 2019, Vintage 2020, and Vintage 2021.

The Company expects that most EM&V will be available in the time frame needed to true-up each vintage in the following calendar year. If any EM&V results for a vintage are not available in time for inclusion in DEC's annual rider filing, however, then the Company will make an appropriate adjustment in the next annual filing.

DEC calculates one integrated (prospective) DSM/EE rider and one integrated DSM/EE EMF rider for the residential class, to be effective each rate period. The integrated residential DSM/EE EMF rider includes all true-ups for each applicable vintage year. Given that qualifying non-residential customers can opt out of DSM and/or EE programs, DEC calculates separate DSM and EE billing factors for the non-residential class. Additionally, the non-residential DSM and EE EMF billing factors are determined separately for each applicable vintage year, so that the factors can be appropriately charged to non-residential customers based on their opt-in/out status and participation for each vintage year.

Q. WHAT ARE THE COMPONENTS OF RIDER 14?

A. The prospective components of Rider 14 include: (1) a prospective Vintage 2023 component designed to collect program costs and the PPI for DEC's 2023 vintage of DSM programs; (2) a prospective Vintage 2023 component to collect program costs, PPI, PRI, and the first year of net lost revenues for DEC's 2023 vintage of EE programs; (3) a prospective Vintage 2022 component designed to collect the second year of estimated net lost revenues for DEC's 2022 vintage of EE programs; (4) a prospective Vintage 2021 component designed to collect the third year of estimated net lost revenues for DEC's 2021 vintage of EE programs; and (5) a prospective Vintage 2020 component designed to collect the fourth year of estimated lost revenues for DEC's 2020 vintage of EE programs. The EMF components of Rider 14 include: (1) a true-up of Vintage 2018 lost revenues, PPI and participation for DSM/EE programs based on additional EM&V results received; (2) a true-up of Vintage 2019 lost revenues, PPI and participation for DSM/EE programs based on additional EM&V results received; (3) a true-up of Vintage 2020 lost revenues, PPI and participation for DSM/EE programs based on additional EM&V results received; and (4) a true-up of Vintage 2021 lost revenues, program costs and PPI for DSM/EE programs.

Q. HOW DOES DEC CALCULATE THE PROPOSED BILLING FACTORS?

A. The billing factor for residential customers is computed by dividing the combined revenue requirements for DSM and EE programs by the forecasted sales for the rate period. For non-residential rates, the billing factors are computed by dividing the revenue requirements for DSM and EE programs separately by forecasted sales for the rate period. The forecasted sales exclude the estimated sales to customers who have elected to opt out of Rider EE. Because non-residential customers are allowed to opt out of DSM and/or EE programs separately in an annual election, non-residential billing factors are computed separately for each vintage.

III. COST ALLOCATION METHODOLOGY

Q. HOW DOES DEC ALLOCATE REVENUE REQUIREMENTS TO THE NORTH CAROLINA RETAIL JURISDICTION AND TO THE RESIDENTIAL AND NON-RESIDENTIAL RATE CLASSES?

A. The Company allocates the revenue requirements related to program costs and incentives for EE programs targeted at retail residential customers across North Carolina and South Carolina to its North Carolina retail jurisdiction based on the ratio of North Carolina retail kWh sales (grossed up for line losses) to total retail kWh sales (grossed up for line losses), and then recovers them only from North Carolina residential customers. The revenue requirements related to EE programs targeted at retail non-residential customers across North Carolina and South Carolina are allocated to the North Carolina retail jurisdiction based on the ratio of North Carolina retail kWh sales (grossed up for line losses) to total retail kWh sales (grossed up for line losses), and then recovered from only North Carolina retail non-residential customers. The portion of revenue requirements related to net lost revenues for EE programs is not allocated to the

North Carolina retail jurisdiction, but rather is specifically computed based on the kW and kWh savings of North Carolina retail customers.

For DSM programs, because residential and non-residential programs are similar in nature, the aggregated revenue requirement for all retail DSM programs targeted at both residential and non-residential customers across North Carolina and South Carolina are allocated to the North Carolina retail jurisdiction based on North Carolina's contribution to total retail peak demand. Both residential and non-residential customer classes are allocated a share of total system DSM revenue requirements based on each group's contribution to total retail peak demand.

The allocation factors used in DSM/EE EMF true-up calculations for each vintage are based on DEC's most recently filed Cost of Service studies at the time that the Rider EE filing incorporating the initial true-up for each vintage is made. If there are subsequent true-ups for a vintage, DEC will use the same allocation factors as those used in the original DSM/EE EMF true-up calculations.

IV. UTILITY INCENTIVES AND NET LOST REVENUES

Q. HOW DOES DEC CALCULATE THE PPI AND PRI?

A. Pursuant to the Stipulation, DEC calculates the dollar amount of PPI by multiplying the shared savings achieved by the system portfolio of DSM/EE programs by 11.5% prior to 2022. Pursuant to the related 2020 Sub 1032 and other Sub 1032 orders, starting in 2022, this percentage is lowered to 10.6%. In addition, as discussed above, Income-Qualified EE and Weatherization programs are eligible to receive a PRI.

Company witness Evans further describes the specifics of the PPI and PRI calculations in his testimony. In addition, Evans Exhibit 1, pages 1 through 4, shows the revised PPI for Vintage 2018, Vintage 2019, Vintage 2020, and Vintage 2021, respectively, based on updated EM&V results, and Evans Exhibit 1, page 5, shows the estimated PPI and PRI by program type and customer class for Vintage 2023. The system amount of PPI and PRI is then allocated to North Carolina retail customer classes to derive customer rates.

Q. HOW DOES DEC CALCULATE THE NET LOST REVENUES FOR THE PROSPECTIVE COMPONENTS OF RIDER EE?

A. For the prospective components of Rider EE, net lost revenues are estimated by multiplying the portion of DEC's tariff rates that represent the recovery of fixed costs by the estimated North Carolina retail kW and kWh reductions applicable to EE programs by rate schedule, and reducing this amount by estimated found revenues. The Company calculates the portion of North Carolina retail tariff rates (including certain riders) representing the recovery of fixed costs by deducting the recovery of fuel and variable operation and maintenance ("O&M") costs from its tariff rates. The lost revenues totals for residential and non-residential customers are then reduced by North Carolina retail found revenues computed using the weighted average lost revenue rates for each customer class. The testimony and exhibits of Company witness Evans provide information on the actual and estimated found revenues which offset lost revenues.

Q. HOW DOES DEC CALCULATE THE NET LOST REVENUES FOR THE EMF COMPONENTS OF RIDER EE?

A. For the EMF components of Rider EE, DEC calculates the net lost revenues by multiplying the portion of its tariff rates that represent the recovery of fixed costs by the actual and verified North Carolina retail kW and kWh reductions applicable to EE programs by rate schedule, then reducing this amount by actual found revenues.

V. OPT-OUT PROVISIONS

Q. PLEASE EXPLAIN THE OPT-OUT PROCESS FOR NON-RESIDENTIAL CUSTOMERS.

A. Pursuant to the Commission's *Order Granting Waiver, in Part, and Denying Waiver, in Part* ("Waiver Order") issued April 6, 2010, in Docket No. E-7, Sub 938 and the Sub 1032 Orders, the Company is allowed to permit qualifying non-residential customers[4] to opt out of the DSM and/or EE portion of Rider EE during annual election periods. If a customer opts into a DSM program (or never opted out), the customer is required to participate for three years in the approved DSM programs and rider. If a customer chooses to participate in an EE program (or never opted out), that customer is required to pay the EE-related program costs, shared savings incentive and the net lost revenues for the corresponding vintage of the programs in which it participated. Customers that opt out of DEC's DSM and/or EE programs remain opted-out unless they

[4] Individual commercial customer accounts with annual energy usage of not less than 1,000,000 kWh and any industrial customer account.

choose to opt back in during any of the succeeding annual election periods, which occur from November 1 to December 31 each year, or any of the succeeding annual opt-in periods in March as described below. If a customer participates in any vintage of programs, the customer is subject to all true-up provisions of the approved Rider EE for any vintage in which the customer participates.

DEC provides an additional opportunity for qualifying customers to opt in to DEC's DSM and/or EE programs during the first five business days of March. Customers who choose to begin participating in DEC's EE and DSM programs during the special "opt-in period" during March of each year will be retroactively billed the applicable Rider EE amounts back to January 1 of the vintage year, such that they will pay the appropriate Rider EE amounts for the full rate period.

Q. DOES DEC ADJUST THE RATE FOR NON-RESIDENTIAL CUSTOMERS TO ACCOUNT FOR THE IMPACT OF "OPT-OUT" CUSTOMERS?

A. Yes. The impact of opt-out results is considered in the development of the Rider EE billing rates for non-residential customers. Since the revenue requirements will not be recovered from non-residential customers that opt out of DEC's programs, the forecasted sales used to compute the rate per kWh for non-residential rates exclude sales to customers that have opted out of the vintage to which the rate applies. This adjustment is shown on Listebarger Exhibit 6.

VI. PROSPECTIVE COMPONENTS

Q. WHAT IS THE RATE PERIOD FOR THE PROSPECTIVE COMPONENTS OF RIDER 14?

A. In accordance with the Commission's *Order on Motions for Reconsideration* issued on June 3, 2010, in Docket No. E-7, Sub 938 ("Second Waiver Order") and the 2020 Sub 1032 Order, DEC has calculated the prospective components of Rider 14 using the rate period January 1, 2023 through December 31, 2023.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2020.

A. The Company determines the estimated revenue requirements for Vintage 2020 separately for residential and non-residential customer classes and bases them on the fourth year of net lost revenues for its Vintage 2020 EE programs. The amounts are based on estimated North Carolina retail kW and kWh reductions and DEC's rates approved in its most recent general rate case, which became effective June 1, 2021, adjusted as described above to recover only the fixed cost component.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2021.

A. The Company determines the estimated revenue requirements for Vintage 2021 separately for residential and non-residential customer classes and bases them on the third year of net lost revenues for its Vintage 2021 EE programs. The amounts are based on estimated North Carolina retail kW and kWh reductions and DEC's rates approved in its most recent general rate case, which became effective June 1, 2021, adjusted as described above to recover only the fixed cost component.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2022.

A. The Company determines the estimated revenue requirements for Vintage 2022 separately for residential and non-residential customer classes and bases them on the second year of net lost revenues for its Vintage 2022 EE programs. The amounts are based on estimated North Carolina retail kW and kWh reductions and DEC's rates approved in its most recent general rate case, which became effective June 1, 2021, adjusted as described above to only recover the fixed cost component.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2023.

A. The estimated revenue requirements for Vintage 2023 EE programs include program costs, PPI, PRI and the first year of net lost revenues determined separately for residential and non-residential customer classes. The estimated revenue requirements for Vintage 2023 DSM programs include program costs and PPI. The program costs and shared savings incentive are computed at the system level and allocated to North Carolina based on the allocation methodologies discussed earlier in my testimony. The amounts are based on estimated North Carolina retail kW and kWh reductions and DEC's rates approved in its most recent general rate case, which became effective June 1, 2021, adjusted as described above to only recover the fixed cost component.

VII. EMF

Q. WHAT IS THE TEST PERIOD FOR THE EMF COMPONENT?

A. Pursuant to the Second Waiver Order and the Stipulation, the test period for the EMF component is defined as the most recently completed vintage year at the time of DEC's Rider EE cost recovery application filing date, which in this case is Vintage 2021 (January 1, 2021 through December 31, 2021). In addition, the Second Waiver Order allows the EMF component to cover multiple test periods, so the EMF component for Rider 14 includes Vintage 2018 (January 2018 through December 2018), Vintage 2019 (January 2019 through December 2019) and Vintage 2020 (January 2020 through December 2020) as well.

Q. WHAT IS BEING TRUED UP FOR VINTAGE 2021?

A. The chart below demonstrates which components of the Vintage 2021 estimate filed in 2020 are being trued up in the Vintage 2020 EMF component of Rider 14. Listebarger Exhibit 2, page 4 contains the calculation of the true-up for Vintage 2021. The second year of net lost revenues for Vintage 2021, which are a component of Rider 13 billings during 2022, will be trued up to actual amounts during the next rider filing.

	Vintage 2021 Estimate (2021) As Filed (Filed 2020)	**Vintage 2021 True-Up (2021) (Filed February 2022)**
	Rider 12	**Rider 14 EMF**
Participation	Estimated participation using half-year convention	Update for actual participation for January – December 2021
EM&V	Initial assumptions of load impacts	Updated according to Commission-approved EM&V Agreement

	Vintage 2021 Estimate (2021) As Filed (Filed 2020)	Vintage 2021 True-Up (2021) (Filed February 2022)
	Rider 12	**Rider 14 EMF**
Lost Revenues	Estimated 2021 participation using half-year convention	Update for actual participation for January – December 2021 and actual 2021 lost revenue rates
Found Revenues	Estimated according to Commission-approved guidelines	Update for actual according to Commission-approved guidelines
New Programs	Only includes programs approved prior to estimated filing	Update for any new programs and pilots approved and implemented since estimated filing

In addition, DEC has implemented deferral accounting for the under/over collection of program costs and calculated a return at the net-of-tax rate of return rate approved in DEC's most recent general rate case. The methodology used for the calculation of return is the same as that typically utilized for DEC's Existing DSM Program rider proceedings. Pursuant to Commission Rule R8-69(c)(3), DEC is not accruing a return on net lost revenues or the PPI. Please see Listebarger Exhibit 3, pages 1 through 16 for the calculation performed as part of the true-up of Vintage 2018, Vintage 2019, Vintage 2020 and Vintage 2021.

Q. HOW WERE THE LOAD IMPACTS UPDATED?

A. For DSM programs, the contracted amounts of kW reduction capability from participants are considered to be components of actual participation. As a result, the Vintage 2021 true-up reflects the actual quantity of demand reduction capability for the Vintage 2021 period. The load impacts for EE programs were updated in accordance with the Commission-approved EM&V Agreement.

Q. HOW WERE ACTUAL NET LOST REVENUES COMPUTED FOR THE VINTAGE 2021 TRUE-UP?

A. Net lost revenues for year one (2021) of Vintage 2021 were calculated using actual kW and kWh savings by North Carolina retail participants by customer class based on actual participation and load impacts reflecting EM&V results applied according to the EM&V Agreement. The actual kW and kWh savings were as experienced during the period January 1, 2021 through December 31, 2021. The rates applied to the kW and kWh savings are the retail rates that were in effect for the period January 1, 2021 through December 31, 2021, reduced by fuel and other variable costs. The lost revenues were then offset by actual found revenues for year one of Vintage 2021 as explained by Company witness Evans. The calculation of net lost revenues was performed by rate schedule within the residential and non-residential customer classes.

Q. WHAT IS BEING TRUED UP FOR VINTAGE 2020?

A. Avoided costs for Vintage 2020 DSM programs are being trued up to update EM&V participation results. Avoided costs for Vintage 2020 EE programs are also being trued up based on updated EM&V results. The actual kW and kWh savings were as experienced during the period January 1, 2020 through December 31, 2020. The rates applied to the kW and kWh savings are the retail rates that were in effect during each period the lost revenues were earned, reduced by fuel and other variable costs.

Q. WHAT IS BEING TRUED UP FOR VINTAGE 2019?

A. Net lost revenues for all years were trued up for updated EM&V results. The actual kW and kWh savings were as experienced during the period January 1, 2019 through December 31, 2019. The rates applied to the kW and kWh savings are the retail rates that were in effect during each period the lost revenues were earned, reduced by fuel and other variable costs.

Q. WHAT IS BEING TRUED UP FOR VINTAGE 2018?

A. Net lost revenues for all years were trued up for updated EM&V results. The actual kW and kWh savings were as experienced during the period January 1, 2018 through December 31, 2018. The rates applied to the kW and kWh savings are the retail rates that were in effect during each period the lost revenues were earned, reduced by fuel and other variable costs.

VIII. PROPOSED RATES

Q. WHAT ARE THE PROPOSED INITIAL BILLING FACTORS APPLICABLE TO NORTH CAROLINA ELECTRIC CUSTOMERS FOR THE PROSPECTIVE COMPONENTS OF RIDER 14?

A. The Company's proposed initial billing factor for the Rider 14 prospective components is 0.4291 cents per kWh for DEC's North Carolina retail residential customers. For non-residential customers, the amounts differ depending upon customer elections of participation. The following chart depicts the options and rider amounts:

Non-Residential Billing Factors for Rider 14 Prospective Components	¢/kWh
Vintage 2020 EE participant	0.0259
Vintage 2021 EE participant	0.0671

Non-Residential Billing Factors for Rider 14 Prospective Components	¢/kWh
Vintage 2022 EE participant	0.0995
Vintage 2023 EE participant	0.4323
Vintage 2023 DSM participant	0.0970

Q. WHAT ARE DEC'S PROPOSED EMF BILLING FACTORS APPLICABLE TO NORTH CAROLINA ELECTRIC CUSTOMERS FOR THE TRUE-UP COMPONENTS OF RIDER 14?

A. The Company's proposed EMF billing factor for the true-up components of Rider 14 is (0.0903) cents per kWh for DEC's North Carolina retail residential customers. For non-residential customers, the amounts differ depending upon customer elections of participation. The following chart depicts the options and rider amounts:

Non-Residential Billing Factors for Rider 14 EMF Components	¢/kWh
Vintage 2021 EE Participant	(0.0833)
Vintage 2021 DSM Participant	(0.0173)
Vintage 2020 EE Participant	(0.0012)
Vintage 2020 DSM Participant	(0.0002)
Vintage 2019 EE participant	0.0064
Vintage 2019 DSM participant	0.0003
Vintage 2018 EE participant	(0.0021)
Vintage 2018 DSM participant	(0.0002)

IX. CONCLUSION

Q. PLEASE SUMMARIZE THE SPECIFIC RATE MAKING APPROVAL REQUESTED BY DEC.

A. DEC seeks approval of the Rider 14 billing factors to be effective throughout 2023. As discussed above, Rider 14 contains (1) a prospective component, which includes the fourth year of net lost revenues for non-residential Vintage 2020, the third year of net lost revenues for Vintage 2021, the second year of net lost revenues for Vintage 2022, and the revenue requirements for Vintage 2023; and (2) an EMF component which represents a true-up of Vintage 2018, Vintage 2019, Vintage 2020, and Vintage 2021. Consistent with the Stipulation, for DEC's North Carolina residential customers, the Company calculated one integrated prospective billing factor and one integrated EMF billing factor for Rider 14. Also in accordance with the Stipulation, the non-residential DSM and EE billing factors have been determined separately for each vintage year and will be charged to non-residential customers based on their opt-in/out status and participation for each vintage year.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1265

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application of Duke Energy Carolinas, LLC for 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	))))))	**SUPPLEMENTAL TESTIMONY OF SHANNON R. LISTEBARGER FOR DUKE ENERGY CAROLINAS, LLC**

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Shannon R. Listebarger, and my business address is 526 South Church Street, Charlotte, North Carolina, 28202.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes, on March 1, 2022, I caused to be pre-filed with the Commission my direct testimony and exhibit file with seven supporting workpapers.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY IN THIS PROCEEDING?

A. The purpose of my supplemental testimony is to present revised rates reflecting necessary updates and corrections to the calculation of the interest or return due on over- and under- collections on a number of pages within Listebarger Exhibit 3. The impacted pages of Exhibit 3 include 1, 2, 3, 4, 6, 7, 8, 9, 10, 11 and 12. These updates also flow forward and impact Exhibit 2 pages 1, 2 and 3 and Exhibit 1.

Q. YOUR SUPPLEMENTAL TESTIMONY INCLUDES THE REVISED EXHIBIT FILE WITH THESE UPDATES TO LISTEBARGER EXHIBIT 1, LISTEBARGER EXHIBIT 2 AND LISTEBARGER EXHIBIT 3. WERE THESE SUPPLEMENTAL EXHIBITS PREPARED BY YOU OR AT YOUR DIRECTION AND UNDER YOUR SUPERVISION?

A. Yes.

Q. WHAT IS THE TOTAL RATE IMPACT OF THESE UPDATES?

A. The overall impact to the revenue requirement results in an increase of $248,707, with corresponding increases to the billing factors of $0.0002 for residential customers and $0.0015 for non-residential customers. The $.0015 non-residential impact is made up of increases and decreases based on the vintages.

Q. HOW DOES THE COMPANY PROPOSE TO ADDRESS THE IMPACT OF THESE REVISIONS TO CUSTOMER RATES?

A. The Company proposes that the rates filed in the original application for Rider 14 be the rates billed to customers beginning January 1, 2023 and that the revised rate impacts as noted here within the supplemental testimony and accompanying exhibit file be incorporated as a true-up in the Company's next DSM/EE rider application to be filed on or about February 28, 2023.

Q. DOES THIS CONCLUDE YOUR PRE-FILED SUPPLEMENTAL TESTIMONY?

A. Yes.

(WHEREUPON, the prefiled rebuttal testimony of JEAN P. WILLIAMS is copied into the record as if given orally from the stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1265

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	
Application of Duke Energy Carolinas, LLC	)	**REBUTTAL TESTIMONY**
for Approval of Demand-Side Management	)	**OF JEAN P. WILLIAMS**
and Energy Efficiency Cost Recovery Rider	)	**FOR DUKE ENERGY**
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	**CAROLINAS, LLC**
Commission Rule R8-69	)	

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITH DUKE ENERGY.

A. My name is Jean Williams, and my business address is 411 S. Wilmington Street, Raleigh, North Carolina 27601. I am employed by Duke Energy Corporation as Manager, Evaluation Measurement & Verification in the Grid Strategy & Enablement Group.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have a Bachelor of Science degree in Business Administration from North Carolina Wesleyan and a Master's degree in Business Administration from Meredith College. I began working with Glaxo Pharmaceuticals as a Sales Analyst in May 1997 and later moved into a role developing long-term forecasts for products in development. In 1997, I took a position in Marketing Research with Blue Cross Blue Shield of North Carolina. I left that role in October 1998 to become Manager of Business Planning for a division of Sara Lee. Beginning in April 2001, I began working at Progress Energy where, as Lead Analyst, I led marketing research activities for the company. After the merger of Progress Energy, Inc. and Duke Energy Corporation, I joined the Evaluation, Measurement and Verification ("EM&V") team as a Lead Analyst in September 2014 and became manager of the group, my current role, in July 2016.

Q. **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

A. No, I have not.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS PROCEEDING?

A. No, I did not. Mr. Robert P. Evans has retired from Duke Energy Carolinas, LLC ("DEC" or the "Company"); therefore, I am adopting his direct testimony in addition to offering rebuttal testimony.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the direct testimony of David Williamson of the Public Staff of the North Carolina Utilities Commission ("Public Staff") concerning the Company's Advanced Metering Infrastructure ("AMI") data, customers' usage of that data, and its potential impact on the My Home Energy Report ("MyHER") EM&V processes.

Q. HOW DOES THE EM&V PROCESS CURRENTLY DETERMINE SAVINGS ATTRIBUTABLE TO THE MYHER PROGRAM?

A. The Company's evaluation of the savings attributable to the MyHER program is conducted by a third-party evaluator. The third-party evaluator employs a randomized control trial ("RCT") design to establish an unbiased estimate of savings. First, the evaluator randomly assigns eligible customers to either a treatment group or a control group. The customer group that regularly receives MyHER reports is deemed the "treatment" group, while the non-participating customers are deemed the "control" group. The evaluator then verifies that the treatment and control groups are statistically equivalent in their respective energy consumption to ensure the RCT will provide meaningful results. The third-party evaluator conducts this verification through a consumption analysis that tests each set of randomly-selected customer groups for equivalent consumption patterns. By separating customers in this way, the third-party evaluator is able to clearly delineate the estimated savings attributable to MyHER.

Q. DOES THE COMPANY AGREE WITH WITNESS WILLIAMSON'S ASSERTION THAT THE EM&V PROCESS SHOULD DISTINGUISH BETWEEN SAVINGS ARISING FROM MYHER AND SAVINGS ARISING FROM AVAILABILITY OF AMI DATA?

A. No, the Company does not believe it is necessary to specifically identify savings arising due to the availability of AMI data. Importantly, customers in both the treatment group and control group have access to their AMI data. This means that, as the third-party evaluator analyzes the benefits of the MyHER program, any reductions in energy consumption that customers may achieve through AMI engagement in the treatment group effectively cancel out similar reductions seen in the control group due to that group's AMI engagement.

In addition, the third-party evaluator's dual participation analysis quantifies annual electricity savings attributable to incremental demand-side management ("DSM") participation, should it exist, and subtracts it from MyHER impact estimates. This downward adjustment prevents savings from being double counted by both the MyHER program and the program where savings were originally claimed. As a result, the remaining observed differences in energy consumption between the treatment and control group are directly attributable to the MyHER program.

Q. SHOULD DUKE ENERGY INCREASE THE RIGOR OF THE MYHER EM&V PROCESS TO SHOW HOW AMI USAGE DATA INFLUENCES

CUSTOMERS' BEHAVIORS, AS WITNESS WILLIAMSON SUGGESTS?

A. The Company agrees that additional research may be done to determine the satisfaction, usage, and engagement with AMI usage data in both the treatment and control groups. However, this additional research should be conducted outside of the MyHER EM&V process because, as described above, the RCT inherently controls for AMI usage. As such, the Companies are committed to exploring ways in which this independent research can be conducted, via EM&V, to determine the impacts from customers having the ability to instantaneously access slightly delayed interval data.

Q. DOES THE COMPANY AGREE WITH THE PUBLIC STAFF'S STATEMENT THAT DYNAMIC PRICING TARIFFS ON THEIR OWN SHOULD NOT BE CONSIDERED A PROGRAM WITHIN THE COMPANY'S DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY ("DSM/EE") PORTFOLIO?

A. Yes, the Company agrees with this statement because a rate in isolation is a mechanism to recover the costs associated with serving a customer, not an DSM/EE Program. For this reason, to date, the Company has neither requested nor filed for approval any of the current time-differentiated or dynamic pricing rates to be recovered through the DSM/EE portfolio rider. However EM&V may indicate that such pricing tariffs do impact customers' energy consumption or demand profiles in a way that would make such recovery appropriate in the future.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

(WHEREUPON, the prefiled rebuttal testimony of LYNDA S. POWERS is copied into the record as if given orally from the stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1265

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	
Application of Duke Energy Carolinas, LLC	)	**REBUTTAL TESTIMONY**
for Approval of Demand-Side Management	)	**OF LYNDA S. POWERS**
and Energy Efficiency Cost Recovery Rider	)	**FOR DUKE ENERGY**
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	**CAROLINAS, LLC**
Commission Rule R8-69	)	

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITH DUKE ENERGY.

A. My name is Lynda S. Powers, and my business address is 400 S. Tryon Street, Charlotte, North Carolina. I am employed by Duke Energy Corporation as Senior Strategy and Collaboration Manager for the Carolinas in the Portfolio Strategy and Support group.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have a Bachelor of Science degree from Bob Jones University and two Master's degrees from the University of South Carolina, a Master of Business Administration and of English. I began working with the Office of Regulatory Staff ("ORS") in South Carolina in 2009 as a Program Specialist in telecommunications and later as a Regulatory Analyst in the Electricity, Gas and Economics Department. While at ORS, I completed the National Association of Regulatory Utility Commissioners ("NARUC") Regulatory Studies program at Michigan State University and Eastern NARUC Utility Rate School. In 2016, I became a Financial Analyst for Santee Cooper where I was responsible for evaluating existing and proposed programs for cost effectiveness, coordinating collaboration among subject matter experts regarding renewables and demand-side management programs, and preparing the annual budget for energy efficiency operations. While at Santee Cooper, I completed the North Carolina State University McKimmon Center for Continuing Education Meter School.

In 2018, I began working in my current role at Duke Energy. I am the regulatory lead in South Carolina for Energy Efficiency and Demand-Side Management ("EE/DSM") programs and the facilitator of the EE/DSM Collaborative stakeholder group (hereinafter "Collaborative" or "stakeholders") for both Duke Energy Carolinas, LLC ("DEC" or the "Company") and Duke Energy Progress, LLC ("DEP", collectively, the "Companies" in North and South Carolina or "Duke Energy"). I also represent the Company as a member of the Board of Directors for the Southeast Energy Efficiency Alliance.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION OR OTHER REGULATORY BODIES?

A. Yes, I testified before this Commission in 2021 as part of the DEP EE/DSM proceeding. I have also testified before the Public Service Commission of South Carolina ("PSCSC") on multiple occasions. In my role as a regulator at ORS, I testified before the PSCSC in two general rate cases, three annual fuel adjustment cases and one distributed energy resource program application.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to portions of the testimony of Forest Bradley-Wright filed on behalf of the North Carolina Justice Center ("NCJC"), the North Carolina Housing Coalition, and the Southern Alliance for Clean Energy ("SACE").

Q. PLEASE DESCRIBE THE PORTIONS OF WITNESS FOREST BRADLEY-WRIGHT'S TESTIMONY TO WHICH YOU ARE RESPONDING.

A. I am addressing the portions of witness Bradley-Wright's testimony that pertain to the Collaborative, particularly his assertion that the Company has not acted on program suggestions appropriately. I will also address his concerns related to the one percent savings target and the request to quantify and monetize carbon savings within the demand-side management and energy efficiency programs.

COLLABORATIVE

Q. PLEASE DESCRIBE YOUR ROLE AS THE FACILITATOR OF THE COLLABORATIVE.

A. I am the Collaborative's primary point of contact for stakeholders in North and South Carolina who have ideas, input, or questions related to the Company's EE/DSM programs. My responsibilities in that role include responding to stakeholders' questions or requests for information and connecting them with the appropriate subject matter experts at Duke Energy. Additionally, I organize the bimonthly Collaborative meetings and most of the working group calls between meetings. I also ensure the preparation and distribution of meeting materials and minutes.

Q. WHAT IS THE ROLE OF THE COLLABORATIVE?

A. The Collaborative is a long-standing advisory group of interested stakeholders from across North and South Carolina. In its mission statement, which was written as part of a cooperative effort in 2019, the Collaborative defined its role as "a forum for providing insight and input concerning topics related to energy efficiency and demand-side management including program design and development; measurement and evaluation; regulatory and market conditions;

specific issues or topics as requested by the NC Utilities Commission and the Public Service Commission of SC; and emerging opportunities to achieve cost-effective energy savings."

The Collaborative serves as a key source for input into the Company's EE/DSM portfolio and allows a diverse group of stakeholders to share potential new programs and programmatic enhancements offered by other utilities in different regions of the country. The Collaborative brings together members from several advocacy groups, as well as regulators, academics, and members of trade organizations – all representing unique interests and, at times, differing priorities. Additionally, the Collaborative is attended by the Public Staff of the North Carolina Utilities Commission ("Public Staff") and the ORS, which represent the interests of all customers.

Q. HOW DOES DEC SUPPORT THE COLLABORATIVE SO THAT IT CAN FULFILL ITS ROLE?

A. The Company has established a process by which members determine the agenda, request subject matter experts to present on a wide range of topics, and receive meeting materials in advance to ensure adequate time for review. The Company also hosts working groups and initiates separate conference calls to discuss items that cannot be fully explored during bimonthly meetings. Twice a year, I present each of the residential and nonresidential programs one-by-one and lead a discussion between Collaborative members and the Companies' program managers. The analytics team presents evaluation, measurement, and verification studies ("EM&V") twice a year as well. The Companies' subject matter experts also carve out opportunities to solicit Collaborative feedback at various stages of program design, implementation, and review.

RESPONSE TO WITNESS BRADLEY-WRIGHT

Q. DO YOU AGREE WITH WITNESS BRADLEY-WRIGHT THAT DEC HAS TAKEN LITTLE VISIBLE ACTION IMPEMENTING STAKEHOLDER MEMBER RECOMMENDATIONS UNTIL RECENTLY?

A. No, I do not. The Company is eager to find new ways to encourage customers' energy efficiency efforts though the exchange of ideas within the Collaborative. Transforming those ideas into cost-effective, scalable, commercially viable programs, however, is complex. Remember, it is not enough for a program to further a specific special interest. Rather the program must comply with the Mechanism, which includes certain cost-effectiveness thresholds and required characteristics (such as commercially available technology). As such, simply because certain ideas or recommendations were not reflected in a final program is not an indication that the Company ignores stakeholder feedback.

To illustrate this point, I will respond to each of the seven specific ideas submitted by the Collaborative that witness Bradley-Wright cites in his testimony. In the paragraphs below, it is clear that, contrary to witness Bradley-Wright's testimony, the Company took meaningful actions toward implementing each of these program ideas.

<u>Low-Income Housing Tax Credit ("LIHTC")</u>

Members originally brought this idea to the Company in March 2019 as a suggestion for a stand-alone program to reach multifamily housing developments that were applying for tax credits. Upon further investigation, the Company found and shared with the Collaborative that all the measures that would be part of this idea for a stand-alone program, along with substantial design assistance, were already offered to customers through the Smart $aver Custom New Construction Energy Efficiency Design Assistance program ("NCEEDA").

Although LIHTC was ultimately not appropriate for a stand-alone new program for the reasons stated above, DEC recognized and acted upon an opportunity to utilize a concept within this initiative to pair these incentives with federal tax credits in a way not previously administered under the existing NCEEDA program. The Company and several Collaborative members scheduled a joint statewide workshop with developers, architects, and contractors who construct or renovate low-income multifamily developments to generate interest in the NCEEDA program. Although the time between planning and completion is often long, developers are seeing the benefits of pairing rebates with tax credits, and the Company is continuing to pursue these projects.

<u>Energy Star Retail Products Platform ("ESRPP")</u>

The Collaborative submitted the ESRPP for consideration in January 2020. At a high level, the ESRPP offers incentives directly to retailers of Energy Star appliances and those retailers, in turn, offer discounts on those appliances to consumers. However, the Company investigated the ESRPP when the Collaborative submitted the idea for consideration and found that it replicated many of the features that were part of a DEC program already in operation. The

Company determined at that time that the best course of action was to allow the existing program to mature and not to pursue an external alternative simultaneously.

However, the Company recently, at the request of the Collaborative, revisited the idea of utilizing the ESRPP and found that the platform offered no additional cost savings or measure expansion but could serve as a reference point in the future when the Company searches for new measures. DEC communicated that finding to the Collaborative in July 2021. Yet again, the Company acted on a specific recommendation and did its due diligence to determine whether the recommendation would provide savings to customers and meet the required thresholds for such EE programs under the Mechanism. In this instance, the recommendation would not have provided any additional savings, which is why it was not implemented by the Company.

<u>Program Savings from Codes and Standards</u>

In early 2020, members of the Collaborative suggested that the Companies could claim savings from advancing building energy codes and appliance standards in the Carolinas and suggested creating a program to capture those savings. However, North and South Carolina do not have a statutory or regulatory framework that defines the actions a utility must take to claim attributed savings or to determine the appropriate attribution methodology.[1] As such, there is no avenue by which the Companies could implement such a

[1] The Companies informed the Collaborative of this in both January 2020 and July 2021.

program. If and when the regulatory or statutory frameworks change, DEC will revisit this recommendation.

Residential Low-Income Single-Family Heat Pump Water Heater Rental Program

In recognition of the energy savings potential of heat pump water heaters ("HPWH"), members recommended in June 2020 that DEC offer a program whereby low-income customers rent a HPWH for their homes directly from DEC and add the rent payment to their electric bills. Members explained that eligible homes must have certain physical characteristics to ensure an HPWH functions properly. For example, members noted that an HPWH needs a minimum of 750 cubic feet of unobstructed space for proper ventilation or exhaust vents and should be located near a drain (like the one used for washing machines) or be connected to a condensate pump.

The Company immediately began investigating the feasibility of installations of an HPWH and determined there were several obstacles to implementation of such a program. For example, in addition to the required physical characteristics of the home mentioned above, the program would require the Company to implement an on-bill collection mechanism for receiving payments and also identify qualified vendors capable of installing HPWH on a wide scale. Then the Company would have to locate low-income customers – either homeowners or renters with owner approval – that would want to participate in the program and have the required physical characteristics to install the HPWH in their dwelling. Although these efforts will take time, the Company continues to research and investigate (for example, the Company has already reached out to vendors) this recommendation to determine whether it can be transformed into a feasible program option that would create additional savings for customers.

Non-Residential Multifamily Heat Pump Water Rebate Program

Also in 2020, members suggested that the Company approach multifamily property owners with the offer of a rebate for installing HPWHs. Each HPWH would serve multiple units within the building. To date, the Company has determined that it can include HPWH in the New Construction Energy Efficiency Design Assistance ("NCEEDA") program, but no developer has expressed an interest in participating.

Manufactured Homes Retrofit Program

In late 2020, members suggested a program that retrofits manufactured homes to make them more energy efficient by installing more efficient heating and air conditioning equipment, replacing or repairing duct work, and insulating and sealing the structure's envelope. However, all of the recommended measures are part of the Company's existing Residential Smart $aver program and are currently available to manufactured homes. Therefore, the Company did not develop a new program in response to this recommendation.

Manufactured Home New and Replacement Programs

Also in late 2020, members suggested that the Company begin offering an incentive to replace inefficient manufactured homes with Energy Star manufactured homes. In response to this recommendation, the Company is investigating whether an incentive of this type can be included in the Residential New Construction program. If the Company determines that the program is feasible and will provide additional savings to customers, it will formalize the concept into a program and petition the Commission for approval.

Q. WHY CAN'T THE COMPANY ADOPT WITNESS BRADLEY-WRIGHT'S SUGGESTIONS AND AVOID HIM REPEATEDLY FILING SIMILAR COMMENTS?

A. DEC is a regulated company and with that comes the responsibility to develop, propose, implement and administer cost-effective EE/DSM programs that comply with (i) this Commission's Rules, and (ii) the Mechanism that the Commission has approved for use by the Company for EE/DSM program cost recovery purposes. Witness Bradley-Wright's testimony does not account for this technical side of program development or the time-consuming process by which these programs are developed. These additional hurdles add complexity and time to the program development process. Even the program design processes for the High Energy Use Low-Income Energy Efficiency Pilot and the Tariffed On-Bill Pilot that he touts as examples of successful collaboration have been analyzed in meetings for more than a year, and no applications for approval have been filed for these programs. Although I understand that witness Bradley-Wright may want to see these recommendations implemented immediately, the reality is that taking an idea and turning it into a cost-effective, legally-compliant program is a time-consuming process containing factors that neither the Company nor the Collaborative can control.

Q. DO THESE RECOMMENDATIONS PROVIDE ANY INSIGHT TO THE COMPANY, EVEN IF THEY ARE NOT ULTIMATELY APPROVED BY THE COMMISSION?

A. Yes, they do. Even if the recommendation is not feasible from an implementation standpoint, the continued dialogue and exchange of ideas assures the Company is aware of potential opportunities to enhance and provide cost-effective programs for all DEC customers. For example, in response to the LIHTC recommendation outlined above, the Company opened up a new conversation with developers, and there are currently over a dozen multifamily projects in the pipeline (at various stages) that pair incentives with federal tax credits. Additionally, ESRPP will be a source in the future to confirm that the measure list remains expansive because ESRPP contains a comprehensive list of all Energy Star appliances – regardless of cost-effectiveness.

Q. SHOULD THE COMPANY BE REQUIRED TO RESPOND WITHIN A CERTAIN AMOUNT OF TIME TO THE COLLABORATIVE'S RECOMMENDATIONS AND TRACK ANY RESULTING SAVINGS, AS WITNESS BRADLEY-WRIGHT SUGGESTS?

A. No, it should not. As I stated above, program development is already challenging and requires an open exchange of ideas. Imposing arbitrary deadlines to speed up the process will likely undermine the Company's ability to give each suggestion the amount of research and investigation it warrants. Tracking savings from each recommendation is also problematic. For example, deciding what portion of energy savings is attributable to the Collaborative's recommendation and what portion the Company achieved on its own contains inherent gray areas (e.g., proposed by the Collaborative, but improved upon by the Company). Aside from the difficulty of correctly ascertaining this amount, the calculation does not create any benefit to customers – which is the entire point of the Collaborative – and is antithetical to the nature of true collaboration, because it would "keep score" between the Company and the Collaborative. Instead, the Collaborative should continue to be guided by its mission to create additional savings for all customers – regardless of where the ideas originate – through thoughtful, considered deliberation and a free-flow of information.

Q. SHOULD DEC BE REQUIRED TO "QUANTIFY AND ANALYZE THE FULL LIFETIME CARBON SAVINGS ASSOCIATED WITH DUKE'S EE/DSM PORTFOLIO IN FUTURE COST RECOVERY RIDER PROCEEDINGS" AS WITNESS BRADLEY-WRIGHT SUGGESTS?

A. No. At this time, the Company does not agree with the inclusion of a requirement to report full lifetime carbon savings as a component of its future recovery proceedings. However, the Company agrees that it will be appropriate to report the carbon reductions associated with EE/DSM programs in future EE/DSM rider recovery proceedings after the Commission approves a Carbon Plan and an agreed upon methodology for determining carbon reduction associated with EE/DSM programs. It will be equally important to appropriately include any Commission-approved modification to the determination of utility system benefits associated with EE/DSM programs in the evaluation of cost-effectiveness. Once the Carbon Plan has been approved by the Commission, the Company will share its proposed reporting method and the projected impacts the modification will make on the determination of cost effectiveness for the portfolio of programs offered and the Company's projected portfolio performance incentive ("PPI") and program return incentive ("PRI"). Keeping the calculations of cost effectiveness, which determine if a program should be offered, and the underlying calculations of PPI and PRI consistent is important to maintain alignment between the benefits customers realize, the efficiencies which occur on the utility system, and the Company's incentives.

Q. SHOULD THE COMMISSION ENDORSE THE ENERGY-RELATED RECOMMENDATIONS OF THE LOW-INCOME AFFORDABILITY COLLABORATIVE ("LIAC") AND DIRECT DUKE TO DEVELOP PROGRAM APPLICATIONS AS A RESULT?

A. No, not at this time. As directed by this Commission, the LIAC has worked in conjunction with the Collaborative to explore a full spectrum of opportunities to address affordability for low- and moderate-income customers. However, witness Bradley-Wright's suggestion is premature since the final recommendations have not been submitted to the Commission yet. The Company is committed to the work of the LIAC and to acting on behalf of the customers for which the LIAC is working, after the recommendations are final and approved by the Commission.

Q. DO YOU AGREE WITH WITNESS BRADLEY-WRIGHT THAT DEC HAS YET TO COMMIT TO WORKING WITH THE COLLABORATIVE TO EXPLORE OPTIONS FOR REVERSING THE FORECASTED DECLINE IN EE/DSM SAVINGS?

A. Frankly, witness Bradley-Wright's assertion is disconcerting because it suggests that the Company has not committed to working with the Collaborative to develop strategies to support closing the 1% gap. In fact, these efforts are well underway, and witness Bradley-Wright has been involved in a number of ongoing discussions related to this topic, including those discussions regarding (i) carbon-reduction planning with EE/DSM savings at or above 1%, (ii) widening the scope of the market potential study to capture any and all potential savings opportunities, and (iii) expanding low-income programs and pilots to increase future savings forecasts. Even more perplexing is that witness Bradley-Wright himself volunteered to lead the working group within the Collaborative to identify opportunities and document a specific plan for closing the gap between forecasted savings and the 1% aspirational goal in future filings. Although witness Bradley-Wright has yet to convene a meeting in this role, the Company is hopeful that the working group will meet in the near future and produce meaningful recommendations that further EE/DSM measures in North Carolina.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

(WHEREUPON, Evans Exhibits 1 - 18 and Exhibits A - F as adopted by Karen K. Holbrook, are marked for identification as prefiled.)

(WHEREUPON, the prefiled direct testimony of ROBERT P. EVANS, as adopted by KAREN K. HOLBROOK is copied into the record as if given orally from the stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1265

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
Application of Duke Energy Carolinas, LLC	)	**DIRECT TESTIMONY OF**
for Approval of Demand-Side Management	)	**ROBERT P. EVANS**
and Energy Efficiency Cost Recovery Rider	)	**FOR**
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	**DUKE ENERGY CAROLINAS, LLC**
Commission Rule R8-69	)	

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITH DUKE ENERGY.

A. My name is Robert P. Evans, and my business address is 410 S. Wilmington Street, Raleigh, North Carolina 27601. I am employed by Duke Energy Corporation ("Duke Energy") as Senior Manager-Strategy and Collaboration for the Carolinas in the Integrated Grid Strategy and Solutions group.

Q. PLEASE BRIEFLY STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I graduated from Iowa State University ("ISU") in 1978 with a Bachelor of Science Degree in Industrial Administration and a minor in Industrial Engineering. As a part of my undergraduate work, I participated in both the graduate level Regulatory Studies Programs sponsored by American Telephone and Telegraph Corporation, and graduate level study programs in Engineering Economics. Subsequent to my graduation from ISU, I received additional Engineering Economics training at the Colorado School of Mines, completed the National Association of Regulatory Utility Commissioners Regulatory Studies program at Michigan State, and completed the Advanced American Gas Association Ratemaking program at the University of Maryland. Upon graduation from ISU, I joined the Iowa State Commerce Commission (now known as the Iowa Utility Board ("IUB") in the Rates and Tariffs Section of the Utilities Division. During my tenure with the IUB, I held several positions, including Senior Rate Analyst in charge of Utility Rates and Tariffs, and

Assistant Director of the Utility Division. In those positions, I provided testimony in gas, electric, water, and telecommunications proceedings as an expert witness in the areas of rate design, service rules, and tariff applications. In 1982, I accepted employment with City Utilities of Springfield, Missouri, as an Operations Analyst. In that capacity, I provided support for rate-related matters associated with the municipal utility's gas, electric, water, and sewer operations. In addition, I worked closely with its load management and energy conservation programs. In 1983, I joined the Rate Services staff of the Iowa Power and Light Company, now known as MidAmerican Energy, as a Rate Engineer. In this position, I was responsible for the preparation of rate-related filings and presented testimony on rate design, service rules, and accounting issues before the IUB. In 1986, I accepted employment with Tennessee-Virginia Energy Corporation (now known as the United Cities Division of Atmos Energy) as Director of Rates and Regulatory Affairs. While in this position, I was responsible for regulatory filings, regulatory relations, and customer billing. In 1987, I went to work for the Virginia State Corporation Commission in the Division of Energy Regulation as a Utilities Specialist. In this capacity, I worked on electric and natural gas issues and provided testimony on cost of service and rate design matters brought before that regulatory body. In 1988, I joined North Carolina Natural Gas Corporation ("NCNG") as its Manager of Rates and Budgets. Subsequently, I was promoted to Director-Statistical Services in NCNG's Planning and Regulatory Compliance Department. In that position, I performed a variety of work associated with financial, regulatory, and statistical analysis and presented testimony on several issues brought before the North Carolina Utilities Commission ("Commission"). I held that position until the closing of NCNG's merger with Carolina Power and Light Company, the predecessor of Progress Energy, Inc. ("Progress"), on July 15, 1999.

From July 1999 through January 2008, I was employed in Principal and Senior Analyst roles by the Progress Energy Service Company, LLC. In these roles, I provided NCNG, Progress Energy Carolinas, Inc. (now Duke Energy Progress, LLC or "DEP"), and Progress Energy Florida, Inc. with rate and regulatory support in their state and federal venues. From 2008 through the merger of Duke Energy and Progress, I provided regulatory support for demand-side management ("DSM") and energy efficiency ("EE") programs. Subsequent to the Progress merger with Duke Energy, I obtained my current position.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN MATTERS BROUGHT BEFORE THIS COMMISSION?

A. Yes. I have provided testimony to this Commission in matters concerning revenue requirements, avoided costs, cost of service, rate design, and the recovery of costs associated with DSM/EE programs and related accounting matters.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. I am responsible for the regulatory support of DSM/EE programs in North Carolina for both Duke Energy Carolinas, LLC ("DEC" or the "Company") and DEP.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports DEC's Application for approval of its DSM/EE Cost Recovery Rider, Rider EE, for 2023 ("Rider 14"), which encompasses the Company's currently effective cost recovery and incentive mechanism ("Mechanism") and portfolio of programs approved in the Commission's *Order Approving DSM/EE Programs and Stipulation of Settlement* issued October 29, 2013, in Docket No. E-7, Sub 1032 and the prospective Mechanism approved in the Commission's *Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms* issued on October 20, 2020, in Docket Nos. E-2, Sub 931 and E-7, Sub 1032 ("*2020 Sub 1032 Order*", collectively, "*Sub 1032 Orders*"). My testimony provides (1) a discussion of items the Commission specifically directed the Company to address in this proceeding; (2) an overview of the Commission's Rule R8-69 filing requirements; (3) a synopsis of the DSM/EE programs included in this filing; (4) a discussion of program results; (5) an explanation of how these results have affected the Rider 14 calculations; (6) information on DEC's Evaluation Measurement & Verification ("EM&V") activities; (7) an overview of the calculation of the Portfolio Performance Incentive ("PPI"); (8) information relating to the Collaborative; (9) information requested by the Commission about the recruitment of and participation in the Find It Duke ("FID") referral program by historically disadvantaged businesses; and (10) a discussion relating to the Company's Reserve Margin Adjustment Factor ("RMAF").

Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. Evans Exhibit 1 supplies, for each program, load impacts and avoided cost revenue requirements by vintage. Evans Exhibit 2 contains a summary of net lost revenues for the period January 1, 2019 through December 31, 2023. Evans Exhibit 3 contains the actual program costs for North Carolina for the period January 1, 2019 through December 31, 2021. Evans Exhibit 4 contains the found revenues used in the net lost revenues calculations. Evans Exhibit 5 supplies evaluations of event-based programs. Evans Exhibit 6 contains information about and the results of DEC's programs and a comparison of actual impacts to previous estimates. Evans Exhibit 7 contains the projected program and portfolio cost-effectiveness results for the Company's current portfolio of programs. Evans Exhibit 8 contains a summary of 2021 program performance and an explanation of the variances between the forecasted program results and the actual results. Evans Exhibit 9 is a list of DEC's industrial and large commercial customers that have opted out of participation in its DSM or EE programs and a listing of those customers that have elected to opt in to DEC's DSM or EE programs after having initially notified the Company that they declined to participate, as required by Commission Rule R8-69(d)(2). Evans Exhibit 10 contains the projected shared savings incentive

(PPI) associated with Vintage 2023. Evans Exhibit 11 provides a summary of the estimated activities and timeframe for completion of EM&V by program. Evans Exhibit 12 provides the actual and expected dates when the EM&V for each program or measure will become effective. Evans Exhibit 13 provides a table showing program cost and avoided costs savings for the test period ending December 31, 2021 and for the previous five test periods. Evans Exhibit 14 provides information showing the method used to exclude Find It Duke amounts from the energy efficiency portfolio. Evans Exhibits 15, 16 and 17 provide attachments to the Company's responses to the additional information requested by the Commission in its December 17, 2021 Order in Docket No. E-7, Sub 1265. Evans Exhibit 18 contains revisions, associated with the RMAF, to section 20 of the DEC Cost Recovery Mechanism for the Commission's consideration. Evans Exhibits A through F provide the detailed completed EM&V reports for the following: Low Income Weatherization Program 2016-2018 (Evans Exhibit A); Power Manager 2019 - 2020 (Evans Exhibit B); Online Savings Store Program 2019 (Evans Exhibit C); K12 Education Program 2019-2020 (Evans Exhibit D); Small Business Energy Saver 2019-2020 (Evans Exhibit E); and EnergyWise Business Interim Report 2020 (Evans Exhibit F).

Q. WERE EVANS EXHIBITS 1-18 PREPARED BY YOU OR AT YOUR DIRECTION AND SUPERVISION?

A. Yes, they were.

II. ACTIONS ORDERED BY THE COMMISSION

Q. PLEASE DESCRIBE THE ACTIONS DEC HAS TAKEN IN RESPONSE TO THE COMMISSION'S 2021 ORDER IN DEC'S PREVIOUS DSM/EE RIDER PROCEEDING.

A. My direct testimony addresses the Company's responses to the Commission's directives in DEC's previous DSM/EE Rider proceeding. In its September 10, 2021 *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice* in Docket No. E-7, Sub 1249 ("Sub 1249"), the Commission ordered: (1) that DEC file the calculations and workpapers clearly showing the Find It Duke ("FID") referral channel costs and revenues excluded and methods(s) used to exclude such amounts from the EE Rider (See Section XI); (2) that DEC shall include the information requested by the Commission about recruitment and participation in FID by historically disadvantaged businesses (See Section XI); and (3) that DEC shall work with the Public Staff to codify the RMAF methodology into the Cost Recovery Mechanism ("Mechanism") (See Section XII).

III. <u>RULE R8-69 FILING REQUIREMENTS</u>

Q. WHAT INFORMATION DOES DEC PROVIDE IN RESPONSE TO THE COMMISSION'S FILING REQUIREMENTS?

A. The information for Rider 14 is provided in response to the Commission's filing requirements contained in R8-69(f)(1) and can be found in the testimony and exhibits of Company witnesses Evans and Listebarger as follows:

R8-69(f)(1)		Items	Location in Testimony
(i)		Projected NC retail sales for the rate period	Listebarger Exhibit 6
(ii)		For each measure for which cost recovery is requested through Rider 13:	
(ii)	a.	Total expenses expected to be incurred during the rate period	Evans Exhibit 1
(ii)	b.	Total costs savings directly attributable to measures	Evans Exhibit 1
(ii)	c.	EM&V activities for the rate period	Evans Exhibit 11
(ii)	d.	Expected peak demand reductions	Evans Exhibit 1
(ii)	e.	Expected energy reductions	Evans Exhibit 1
(iii)		Filing requirements for DSM/EE EMF rider, including:	
(iii)	a.	Total expenses for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Evans Exhibit 3
(iii)	b.	Total avoided costs for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Evans Exhibit 1
(iii)	c.	Description of results from EM&V activities	Testimony of Robert Evans and Evans Exhibits A-C
(iii)	d.	Total peak demand reductions in the aggregate and broken down per program	Evans Exhibit 1
(iii)	e.	Total energy reduction in the aggregate and broken down per program	Evans Exhibit 1
(iii)	f.	Discussion of findings and results of programs	Testimony of Robert Evans and Evans Exhibit 6
(iii)	g.	Evaluations of event-based programs	Evans Exhibit 5
(iii)	h.	Comparison of impact estimates from previous year and explanation of significant differences	Testimony of Robert Evans and Evans Exhibits 6 and 8
(iv)		Determination of utility incentives	Testimony of Robert Evans and Evans Exhibit 10
(v)		Actual revenues from DSM/EE and DSM/EE EMF riders	Listebarger Exhibit 4
(vi)		Proposed Rider 14	Testimony of Shannon Listebarger Exhibit 1
(vii)		Projected NC sales for customers opting out of measures	Listebarger Exhibit 6
(viii)		Supporting work papers	Via Data Transfer

IV. PORTFOLIO OVERVIEW

Q. WHAT ARE DEC'S CURRENT DSM AND EE PROGRAMS?

A. The Company has two interruptible programs for nonresidential customers, Interruptible Service ("IS") and Standby Generation ("SG"), which are accounted for outside of the Mechanism approved by the Commission in the *Sub 1032 Orders*. Aside from IS and SG, the following DSM/EE programs have been implemented by DEC in its North Carolina service territory:

RESIDENTIAL CUSTOMER PROGRAMS

- Energy Assessment Program
- EE Education Program
- Energy Efficient Appliances and Devices Program
- Smart $aver EE Program
- Multifamily EE Program
- My Home Energy Report ("MyHER") Program
- Income-Qualified EE and Weatherization Program for Individuals
- Neighborhood Energy Saver Program
- Power Manager Load Control Service Program

NONRESIDENTIAL CUSTOMER PROGRAMS

- Nonresidential Smart $aver Energy Efficient Products and Assessment Program:
  - Energy Efficient Food Service Products
  - Energy Efficient HVAC Products
  - Energy Efficient IT Products
  - Energy Efficient Lighting Products
  - Energy Efficient Process Equipment Products
  - Energy Efficient Pumps and Drives Products
  - Custom Incentive and Energy Assessment

- PowerShare Nonresidential Load Curtailment Program
- Small Business Energy Saver Program
- EnergyWise for Business Program
- Nonresidential Smart $aver Performance Incentive Program

Q. ARE THESE SUBSTANTIVELY THE SAME PROGRAMS DEC RECEIVED APPROVAL FOR IN DOCKET NO. E-7, SUB 1032?

A. Yes. The programs contained in the current portfolio are the same as those approved by the Commission in the initial *Sub 1032 Order*, with the exception of the discontinuation of the PowerShare CallOption and the Smart Energy in Offices Program and the addition of the Nonresidential Smart $aver Performance Incentive Program.

Q. PLEASE DESCRIBE ANY UPDATES MADE TO THE UNDERLYING ASSUMPTIONS FOR DEC'S PORTFOLIO OF PROGRAMS THAT HAVE ALTERED PROJECTIONS FOR VINTAGE 2023.

A. Updates to underlying assumptions that materially impact DEC's 2023 portfolio projection are due to EM&V-related impacts and changes in avoided costs.

Q. PLEASE DESCRIBE THE EM&V IMPACT TO DEC'S ESTIMATED 2023 PROGRAM PORTFOLIO.

A. Changes in the EM&V results were updated to reflect the savings impacts for those programs for which DEC received EM&V results after it prepared its application in Sub 1265. Updating EM&V for its programs results in changes to the projected avoided cost benefits associated with the projected participation. Hence, these EM&V updates will impact the calculation of the specific program and overall portfolio cost-effectiveness, as well as impact the calculation of DEC's projected shared savings incentive.

Q. AFTER FACTORING THESE UPDATES INTO THE VINTAGE 2023 PORTFOLIO, DO THE RESULTS OF DEC'S PROSPECTIVE UTILITY COST-EFFECTIVENESS TESTS INDICATE THAT IT SHOULD DISCONTINUE OR MODIFY ANY OF ITS PROGRAMS?

A. DEC performed a prospective analysis of each of its programs and the aggregate portfolio for the Vintage 2023 period. The cost-effectiveness results for the entire portfolio for Vintage 2023 are contained in Evans Exhibit 7. The cost-effectiveness criteria has been modified for 2023. Previously the Total Resource Cost ("TRC") test was the indicator of program viability. Effective in 2022, the Utility Cost Test ("UCT") replaces the TRC for use in screening DSM/EE programs. The aggregate portfolio continues to project cost-effectiveness, with the exception of the Income-Qualified EE Products and Services Program, which was not cost-effective at the time of Commission approval and an element of the Nonresidential Smart $aver Program. Based on the results of these cost-effectiveness tests, there are no reasons to discontinue any of DEC's programs. Notably, the Company continues to examine its programs for potential modifications to increase their effectiveness, regardless of the current cost-effectiveness results.

Q. PLEASE IDENTIFY THE ELEMENT OF THE NONRESIDENTIAL SMART $AVER PROGRAM THAT WAS FORECASTED TO BE LESS THAN COST EFFECTIVE.

A. The Information Technology subcategory of the Nonresidential Smart $aver Program had a UCT score that was less than 1.0.

Q. WOULD IT BE APPROPRIATE TO DISCONTINUE THIS PROGRAM ELEMENT?

A. No, it would not. This element is integral for ensuring that a robust portfolio of prescriptive offerings is available for its nonresidential customers. In addition, this element is only a measure category within a much larger program. The UCT score for the prescriptive portion of the Nonresidential Smart $aver Program is 4.35, and the UCT score for the Nonresidential Smart $aver Program, as a whole, is 3.82.

V. <u>DSM/EE PROGRAM RESULTS TO DATE</u>

Q. HOW MUCH ENERGY, CAPACITY AND AVOIDED COST SAVINGS DID DEC DELIVER AS A RESULT OF ITS DSM/EE PROGRAMS DURING VINTAGE 2021?

A. During Vintage 2021, DEC's DSM/EE programs delivered nearly 637 million kilowatt-hours ("kWh") of energy savings, over 947 megawatts ("MW") of summer peak capacity savings and over 442 MW of winter peak capacity savings, which produced net present value of avoided cost savings of over $292 million. The 2021 performance results for individual programs are provided on page 4 of Evans Exhibit 1.

Q. HOW DID THE COMPANY'S PROGRAMS PERFORM RELATIVE TO THEIR ORIGINAL ESTIMATES FOR VINTAGE 2021?

A. Referring to Evans Exhibit 8, overall performance during 2021 was less than forecasted. This, of course, is primarily due to the ongoing effects of the COVID pandemic. There were some highlights though. The energy savings associated with the Residential Smart Saver program exceeded its forecast by 69 percent and the Nonresidential Smart Saver Energy Efficient HVAC Products exceeded its forecast by 469 percent.

VI. PROJECTED RESULTS

Q. PLEASE PROVIDE A PROJECTION OF THE RESULTS THAT DEC EXPECTS TO SEE FROM IMPLEMENTATION OF ITS PORTFOLIO OF PROGRAMS.

A. Consistent with the terms of its Commission-approved cost recovery mechanism Save-A-Watt, DEC will update the actual and projected EE achievement levels in its annual Rider EE filing to account for any program or measure additions based on the performance of programs, market conditions, economics and consumer demand. The actual results for Vintage 2021 and projection of the results for Vintages 2022 and 2023, as well as the associated projected program expense for DEC's portfolio of programs, are summarized in the following table:

DEC System (NC & SC) DSM/EE Portfolio 2021 Actual Results and 2022-2023 Projected Results			
	2021	2022	2023
Annual System Net MW	947	1,108	992
Annual System Net GWh	637	814	786
Annual Program Costs (Millions)	$109.0	$158.5	$156.3

VII. EM&V ACTIVITIES

Q. PLEASE DESCRIBE THE COMPANY'S EM&V ACTIVITIES RELEVANT TO THIS PROCEEDING.

A. Evans Exhibit 11 summarizes the estimated activities and timeframe for completion of EM&V by program. Evans Exhibit 12 provides the actual and expected dates when the EM&V for each program or measure will become effective. Evans Exhibits A through F provide the detailed completed EM&V reports or updates for the following programs:

Evans Exhibit	EM&V Reports	Report Finalization Date	Evaluation Type
A	Low Income Weatherization Program 2016-2018	4/16/2021	Process and Impact
B	Power Manager 2019–2020	6/23/2021	Process and Impact
C	Online Savings Store Program 2021 Evaluation	11/30/2021	Process and Impact
D	K12 Education Program 2019-2020 Evaluation	12/2/2021	Process and Impact
E	Small Business Energy Saver Program 2019-2020	11/23/2021	Process and Impact
F	Interim Report for the EnergyWise Business Program 2020	2/5/2021	Impact

Q. HOW WERE EM&V RESULTS UTILIZED IN DEVELOPING THE PROPOSED RIDER 14?

A. The Company has applied EM&V consistently with the agreement among DEC, the Southern Alliance for Clean Energy, and the Public Staff and approved by the Commission in its *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice* issued on November 8, 2011, in Docket No. E-7, Sub 979 ("EM&V Agreement").

Actual participation and evaluated load impacts are used prospectively to update net lost revenues estimates. In addition, the EM&V Agreement provides that initial EM&V results shall be applied retrospectively to program impacts that were based upon estimated impact assumptions derived from industry standards (rather than EM&V results for the program in the Carolinas), in particular the DSM/EE programs initially approved by the Commission in Docket No. E-7, Sub 831 ("Sub 831"), with the exception of the Nonresidential Smart $aver Custom Rebate Program and the Low-Income EE and Weatherization Assistance Program.

For purposes of the vintage true-ups and forecast, initial EM&V results are considered actual results for a program and continue to apply until superseded by new EM&V results, if any. For all new programs and pilots approved after the Sub 831 programs, DEC will use initial estimates of impacts until it has EM&V results, which will then be applied retrospectively to the beginning of the offering and will be considered actual results until a second EM&V is performed.

All program impacts from EM&V apply only to the programs for which the analysis was directly performed, though DEC's new product development may utilize actual impacts and research about EE and conservation behavior directly attributed to existing DEC program offerings.

Because program impacts from EM&V in this Application apply only to the programs for which the analysis was directly performed, there are no costs associated with performing additional EM&V for other measures, other than the original cost for EM&V for these programs. As indicated in previous proceedings, DEC estimates that 5 percent of total portfolio program costs will be required to adequately and efficiently perform EM&V on the portfolio.

The level of EM&V required varies by program and depends on that program's contribution to total portfolio, the duration the program has been in the portfolio without material change, and whether the program and administration is new and different in the energy industry. DEC estimates, however, that no additional costs above 5 percent of total program costs will be associated with performing EM&V for all measures in the portfolio.

Q. WHICH PROGRAMS CONTAIN IMPACT RESULTS BASED ON CAROLINAS-BASED EM&V?

A. All of the filed EM&V studies, provided as Evans Exhibits A through F, were Carolinas-based.

VIII. <u>RIDER IMPACTS</u>

Q. HAVE THE PARTICIPATION RESULTS AFFECTED THE VINTAGE 2021 EXPERIENCE MODIFICATION FACTOR?

A. Yes. The EMF in Rider 14 accounts for changes to actual participation relative to the forecasted participation levels utilized in DEC's Vintage 2018

Rider EE. As DEC receives actual participation information, it can then update participation-driven actual avoided cost benefits from its DSM/EE programs and the net lost revenues derived from its EE programs. For example, as previously mentioned, the overall savings along with their related expenditures were less than those that were forecasted. As a result, the EMF will be reduced to reflect the lower costs, net lost revenues, and shared savings incentive (PPI) associated with its programs.

Q. HOW HAVE EM&V RESULTS BEEN INCORPORATED INTO THE VINTAGE 2021 TRUE-UP COMPONENT OF RIDER 14?

A. In accordance with the EM&V Agreement, all of the final EM&V results that have been received by DEC by December 31, 2021 have been applied prospectively from the first day of the month immediately following the month in which the study participation sample for the EM&V was completed. Accordingly, for any program for which DEC has received EM&V results, the per participant impact applied to the projected program participation in Vintage 2021 is based upon the actual EM&V results that have been received.

Q. PLEASE DESCRIBE HOW DEC CALCULATED FOUND REVENUES.

A. Consistent with the *Sub 1032 Orders* and with the "Decision Tree" found in Appendix A of the Commission's February 8, 2011 order in Docket No. E-7, Sub 831, and approved for the new portfolio in the *Sub 1032 Orders*, possible found revenue activities were identified, categorized, and netted against the net lost revenues created by DEC's EE programs. Found revenues may result from activities that directly or indirectly result in an increase in customer demand or energy consumption within DEC's service territory. Load-building activities such as these, however, would not be considered found revenues if they (1) would have occurred regardless of DEC's activity, (2) were a result of a Commission-approved economic development activity not determined to produce found revenues, or (3) were part of an unsolicited request for DEC to engage in an activity that supports efforts to grow the economy. On the other hand, found revenues would occur for load growth that did not fall into the previous categories but was directly or indirectly a result of DEC's activities. Based on the results of this work, all potential found revenue-related activities are identified and categorized in Evans Exhibit 4. Additionally, consistent with the methodology employed and approved in Docket No. E-7, Sub 1073, as discussed in detail in the testimony of Company witness Timothy J. Duff in Docket No. E-7, Sub 1050, DEC also proposes to adjust the calculation of found revenues to account for the impacts of activities outside of EE programs that it undertakes that reduce customer consumption – i.e., "negative found revenues."

Q. PLEASE DISCUSS THE ADJUSTMENT THAT DEC PROPOSES TO MAKE TO ITS FOUND REVENUE CALCULATION TO ACCOUNT FOR NEGATIVE FOUND REVENUES.

A. DEC continues to aggressively pursue, with its outdoor lighting customers, the replacement of aging Mercury Vapor lights with Light Emitting Diode ("LED") fixtures. Because one of the activities that DEC includes in the calculation of found revenues is the increase in consumption from new outdoor lighting fixtures it has added, it is logical and symmetrical to also account for the reduced energy consumption resulting from the outdoor lighting efficiency upgrades. By moving customers past the standard High Pressure Sodium ("HPS") fixture to an LED fixture in this replacement process, DEC is generating significant energy savings. Because these energy savings are outside of DEC's approved EE programs, they are not captured in DEC's calculation of lost revenues. The Company does not take credit for the entire efficiency gain from replacing Mercury Vapor lights, but rather only the efficiency gain from replacing HPS with LED fixtures. In addition, DEC has not recognized any negative found revenues in excess of the found revenues calculated; in other words, the net found revenues number will never be negative and have the effect of increasing net lost revenue calculations. In Docket No. E-7, Sub 1073, the Commission found inclusion of negative found revenues associated with the Company's initiative to replace Mercury Vapor lighting with LED fixtures in the calculation of net found revenues to be reasonable, and the Company proposes to continue this practice in Rider 14.

Q. HAS THE OPT-OUT OF NONRESIDENTIAL CUSTOMERS AFFECTED THE RESULTS FROM THE PORTFOLIO OF APPROVED PROGRAMS?

A. Yes, the opt-out of qualifying nonresidential customers has had a negative effect on DEC's overall nonresidential impacts. For Vintage 2021, DEC had

4,461 eligible customer accounts opt out of participating in DEC's nonresidential portfolio of EE programs. In addition, DEC had 4,777 eligible customer accounts opt out of participating in DEC's nonresidential DSM programs. Notably, during 2021, 627 opt-out eligible accounts opted-in to the EE portion of the Rider, and 204 opt-out eligible accounts opted-in to the DSM portion of the Rider.

Q. PLEASE EXPLAIN THE DECREASE IN THE NUMBER OF OPT-OUTS IN 2021 COMPARED TO 2020.

A. The reduction in the number of customers having opted-out is largely due to the ongoing impacts of the COVID pandemic. In particular, the number of large commercial customers eligible to opt-out due to their annual consumption exceeding the 1,000,000 kWh opt-out threshold, set forth in Commission Rule R8-69(d), has lessened. The overall impact is a more than ten percent decrease in customers opting-out.

Q. ASIDE FROM THESE COVID-RELATED REDUCTIONS, IS THE COMPANY CONTINUING ITS EFFORTS TO ATTRACT THE PROGRAM PARTICIPATION OF OPT-OUT ELIGIBLE CUSTOMERS?

A. Yes. Increasing the participation of opt-out eligible customers in DSM and EE programs is very important to the Company. As discussed earlier, DEC continues to evaluate and revise its nonresidential portfolio of programs to accommodate new technologies, eliminate product gaps, remove barriers to participation, and make its programs more attractive. It also continues to leverage its Large Account Management Team to make sure customers are informed about product offerings and the March Opt-in Window.

IX. PPI CALCULATION

Q. PLEASE PROVIDE AN OVERVIEW OF THE COST RECOVERY AND INCENTIVE MECHANISM APPROVED IN DOCKET NO. E-7, SUB 1032.

A. Pursuant to the related *Sub 1032 Orders*, the Mechanism allows DEC to (1) recover the reasonable and prudent costs incurred for adopting and implementing DSM and EE measures in accordance with N.C. Gen. Stat. § 62-133.9 and Commission Rules R8-68 and R8-69; (2) recover net lost revenues incurred for up to 36 months of a measure's life for EE programs; and (3) earn a PPI based upon the sharing of a percentage of the net savings achieved through DEC's DSM/EE programs on an annual basis. Prior to 2022 the shared savings percentage is 11.5% and, starting in 2022, this percentage was lowered to 10.6%. The PPI is also subject to certain limitations that are set forth in the Cost Recovery and Incentive Mechanism.

Q. PLEASE EXPLAIN HOW DEC DETERMINES THE PPI.

A. First, DEC determines the net savings eligible for incentive by subtracting the present value of the annual lifetime DSM/EE program costs (excluding approved low-income programs as described below) from the net present value of the annual lifetime avoided costs achieved through the Company's programs (again, excluding approved low-income programs). The Company then multiplies the net savings eligible for incentive by the applicable shared savings percentage to determine its pretax incentive.

Q. PLEASE EXPLAIN WHETHER DEC EXCLUDES ANY PROGRAMS FROM THE DETERMINATION OF ITS PPI CALCULATION.

A. Consistent with the *Sub 1032 Orders*, DEC has excluded the impacts and costs associated with the Neighborhood Energy Saver Program and the Income-Qualified EE and Weatherization Program for Individuals from its calculation of the PPI. At the time the program was approved, it was not cost-effective, but was approved based on its societal benefit. Beginning in 2022 the Income-Qualified EE and Weatherization programs are eligible to receive a program return incentive ("PRI"). The PRI is determined by multiplying the net present value of avoided cost by 10.6 percent. As with the PPI, the PRI is also subject to certain limitations that are set forth in the Cost Recovery and Incentive Mechanism approved by the Commission in Docket No. E-7, Sub 1032 on October 20, 2020.

X. COLLABORATIVE

Q. PLEASE SUMMARIZE THE COLLABORATIVE ACTIVITIES OCCURRING IN 2021.

A. The Collaborative met for formal meetings in January, March, May, July, September and November. Between meetings, interested stakeholders joined conference calls in February, April, May, August, October, and December to zero in on certain agenda items or priorities which could not be fully explored during the formal meetings, such as new program development ideas, program modifications and pandemic-related issues. Collaborative members gained a deeper understanding of the issues facing Duke's DSM/EE programs and brought the Company valuable feedback and perspective. Meetings and calls have begun and will continue in a similar fashion through 2022 as well.

Q. HAS THE COLLABORATIVE EXAMINED THE REASONS FOR THE FORECASTED DECLINE IN SAVINGS AND EXPLORED OPTIONS FOR PREVENTING OR CORRECTING A DECLINE IN FUTURE DSM/EE SAVINGS?

A. Yes, the forecasted decline in savings underpinned all the Collaborative's discussions in 2021. Since the decline is attributed primarily to the changing lighting standards and widespread adoption of LEDs, the members made following up on new program ideas a priority. The Company is investigating several of those ideas, as well as other ideas resulting from the ongoing work of a number of stakeholder groups, to determine if they can be developed into cost-effective programs now or in the future.

Q. HAS THE COLLABORATIVE LOOKED SPECIFICALLY AT EE PROGRAMS TO ASSIST LOW-INCOME CUSTOMERS IN SAVING ENERGY?

A. Yes, the Collaborative has been focused on assisting low-income households. The Company continues to explore the partnerships members have helped us develop with organizations which provide weatherization assistance and anticipates exploring more opportunities in the coming year. The Collaborative members have been active in other working groups during 2021 and are bringing what they have learned there to the work they do for DSM/EE programs.

The group will continue to examine customer behaviors and potential adjustments to the program portfolio as market conditions change. Additionally, members will be key contributors as the Company seeks ways to help vulnerable customers with their energy insecurity.

XI. FIND IT DUKE

Q. WHAT EFFORTS DOES DEC MAKE TO IDENTIFY AND RECRUIT HISTORICALLY DISADVANTAGED BUSINESSES FOR PARTICIPATION IN FID?

A. The program has partnered with Duke Energy Supplier Diversity, an internal organization within Duke Energy, and the Company has established a cross jurisdictional team that is responsible for defining disadvantaged business terms, goals, and tactical plans for Trade Ally identification and recruitment. In 2021, the Company applied internal data sources and external surveys to the existing Trade Ally network for identification and classification. As a result of this research, Duke Energy identified the following:

Supplier Diversity Initial Email Responses

total companies surveyed	# of companies	Responded Diverse	Responded not diverse	African Amer	Women Owned	Service Disabled	Native Amer	Veteren	Hispanic Amer	total responses
DEC	688	22	81	3	13	1	0	6	2	106

Based on this information, Duke Energy is developing plans to communicate with trade-related businesses and engage in recruitment opportunities during 2022. Additionally, with respect to these recruitment opportunities, Duke Energy has begun engagement with the following organizations:

- National Minority Supplier Development Council
- Woman's Business Enterprise National Council
- African American Chamber of Commerce
- National Veteran Business Development Council
- National LGBT Chamber of Commerce

Additionally, an LOE (level of effort) was signed on November 22, 2021 with the FID program vendor to build an automated process that will capture supplier diversity classification upon each new Trade Ally registration and allow FID to track success. Work is targeted for completion by March 2022 with results from current research being incorporated into the database once the vendor work is completed.

Q. HOW MANY HISTORICALLY DISADVANTAGED BUSINESSES ARE CURRENTLY PARTICIPATING IN FID?

A. There are currently 22 registered Trade Allies in DEC classified as Disadvantaged Businesses. Four of these Trade Allies are enrolled in the FID channel.

Q. PLEASE PROVIDE THE NUMBER OF HISTORICALLY DISADVANTAGED BUSINESSES PARTICIPATING IN FID THAT ARE FEMALE-OWNED BUSINESSES, MINORITY-OWNED BUSINESSES, AND ALL OTHER SUBCATEGORIES DESCRIBING THE NATURE AND OWNERSHIP OF SUCH BUSINESSES.

A. There are currently two female and two minority-owned businesses participating in FID.

Q. WHAT IS THE TOTAL NUMBER OF BUSINESSES CURRENTLY PARTICIPATING IN FID?

A. At the end of 2021, there were 74 active Trade Allies in the FID channel.

Q. IN 2021, WHAT WAS THE AVERAGE DOLLAR VALUE FOR WORK PERFORMED BY HISTORICALLY DISADVANTAGED BUSINESSES IN FID?

A. The average reported dollar value for work performed by historically disadvantaged businesses is approximately $2,500. Three of the four disadvantaged Trade Allies support insulation services which are lower in project cost compared to other services such as HVAC installation. The fourth disadvantaged Trade Ally enrolled in FID in late 2021 as a solar installer and has sold one job as of the end of that year.

Q. IN 2021, WHAT WAS THE AVERAGE DOLLAR VALUE OF WORK PERFORMED BY CONTRACTORS THAT WERE NOT HISTORICALLY DISADVANTAGED BUSINESSES?

A. The average reported dollar value of work performed by contractors that were not historically disadvantaged businesses is reported to be approximately $5,600. Notably, the non-disadvantaged Trade Allies mainly consist of HVAC installation services, which carry higher project costs for equipment replacements.

Q. DID DEC FILE ITS CALCULATIONS AND WORKPAPERS SHOWING THE FID REFERRAL CHANNEL COSTS AND

REVENUES EXCLUDED AND METHOD(S) USED TO EXCLUDE THOSE AMOUNTS?

A. Please refer to Evans Exhibit 14. Based on FID activity during calendar year 2021, 15.2 percent of revenue was classified as Non-DSM/EE. Using this allocation, expenses totaling $55,748 were removed from the DSM/EE revenue requirement along with the $70,853 in Non-DSM/EE revenue. In addition to revenues and expenses, a change in the PPI totaling $1,737 was accounted for. As a result of these adjustments, the DSM/EE revenue requirement was increased by $13,368. The total net non-utility allocation totaled $15,105.

XII. RESERVE MARGIN ADJUSTMENT FACTOR

Q. **DID DEC WORK WITH THE PUBLIC STAFF TO CODIFY THE RMAF METHODOLOGY INTO THE MECHANISM, AS REVISED BY THE 2020 SUB 1032 ORDER?**

A. Yes. The Company and the Public Staff worked together to develop mechanism language concerning the RMAF for the Commission's consideration and approval. The redline contained on Evans Exhibit 18 illustrates the proposed RMAF related modifications to subsection 20 of the Mechanism.

XIII. COMMISSION APPENDIX A QUESTIONS[1]

Q. DESCRIBE ANY IMPACT THAT THE FULL DEPLOYMENT OF AMI AND CUSTOMER CONNECT HAS HAD OR IS EXPECTED TO HAVE ON THE IMPLEMENTATION OF EE AND DSM PROGRAMS AND RIDER CALCULATIONS.

A. At this time, the deployment of AMI and Customer Connect has not had any direct impact on the implementation of EE and DSM programs and rider calculations. Moreover, DEC does not expect the full deployment of AMI and Customer Connect to directly impact the implementation of EE or DSM programs. The Company will continue to review whether the deployment of AMI and Customer Connect can impact the implementation of EE and DSM programs and rider calculations to the benefit of customers.

Although the use of AMI does not impact implementation of DSM/EE programs, it has an indirect, positive impact on the EM&V of the EE and DSM programs that are used in the rider calculations. Through the use of AMI, EM&V-verified impacts used in the rider calculations may now be derived from analytical approaches that are better able to tease out household-level energy and demand savings.

Q. HAS DEC IDENTIFIED ANY WAYS TO LEVERAGE AMI AND CUSTOMER CONNECT TO INCREASE THE EFFECTIVENESS AND/OR REDUCE THE COST OF ITS EE AND DSM PROGRAMS?

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[1] This section of testimony is in response to the *Order Requiring Filing of Additional Testimony*, issued in this docket on December. 17, 2021.

A. DEC is always interested in exploring ways to increase the effectiveness or reduce the cost of its EE and DSM programs. At this time, however, DEC has not identified any ways beyond that discussed above to leverage AMI and Customer Connect to materially increase the effectiveness and/or materially reduce the cost of its EE and DSM programs.

Q. DESCRIBE IN DETAIL ANY COST SAVINGS OR INCREASED COST EFFECTIVENESS THAT CAN BE ATTRIBUTED TO DEC'S DEPLOYMENT OF AMI AND CUSTOMER CONNECT.

A. Deployment of AMI and Customer Connect may produce cost savings associated with EM&V activities in the future. Any such savings would increase the cost effectiveness of impacted programs; however, DEC cannot project the cost savings or increased cost effectiveness at this time that could be attributed to DEC's deployment of AMI and Customer Connect.

Q. 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. As discussed earlier, DEC is making progress on expanding the use of AMI in its program evaluations. For demand response evaluations, quarterly or semi-hourly AMI data is the primary data utilized for analysis. For EE savings, evaluators have begun to incorporate hourly and/or daily AMI interval data into the analysis, which increases the analytical capabilities to estimate household-level energy and demand savings.

Q. PROVIDE A TABLE COMPARING THE PERFORMANCE OF DEC'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.

A. Please refer to Evans Exhibit 15.

Q. INCLUDE IN THE SAME TABLE A COMPARISON OF DEC'S FORECASTED DSM/EE KWH SAVINGS AND ACTUALLY ACHIEVED KWH SAVINGS DURING THE SAME TEST YEAR PERIODS STATED ABOVE.

A. Please refer to Evans Exhibit 15.

Q. PROVIDE A RESPONSE TO PUBLIC STAFF WITNESS WILLIAMSON'S TESTIMONY IN DOCKET NO. E-7, SUB 1249 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.

A. As the Commission's question reflects, most of the Company's residential customers may obtain data about their energy usage from two sources – AMI informed services and the MyHER EE program. All Duke Energy customers, at their option, may go online to see their hourly usage AMI data, regardless of whether they receive a My Home Energy Report. In contrast, residential customers that receive a My Home Energy report receive data about their energy usage *combined* with specialized energy saving tips. To distinguish the EE savings resulting from MyHER, as opposed to AMI information services, the Company has developed the following evaluation method. First it has "treatment group customers," numbering approximately 1,740,000, which are MyHER recipients. Next, the Company also has "a control group," set of residential customers, numbering approximately 133,000, that the Company has determined do not and will not receive the MyHER report. Under the MyHER evaluation methodology, the control group serves as the baseline against which MyHER impacts are measured. Thus, any reduction in energy consumption among MyHER recipients is directly attributed to the tips and normative messaging available only through the MyHER program.

Q. HOW DOES DEC DISTINGUISH BETWEEN THE ORGANIC ENERGY SAVINGS IMPACT OF USING AMI VERSUS THE ENERGY SAVINGS FROM THE MYHER PROGRAM?

A. As indicated above, both MyHER treatment and control customers have access to AMI informed services. Only MyHER treatment customers have access to MyHER reports that not only engage and educate customers around their energy usage, but also empower them to become more efficient through the provision of actional energy efficiency tips; therefore, any changes in consumption can be directly attributed to the MyHER program.

Q. DOES DEC HAVE METRICS THAT SHOW THE NUMBER OF MYHER PARTICIPANTS THAT HAVE UTILIZED NEW AMI OR 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 following table provides monthly data for the period April 2021 through December 2021:

- The number of customers in DEC who have accessed the MyAccount AMI charts showing usage at a level less than standard one-month billing;
- The number who are part of the MyHER Treatment Group; and
- The percentage of MyHER participants that this quantity of customers represents.

Month	*Count[1]*	*MyHER Treatment Count*	*Percentage of MyHER Participants*
4-21	*15554*	*9007*	*0.65%*
5-21	*14988*	*8905*	*0.65%*
6-21	*15102*	*8146*	*0.59%*
7-21	*18872*	*9299*	*0.68%*
8-21	*18430*	*8566*	*0.62%*
9-21	*15868*	*7191*	*0.52%*
10-21	*12758*	*5823*	*0.42%*
11-21	*12686*	*5828*	*0.42%*
12-21	*14634*	*6771*	*0.49%*

- *[1]Number of DEC customers accessing MyAccount AMI charts*

Q. PROVIDE A COPY OF THE MOST RECENT MYHER EM&V REPORT.

A. Please refer to Evans Exhibit 16.

Q. DESCRIBE HOW DEC WILL INTEGRATE ITS NEW DYNAMIC PRICING RATES INTO ITS EXISTING EE AND DSM PROGRAMS.

A. As with other DEC rate schedules, customers using the new dynamic pricing rates will be eligible to participate in EE and DSM programs per the availability section of the relevant tariffs. For example, Schedule SGSTC customers would be eligible for the Business Energy Saver program, but those customers would not be eligible for PowerShare Rider PS because that tariff specifically limits availability to customers on Schedules LGS, I, OPT-V and HP. Customers on dynamic pricing rates would be treated the same as other participants in DSM/EE programs.

Q. DESCRIBE ANY IMPACTS THAT DEC'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. At this time DEC has not identified how its new dynamic pricing tariffs may impact existing EE and DSM program marketing, implementation, cost-effectiveness calculations and evaluation. It is expected that those impacts will be reflected in future evaluation, measurement and verification reports.

Q. **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. Please refer to Evans Exhibit 17.

Q. DESCRIBE ANY IMPLICATIONS THAT SL 2021-165 WILL HAVE OR IS EXPECTED TO HAVE ON DEC'S EE AND/OR DSM PROGRAMS AND THE RIDER APPLICATION. FOR EXAMPLE, DESCRIBE WAYS IN WHICH DEC COULD OR WILL INCORPORATE EE PROGRAM SAVINGS INTO ITS CALCULATIONS RELATED TO CARBON PRODUCTION TO

MEET THE CARBON REDUCTION GOAL MANDATED IN SL 2021-165.

A. The Company continues to evaluate how the carbon reduction associated with EE program kWh savings will be reported as part of future annual EE/DSM Rider filings. The Company currently has value associated with the average annual carbon intensity of generation; however, to accurately reflect the impacts of EE/DSM programs in future annual EE/DSM Rider filings, the Company is currently pursuing the development of reasonable estimates of the carbon intensity of system generation on an hourly basis.

XIV. <u>CONCLUSION</u>

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

MS. FENTRESS: The witnesses are available for questions from the Commission. And, if it pleases the Commission, I can start off by reading the first question to the witnesses.

COMMISSIONER BROWN-BLAND: Yes, Ms. Fentress. We would like to hear the responses related to the Order on additional testimony at this time.

MS. FENTRESS: Certainly.

COMMISSIONER BROWN-BLAND: And if you would walk us through that as well as the related exhibit that were filed as part of that process.

MS. FENTRESS: I'll do so. Thank you.

BY MS. FENTRESS:

Q Ms. Williams, has DEC 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 Yes. The Company is exploring additional opportunities to educate and gauge and empower customers to reduce demand and energy savings in their home. Items that have been explored and are currently in development include providing alerts to MyHER participants, that AMI data has detected unexpected energy spikes in participants' appliances such as HVAC systems, refrigerators, et cetera.

The second opportunity, there is improving modeling to identify discrepancies between MyHER participants' self-reported heating systems and types and what AMI detects as the most likely heating system. This will, in turn, provide more accurate tips tailored to the specific heating type in the participants' home.

The third opportunity is identifying through AMI data, likely My HER participants with pools, spas, hot tubs, as well as those micro participants, which charge electric vehicles, and tailoring those tips are programs to the treatment group on how to use less electricity with these different items.

In addition, the Company is in exploratory discussions to potentially provide tips to MyHER participants who are enrolled in Time of Use and other dynamic pricing tariffs. AMI, in this respect, will be critical to understand any incremental decreases in energy or demand savings achieved by these participants.

MS. FENTRESS: Thank you. Presiding Chair, as you noted at the beginning of the hearing, the Company has filed the responses to Question 2 as an exhibit. It is the second page. I believe it has been passed out as titled "Commission Question 2." It is Panel Cross-examination Exhibit 1. This table represents the historical and projected for 2023 and 2024, North Carolina Energy Savings for the MyHER Program.

COMMISSIONER BROWN-BLAND: All right. This document will be identified as I referenced it earlier, but also as it was marked when prefiled. So it is Panel Cross-examination Exhibit 1.

(WHEREUPON, Panel Cross-examination Exhibit 1 is identified.)

MS. FENTRESS: Thank you. And unless the Commission has any questions on that table?

COMMISSIONER BROWN-BLAND: Yes. We'll allow Commissioner Hughes to ask a question.

EXAMINATION BY COMMISSIONER HUGHES:

Q Yes. Could you just confirm that this exhibit, where it says the participants and the total projected savings, that that is North Carolina and not system-wide savings or -- just to clarify that that is indeed North Carolina savings?

A (Ms. Holbrook) I believe that is the North Carolina allocated savings for the program.

Q Okay.

COMMISSIONER BROWN-BLAND: All right, Ms. Fentress. You can continue.

MS. FENTRESS: Certainly. If you turn to the next page of the cross-examination -- Panel Cross-examination Exhibit 1, it is Question 3. If the Commission has any questions, that is before you right now.

COMMISSIONER BROWN-BLAND: And could you just go ahead, for context, and read Question 3.

MS. FENTRESS: Certainly. "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." The Company has presented the response to Question Exhibit 3 and Panel Cross-examination Exhibit 1.

COMMISSIONER BROWN-BLAND: And Ms. Fentress, could you tell us with regard to the Table 2 and 3, is there a particular witness who is sponsored or who prepared?

MS. FENTRESS: I believe the panel is able to answer the questions, and they are prepared to answer as appropriate.

COMMISSIONER BROWN-BLAND: So the panel -- I take it the panel is --

MS. FENTRESS: You could probably direct this one to Ms. Holbrook.

COMMISSIONER BROWN-BLAND: Well, not so much for a question, but just in terms of preparation the panel that worked on this together.

MS. FENTRESS: Yes.

COMMISSIONER BROWN-BLAND: All right. And continue.

MS. FENTRESS: Certainly.

CONT'D EXAMINATION BY MS. FENTRESS:

Q Question for Ms. Holbrook. Can you explain how the anticipated savings shown in the table above are incorporated or reflected in future load projections, for example, load projections presented in the Carbon Plan?

A (Ms. Holbrook) Yes. So we use our projections in a couple of different applications, one being the IRP, which is historically, been what we do. And for that, we give them a five-year projection of our energy efficiency impacts. They use those in the base IRP for those first five years, and then take that off the market, potential study, and kind of extrapolates that for a number of years, so hit that mark of potential study as well.

I believe in the Carbon Plan, it was a generic 1 percent of eligible load that was used with the confidence that we've got this program with the very high saturation point and other programs in addition to efforts ongoing to hit that goal in the Carbon Plan.

Q Ms. Holbrook, I'll just ask you to clarify. When you say high saturation point, do you mean the program is very popular?

A The program is very popular. I believe the current opt-out rate, customers have to opt out of these reports that they no longer want to receive them. The current opt-out rate is about 0.27 percent. So that means 17 new customers opted out this year, so it's a very low opt-out rate.

Q Thank you. I'll move on to Question 5. And I think this will go to Ms. Williams, but provide the estimates of the number of MyHER participants that began participation for the first time during each Rider Rate year.

If the Commission turns to the last page of the exhibit, that is the table in response to Question 5, and that is the MyHER customer account participation total and new participants.

COMMISSIONER BROWN-BLAND: All right. Is that the last one?

MS. FENTRESS: I believe it is.

COMMISSIONER BROWN-BLAND: Is there any cross-examination for these witnesses based on answers to the Commission's Order on additional testimony? Or, any cross-examination, generally, for this witness panel?

(No response)

COMMISSIONER BROWN-BLAND: Are there questions from the Commission? Chair Mitchell.

CHAIR MITCHELL: I just have a quick few.

EXAMINATION BY CHAIR MITCHELL:

Q I'm interested in opt-outs, so, Ms. Holbrook, these may be coming to you, but anybody chime in. Reviewing the testimony of Forest Bradley-Wright, who I know is not before us today, but I'm hoping y'all have had a chance to review it. He testifies that 61 percent of DEC's commercial and industrial energy. I think he meant to say customers that were eligible to opt out, opted out. I'm sort of paraphrasing there, but if you will look at his testimony, it appears on page 7, beginning at line 18, 61 percent of DEC's commercial and industrial energy consumption opted out.

So help me understand, and I know there's testimony in the docket from the Company about specific numbers of customers. It appeared originally in Mr. Evans' testimony, and I'm sure you-all are very familiar with those numbers.

Just help me understand, really from my own knowledge, for those customers that opt out, that don't participate in funding the revenue requirement associated with the DSM/EE programs for the Company, can you ballpark for me what cost burden are they avoiding by opting out? And I recognize that's a complicated question and it's highly dependent on the usage of those customers, but is there any way you can just ballpark it?

A (Ms. Holbrook) I don't think I would be qualified to ballpark it at this point, unless we've got like, you know, the rate times, some assumed usage. I don't have that off the top of my head.

A (Ms. Powers) The only thing I would offer is that for DEP customers, all customers in every class are charged the kWh rate that is approved by the Commission. And if you are an opt-out customer, then you receive a credit on the bill that corresponds to whatever the approved DSM/EE rate was at that time.

So customers can opt out of the EE Rider or they can opt out of the DSM rider or they can opt out of both, and so they would get their good credit back on their bill. I was recently looking at credits on bills, and some of them were as high as $2,000 for the month. But I didn't look at what their usage is, but you can multiply their kWh usage by whatever the approved rate is on the DSM/EE Rider, and that's how you would --

Q Okay. And so you said for DEP. Did you mean DEP or did you mean DEC?

A Oh, yeah. That's right. I did mean DEP. That's the way it works for DEP. For DEC, they are charged a different rate which is the standard rate and has the DSM/EE rate subtracted for that.

Q Okay.

A They don't seem to line item --

Q So it's not a credit. It's just they're not actually charged at the outset. Okay.

A Yes.

Q And you can't even get me in the ballpark of what that cost burden that they're avoiding would be?

A Well, it varies greatly, depending on their usage. So, you know, it can be a significant expense for commercial/industrial customers that are energy intensive.

Q Okay.

A But I would present to --

Q Is it fair to say that those customers that opt

out are avoiding a cost burden?
A They certainly see it that way. However, in order to opt out, they'd have to self-certify that they are undertaking energy efficiency measures of their own, so the presumption is that they are incurring their own cost to save energy and demand.
Q Right.
A And that is not being subsidized by the customers.
Q Right. Understood. And thank you for pointing that out.

CHAIR MITCHELL: Okay. I have nothing further. Thank y'all for answering those questions.

COMMISSIONER BROWN-BLAND: Any other questions? Commissioner Clodfelter.

COMMISSIONER CLODFELTER: May I follow up on Chair Mitchell's question to you.

EXAMINATION BY COMMISSIONER CLODFELTER:
Q The Statute permits the Company or the Public Staff to challenge opt-outs. Do you know if that's ever been done?
A (Ms. Powers) We review the opt-outs frequently. Just recently have gone through a review because

they have to meet the one million kilowatt-hour a year annual usage threshold.
Q Right.
A And there are many customers that haven't reached that threshold in 2020 and 2021 based on what's been going on with the pandemic, and so we've been reviewing those and adding them back into the Rider if they have it. So I don't know if that's what you would consider a challenge, but it's definitely maintained, those roles, and make sure that folks are only opting out that qualification.
Q Thank you for that information. That's helpful to know that, and I appreciate knowing that. I was actually asking a slightly different question. Have you ever -- do you know if the Company has ever challenged the certification which customer says well, I'm eligible because I meet the threshold, but you don't think they've done what they're supposed to do?
A You know, we believe that for these customers, and they have told us that energy conservation for them is a competitive advantage, so they are intrinsically motivated to drive their energy

costs down as low as so they can get them. So we have -- to my knowledge we have not. There are large account managers that probably follow up on that pretty frequently as they try to promote our programs and work in the best interest of the accounts that they manage, but I'm not aware that from -- of us challenging their self-certification.

Q Okay. Similarly, the Statute also allows the Company to petition the Commission to set the opt-out standards for commercial customers. Do you know if the Company's ever asked the Commission to consider particular sets of standards for who may opt out on one of the commercial class?

A I am not aware of that.

COMMISSIONER CLODFELTER: Thank you.

COMMISSIONER BROWN-BLAND: Chair Mitchell.

CHAIR MITCHELL: Just one more.

CONT'D EXAMINATION BY CHAIR MITCHELL:

Q I want y'all to make sure I'm thinking about this correctly. Because certain number of customers opt out, does that mean that fewer customers are paying for or absorbing the revenue requirement?

A (Ms. Holbrook) Yes. Yes, that's correct.

CHAIR MITCHELL: All right. Thank you.

COMMISSIONER BROWN-BLAND: Commissioner Hughes.

COMMISSIONER HUGHES: Yes. Thank you.

CONT'D EXAMINATION BY COMMISSIONER HUGHES:

Q So in the testimony, there's still evidence that there continues to be an ongoing disagreement as to how well the process for reviewing and implementing new programs is working with the EE collaborative. Could you just say briefly what the main areas of disagreement are, and could more frequent reporting of status with greater transparency help to track the progress? What other suggestions do you have to improve the collaboration?

A (Ms. Powers) Well, I think the collaboration is actually pretty good, and I think that we've made great strides in the past few years to improve the collaboration between the Company and the DSM/EE collaborative.

The process for implementing new programs is complex, as I've spelled out in my testimony, but I think it's important to provide a little context here, because that testimony -- witness Forest Bradley-Wright's testimony would seem to indicate that the Company isn't doing enough, that we're not interested enough in new programs, that we're not motivated, and that we need the Commission or stakeholders to push us to develop new programs.

And I would say that's just false. And for context, DEC is the number one utility in the southeast for energy savings. We save more energy than any other utility in the southeast. That's dealing with this climate and this mix of electric heating, and all the other things that go into it. Number 2 is Duke Energy Progress and number 3 is so far in the rearview mirror that they don't come anywhere close, so we are highly motivated.

We also exceed the national average. So on a national level, we are highly motivated when you compare us to those other utilities. We also have a regulatory mechanism that allows us to earn on energy efficiency. And we believe that energy efficiency is the low cost resource for our customers, so we're motivated on that front as well.

Now, we have the Carbon Plan and a number of environmental goals that push us to do as much energy efficiency as we possibly can. We have included 1 percent in our Carbon Plan, but we are hopeful and ambitious that we can meet and exceed that. We are conducting a market potential study where we're looking for any and all opportunities to have more energy efficiency. We think it's a good thing for our customers, it's a good thing for our company, it's a good thing for our shareholders, and it's a good thing for our environment in general.

So we are highly motivated. It's just difficult. It is hard to turn ideas. Even when they're ideas that another utility has implemented well, when you bring it to the Carolinas and you look at what our avoided costs are, and our constraints, and our market, and our, you know, heating and cooling, and obligations, it's just hard to do.

We have to have programs that are cost-effective, that are scalable, that are commercially viable. That is a hard threshold to hit. But, rest assured, if we can get there, we are getting there. We have a track record that we are saving as much energy as we possibly can, and we are committed to saving that and more in the future. It's just going to take a while. I think what you have in the Collaborative, and it's one of the strengths of the Collaborative, is that we have a lot of people representing their individual interests and organizations and constituents, and everybody is bringing that focus, their particular focus the Collaborative.

But -- so it looks like we should be able to move faster from where they're sitting, but Duke is required to put programs that benefit all the customers. We have to have a much broader vision, and that takes -- that takes a little more time to get it to work out. Do I think that a schedule would help? No, I really don't. I think that would probably slow us down because we would be spending time trying to prepare reports rather than doing the work that we actually need to do, which is evaluate these programs, the market.

The interest level among our

customers, the availability of the appropriate equipment, the availability of vendors and implementors to help us get that equipment to the market. It's really complex and I don't think we need to add another layer of complexity to it.

Q Thank you. Just a quick follow-up. The Collaborative meetings, are there interim status presentations on some of the programs that I think maybe the intervenors, to use your words, are impatient about where they are in the pipeline and when they don't meet certain criteria, is that presented?

A Yes. That's something that we haven't been great at in the past. We've made a concerted effort since early 2021 to be better so that members don't feel like they just turn these ideas over and then we've put them in this black box and they never see them again.

So we do have regular updates. We have solutions developers that participate in our meetings. We try to keep the Collaborative abreast of any and all progress. Even if that progress is, it's not viable at this time, but we're doing better about that.

Q Okay. So that's going to continue and --

A Yes, sir.

Q And we will never have a disagreement in the future?

A Never, ever.

Q Okay. I think that's fine for that. So multiple parties have shared concern that there's an extremely large percentage of residential and overall portfolio savings coming from the behavioral program, from the MyHER Program. How is DEC planning to increase longer life measures for customers and bring greater balance of savings impacts to the portfolio? I mean, it seems to be really -- I mean, to all of your accolades that I agree with, seem a lot of them seem to fall for residential on the backs of the MyHER Program.

So could you just say about how you're trying to diverse it, diversify it?

A Well, I think witness Holbrook explained why that is. This is an opt-out program. So with the exception of the control group that we use for EM&V purposes, all of our customers are MyHER participants. That's a lot of volume. The other programs that we have, have to reach individual customers as they express the desire to participate, so like Home Energy House Call. They actually have to make a call and schedule an appointment. So there's more of a commitment, and it's not as convenient as just having something magically appear in your mail or in your inbox.

Some of our other programs, particularly the ones that have long measure lots, requires upfront capital. You know, replacing your air conditioner with a heat pump is a great measure, and it has a long life and it's very effective. It's also expensive. So that's why you see so much of our savings come from MyHER as opposed to all the other programs that we have.

That being said, we are working on ways to get longer-lived measures out to our customers. Not just for our portfolio, but because we know that that's what's going to help them save the most money for the longest amount of time.

One of the things I can say

particularly we're working on is the Tariff On-Bill Program, which is part of our rate case settlement that we've been working in collaboration. I see some stakeholders nodding their heads over there because they know we've been working hard on it and that we're making good progress. And, hopefully, that will help to address a lot of the concerns that you just raised.

Q Okay. So that was my follow-up. So you think moving in the future we'll see just that playing a smaller percentage of the savings for the entire portfolio? Not because it's going down but because --

A There's simply other areas are coming up. We certainly hope so.

Q Okay. So this is just a question, just to shift gears a little bit, but would it be reasonable to speculate that someone that tries to participate in a voluntary EE program to save money might also be more likely than the average customer that did not -- that didn't seek out a voluntary EE program to volunteer or to choose a time-of-use rate structure?

So, in other words, do you think there's the same type of customer that is interested in EE but also would be interested in time-of-use? So is it a completely different customer, in your opinion?

A I don't think you can draw a straight line between that. You're talking about a level of engagement with their energy use. It's a lot higher for a time-of-use rate than it is for energy efficiency. There could also be other reasons why a customer would be interested in energy efficiency that aren't necessarily savings, you know, bill savings. So there's probably some overlap, but I don't think you can say that it's a correlation or not a very close one.

Q Okay. So for that overlap, if there is some overlap, does Duke have any type of cross-marketing so that, you know, once you get word that someone signed up for one of these programs, there's a specific targeted message to try to get them to enroll in the other? Just taking advantage of we're all marketed based on our, you know, past decisions, so is that something -- is that kind of level marketing occurring?

A That's one of the things that witness Williams mentioned in her response to the first cross-examination question that we are looking at through the home energy reports, is to be able to market those dynamic pricing schedules.

A (Ms. Williams) That is in exploratory discussions right now. I'm very early in that process.

Q So in the past, has Duke done some of that, kind of, cross-marketing of somebody signed up for one thing and it triggers to be --

A (Ms. Powers) For the Energy Efficiency and Demandside Management programs, yes. For time-of-use rates, not to knowledge.

Q Okay. Thanks. So the EM&V Report for the MyHER Program, which was very comprehensive, it recommends increased promotion of the MyHER interactive portal. I'm curious what the starting point is and how you will measure increased use if you do choose to follow that recommendation.

It seemed like with anything online, there's a lot of ability to track metrics. So do you have a goal for how many unique customers will visit the portal in 2023? For people that do visit, how many times do they visit the site in a particular year? Will you measure those types of things? Is that how you promote or is it just a shared getting more people to just collect?

A (Ms. Williams) That is a good question. I do not know the goal for the program in terms of the interactive portal. I do know that there is -- there are weekly challenges among the portal participants in order to further engage with that interactive portal. The program is continuing to provide outreach in trying to engage more of those customers with the interactive portal, but in terms of the metrics, I am not aware.

Q Do you know, roughly, how many of your customers are -- I think you have you to -- you do have to enroll in the portal, right? That's not an option?

A (Ms. Williams) That is correct.

Q So do you know how many, roughly, have gone to the trouble of enrolling?

A I do not know the number of current interactive participants, but we can get that very quickly for you.

Q And I should have made this clear. Just three of you are up on the panel, but please don't feel left out. Chime in. I keep looking over here, but --

A (Ms. Listebarger) You're fine. Thank you.

Q And just to clarify, I think you said this earlier. Someone that has not opted into the MyHER Program doesn't have access to the interactive, right?

A (Ms. Williams) That is correct.

Q So they just go in and then just say it's not available?

A If they have opted out, they do not receive anything associated with MyHER, whether it's a paper or what's called an electric MyHER Report.

Q And I think there's other reasons that I've read that someone might not be a MyHER participant. They might be chosen for the control group?

A That is correct.

Q And that's a pretty fairly sizeable number. So would they have access to the MyHER portal as well?

A They would not, not to the MyHER portal.

Q Okay. So continuing on the promotion of this portal, when you're promoting the MyHER Program versus promoting the access to the general AMI data that you provide on your site, because I think that a customer, all customers can get some fairly specific data on their usage just going through the quote "more traditional AMI portal", how does your promotion of those two, two tools -- or how is it similar, how is it the same? I mean, excuse me. How is it similar, how is it different? How do you avoid, kind of, confusing customers when you're trying to reach out about, you know, go here and get data on your usage? And it seems to be somewhat two competing ways to do that.

A A MyHER treatment customer can access AMI. And you are correct. A control group, a customer who is not in the MyHER Program can also access AMI. The AMI data itself is very different than -- from a MyHER report or even an electronic MyHER.

In terms of what a customer might see, I am not aware, but I do know that AMI interval data is available to both the treatment customer and that control customer.

Q So I guess the --

A (Ms. Holbrook) Oh. Sorry. I think the key difference when you're talking about the difference between the two, if I'm looking at AMI data, I'm looking at data, and I see how my data changes over time. I don't get any tips on hey, I'm above the average or below the average. I don't get that normative comparison that the MyHER report provides. I don't get any tips or suggestions to make myself more efficient, and I don't get any of these guides to stay, you know, you can call and get a home energy house call, and that kind of thing, so the MyHER just gives -- I think Ms. Williams used the terms earlier. It's like it educates, it engages, and it empowers. Whereas the AMI data, it's just data, so...

A (Ms. Williams) And I'll segue onto that. In terms of the educating, the MyHER Report provides customers an idea of what is using power within their home. So that is the education piece. The engaging is through the normative messaging. No one wants to be seen as an outlier, and that is why there's that social norming aspect of the

MyHER report to see how you compare it to others, so that is the engagement piece.

But, also, it is a periodic treatment, you know. People get a -- you know, a paper report, you know, monthly, they could get an electric MyHER monthly. So that is the engagement piece, but then the empowerment piece to Ms. Holbrook's point is that each of the MyHER provides tips on ways to reduce energy and demand within their home, and that could be a low cost, no cost, or as well as programs that Duke Energy offers. So it's that tripod of the education, engagement, and empowerment that AMI does not provide.

Q So I understand the MyHER Program is for the Cadillac, and the other is -- doesn't give you-all that, the tips.

A Good way to put it.

Q But the other report does provide a lot of interesting information. There's historic trends. There's hourly usage to allow customers to download it. Surely, there's some research that says just having access to your own use can encourage you to look into your use. You might not know what to do, but you might just walk around your house and try to figure it out yourself.

A And that is true, but I believe the important thing to consider is with AMI, a control group customer has access to that AMI, and they can make changes in their home based on what they see with that interval data. A treatment customer also has access to that AMI data, and they can make changes. So it is happening for both that AMI data as well as using it can happen on that control side, as well as the treatment side.

Q And just to the original question of how you would promote the two tools. So someone that wouldn't have access to MyHER, how do they find out about the AMI? Is it something that's highly promoted or how --

A I am not aware of the promotional messages that are being sent to AMI customers.

Q Okay. Just even to click and use it, and kind of view it, and that sort of thing. Okay. I think you answered one of the questions in your preliminary answers. I think you answered that.

Okay. Switching gears a little

bit into some of the savings and the characteristics of the savings, so it appears that the MyHER annual savings or reduced consumption has been consistent over time. I think that the exhibits you have, the EM&V report really shows it's been robust program for a number of years. Is it correct to say that in the most recent rate case, the previously achieved MyHER Program savings were reflected in actual test-year consumption levels since you have pretty significant savings well into the past of getting a little bit -- I know a little bit into the rate case side, but -- yeah. You can have your chance.

And then is the same level of savings reflected in the normalized consumption levels used for rate design, so when you're actually calculating for rate design?

A That is something that I'll have to -- I do not know.

A (Ms. Listebarger) I would say so, yes.

A (Ms. Holbrook) Yeah. I know that the MyHER impacts one and two, the load calculation for the general rate case, and would also be used in

Ms. Listebarger's calculations of the EE/DSM rate as well.

Q Can you give us just a little bit of details of how mechanically you would do that?

A (Ms. Holbrook) So we provide -- when there's a general rate case, we provide -- depending on the test year, they look at the EE impacts. And so they've got their load, which includes our EE impacts. So that's what's going into the base rate calculation to determine it's for the base rate calculation, so that load profile has already been affected by whatever EE/DSM we've done or EE that we have done.

Q So then do you -- since that was sales that is reflected, do you add back the savings or do you normalize moving forward? I mean, it's a large number of reduced sales. So from what I understand you just said, that that's -- that kind of after the fact demand load is what moves forward into the rate case?

A Yeah. That is used to calculate the rates --

Q Okay.

A -- based upon whatever EE was incorporated into the load during that Test Period.

Q Okay. Maybe I'm just not understanding. So if there's, you know, very large numbers of reduced sales that you did not pick up when you actually bill customers because they weren't there, do you add back that kind of savings into the numbers? What's your baseline or does that baseline that moves forward for rate purposes just not -- you know, not include the hypothetical sales that you would have had if you didn't have MyHER?

A I believe it's the latter, but I may look at Shannon just to confirm the federally general rates stuff, but I know what we provide for the rate calculations.

A (Ms. Listebarger) Yeah. I haven't been involved directly over the rate cases theirselves, but that would be my understanding, is that at that point in time, whatever we had projected within that forecast period or that Test Period for the rate case, you know, that would be put into rates and then we'd have a new starting point moving forward, I believe.

Q Okay. And I understand that this is a little bit getting outside of the Rider. Could I ask for a late-filed exhibit.

A Sure.

Q Where you show it in the last rate case, kind of how and demonstrate it, just kind of give us some exhibits that show what was done related to this. It's just such a large amount of usage that it does seem like it would materially impact rate calculation, so...

MS. FENTRESS: May I just ask to clarify. So the late-filed exhibit would demonstrate the savings of which I understand.

COMMISSIONER HUGHES: Yeah. How the savings were reflected in the rate calculations.

MS. FENTRESS: Okay.

COMMISSIONER CLODFELTER: I think the question is that for purposes of determining the revenue requirement, for purposes of determining the revenue requirement of the rate case, what level of sales do you assume? Do you assume gross or do you assume net of the EE savings? What level of sales is assumed for purposes of setting the revenue requirement?

THE WITNESS: (Ms. Listebarger) I would imagine that would be net, but I'd have to confirm.

COMMISSIONER CLODFELTER: That's the

question for the late-filed exhibit.

MR. KAYLOR: Thank you.

COMMISSIONER HUGHES: There's also the question of -- I'm glad you brought up revenue requirements because there's the cost of the program and the savings related to it, so they're beyond opposite sides of the rate calculation, so if they can show both. And Public Staff might know some of the answers to this. You'll get your chance. I'm going to just go through, and if you have clarifications on some of these, that would be great.

BY COMMISSIONER HUGHES:

Q So a core part of the MyHER Program is to promise participants savings for implementing specific measures?

A (Ms. Williams) That is correct.

Q I think there's a lot of do this, save this amount of money on your bill. Do the numbers that are presented in those advertisements and those pitches, do they take into consideration the amount that the customers will have to pay back in lost revenues in that same year?

So in other words, the way the cost-recovering mechanism operates, as I understand it, is there's a bill savings and there's also the recovery of a significant part of that bill savings in the Rider. So when you're saying, do this, you're going to save this much on your bill, is it netted out or is it --

A (Ms. Powers) Yeah. So we don't say that. We don't say, do this and you'll save this much on your bill. For some of the measures, like a heating and air conditioning, we might say you could save up to this amount, but we don't make guarantees as to what customers would save. There's too many variations in usage and weather and occupants in the home, and so we don't make those kinds of guarantees.

Q But because those numbers do get people's attention. So when you just calculate those numbers, do you take into consideration just the straight bill savings that a customer will have or do you actually net out that they're going to have to pay -- in the MyHER Program, in particular, they're going to save something? But then the way the mechanism works, they're going to have to pay back a significant part of that savings?

A (Ms. Powers) Well, the part of the savings that they're paying back through the Rider is distributed and spread among all the residential ratepayers, so -- so it still translates to bill savings for the participants. But, again, we wouldn't make those kinds of guarantees to customers, and we would discourage even presenting numbers like that to customers for just -- for not just that reason, but also because customers' behavior changes when they make these energy efficiency upgrades, and there's really no way of knowing how that will -- they'll respond. That's why we do the billing analysis after the fact, and we determine what the savings are after, through the billing analysis, but not preemptively.

A (Ms. Holbrook) I would also add that because it's such a high saturation program, that the amount of revenue requirement from MyHER has been pretty steady since its inception, and so you're not going to see a big increase in lost revenue from one year to the next, just because it's kind of a steady level of participation. So that necessarily wouldn't cause a big increase if we -- you know, if you adopt those measures, because that amount pretty much stays fairly level.

Q Okay. Well, since there is such a high penetration level with this program, the net lost revenues that each customers' putting back would be lower than their private savings, but I think it's still pretty significant because you have such a high level of participation.

A Yes. That's true.

Q So given that, is there a situation where the folks that are being excluded from this program for EM&V purposes are paying for a significant -- they're paying for lost revenue for the beneficiaries that are participating in the program?

A That's true.

Q Is that a fairness issue or an equity issue that we should be concerned about? Again, just because the numbers are so high. Does that make sense?

A (Ms. Williams) Could you repeat the question, please?

Q Sure. I think -- and don't quote me on these numbers, but roughly it's 1.3, 1.4 are participating in the program. They are generating a lot of savings and they are causing a lot of lost revenue to go back on customers' bills. So they are picking up a percentage of that lost revenue, which was my previous question, but also the customers that haven't benefited from participating in the program that haven't, in theory, led to that savings. They are, from what I understand, paying the same amount of lost revenues as the customers that are participating in it. And so is that an issue of fairness that we should be concerned about?

A You are correct. And Karen, I'm not -- I'm not -- I'm not the expert with this, but yes, the MyHER control group would be paying into that. In terms of fairness, it is a very high percentage of DEC customers who are participating in the MyHER Program.

So in terms of a question of fairness, there is a low level of opt-out. We do try to minimize as much as possible the number of control groups, the number of participants in the control group. So in terms of fairness, it is something that I cannot answer.

A (Ms. Holbrook) And I would add to that a couple of things. I think having that control group is just necessary for the program to work for us to even be able to validate the savings. And the other part of it is it's a very cost-effective program. And so you may not be getting the bill credit, but those customers are enjoying the avoided cost benefit as compared to the cost of the program, so they are reaping the benefit of the avoided costs. And so they may not get as much benefit, but they're not overly paying for it because they've got that avoided cost benefit versus program costs.

A (Ms. Williams) Just adding on to that, in terms of the control group that is needed for EM&V, they serve as the baseline. And what we do, working with the evaluators who are responsible for the evaluation for the MyHER Program, have determined the optimal number of participants in the control group and try to keep that at a level that is necessary for EM&V, but to keep that as low as possible to allow as many participants to participate as possible.

Q I appreciate that. And don't get me wrong. I think the control group is -- it was an excellent EM&V. But, sometimes, there's unintended consequences.

A Understand.

Q So I just didn't know if we should be worrying about that. I have a series of questions from staff that I just want to walk through. It shouldn't take long. It should just be kind of -- you know, move quickly. So from what I understand, your counsel's going to hand you a copy of paragraph number 57 of the current DEC cost recovery and incentive mechanism. Do you have that?

(Handed)

Q Could one of you, please, read paragraph number 57.

A (Ms. Powers) "The North Carolina retail kilowatt-hour sales reductions that result from an approved measurement unit installed in a given vintage year shall be eligible for use in calculating Net Lost Revenues eligible for recovery only for the first 36 months after the installation of the measurement unit.

Thereafter, such kilowatt-hour sales reductions will not be eligible for calculating recoverable Net Lost Revenues for that or any other vintage year."

Q Now, if you would go to Exhibit 1 in your Panel Cross-examination, the table that you went over. If we could just look at the lost revenue. I'm sorry. It's Question 5, not question 1. Do you have it?

A (Ms. Holbrook) Question number three?

MS. FENTRESS: If I may, it's the third table, but it's relating to the Commission's fifth question.

THE WITNESS: (Ms. Holbrook) Thank you.

Q Okay. We're all on the same page of the table. According to this exhibit, there appears to be, in 2017, 1.394 -- 1,394,693 participants during rate year 2017, and 1,432,263 participants in rate year 2018. How was the 2018 number derived?

A (Ms. Holbrook) This is out of participation numbers?

Q Yes.

A This is 2018? Um, we have a process by which where program managers work with, back then, the

MyHER vendor, together participation, and that participation is a total of the paper online and multi-family MyHER participation.

Q Okay. So, then, if you move to rate year 2019 -- excuse me. If you move to rate year 2020, Question 5 shows that there were one thousand, three hundred fifty eight, eight hundred ninety two actual participants. Did the 2020 number include all or any of the participants in the previous year?

A (Ms. Holbrook) They would include almost all of it because, again, it's a one-year measure, so we send it to people each and every year. So unless somebody opted out or in some cases, new participants came in, but it would largely be the same group of people.

Q So if you went back of the year before, 2017, the same?

A Yeah. 2017 was a little lower because it was, kind of, the start-up, but yes.

Q Okay. So then if we go to 2021 and it shows 1,376,708 participants, would that number include all or any of the 1,394,693 participants that were in rate year 2017?

A Yes. That's very likely, and there'll be some -- again, the changes that happen through their opt-outs or new participants, but largely the same.

Q Okay. So just given that number of years, given the three-year restriction in paragraph 57 of the mechanism, what is the basis for including 2017 MyHER participants in the 2021 calculation of total participants?

A So I don't know if it says it in paragraph 57, but the restrictions on lost revenue are three years or until the rate case becomes effective or the measure life. Whatever is the lowest. And the MyHER Program has a one-year measure life.

So if we were to stop MyHER, essentially, the tips and the engagement goes away and we would expect that the usage would revert back to pre MyHER, before we ever got a report. And so because we have to engage them and incur the cost to engage them, every year it's a one-year measure life.

And so, because of that, while it's included in the rate case, as a baseline, in order to keep that going, we have to continue to engage those customers. And so we continue that participation and that lost revenue because of the one-year measure life that it has.

Q Okay. So from a legacy standpoint, do I understand that every year, all the participants, whether they've been participating for one, two, three, four, five years, are considered to be in that legacy year? So 2021, it's a new program for all the participants?

A That's correct, yes.

Q Okay.

COMMISSIONER HUGHES: I think that's it. Thank you very much.

COMMISSIONER BROWN-BLAND: All right. For the record, just to be clear, I had initially indicated that the Commission had issued an order allowing the panel testimony, and that was for witnesses Holbrook, Powers, and Williams. And we'll note that witness Listebarger has been added to the panel. And the Company responded to the Commission's request that they appear as a panel, and so that explains why we have four. Ms. Listebarger, we're sorry we didn't have, you know, a dais kind of spot for you to be in.

THE WITNESS: (Ms. Listebarger) No. That's fine.

COMMISSIONER HUGHES: Is that seat colder than --

COMMISSIONER BROWN-BLAND: I don't think she was feeling quite the hot seat effect of that, but any other questions from the Commission?

(No response)

COMMISSIONER BROWN-BLAND: Are there questions on the Commission's questions? Let me start. I see Ms. Cress.

MS. CRESS: Yes. Thank you, presiding Commissioner Brown-Bland. Good afternoon. My name is Christina Cress. I represent the Carolina Industrial Group for Fair Utility Rates. In this docket, these questions are going to be directed to the entire panel, so please feel free to answer as you see fit.

EXAMINATION BY MS. CRESS:

Q To your knowledge, did customer groups, including certain non-residential customers and non-residential customer groups, like CIGFUR, participate in Duke Energy's comprehensive rate design study?

A (Ms. Holbrook) I wasn't privy to any of that, so

I can't comment. I don't know if anybody else can.

Q Would you accept, subject to check, that they did?

A Yes.

Q Okay. And are you aware that as part of the comprehensive rate design study, certain non-residential customers, stakeholders, provided extensive feedback to Duke regarding new demand response programs and modifications to existing demand response programs? That if incorporated by Duke, would or potentially may prompt those customers who may currently be opted out of DSM/EE to participate in the Company's DSM/EE suite of programs and thus share in the cost recovery through the DSM/EE Rider?

A Again, I wasn't privy to it, but...

A (Ms. Williams) And nor was I.

Q Would you accept, subject to check, per the road map that DEC and DEP filed with the Commission earlier this year, that that did, in fact, occur?

A (Ms. Holbrook) Subject to check, yes.

Q And were you aware that that feedback included a specific proposal for Duke to propose for regulatory approval a new program based on Southern California Edisons Base Interruptible Program and it's related Emergency Load Reduction program?

A Subject to check.

Q Okay. Has Duke, to date, incorporated the feedback that it received from those non-residential customers in the comprehensive rate design study?

A I would imagine that is true. As Ms. Powers noted, it's not quite as easy as just turning on a switch and let's roll out and program. So I imagine that the right parties from those discussions have been in touch with our non-residential program managers to start that, but probably, actually our program developers or solutions to developers to start looking in how best to do something like that.

Q To date, has Duke proposed, for Commission approval, a program that resembles southern California Edison Base Interruptible Program or the Southern California Edison Emergency Load Reduction Program?

A Not to my knowledge, no.

MS. FENTRESS: May I ask. I don't know anything about those programs and I don't believe my witnesses do. Can you give some descriptions of the program so that they could perhaps respond more fully.

MS. CRESS: I'm happy to, you know, ask the questions that I have here. Again, these are based on Commission questions which I was not privy to before today. So if you're not familiar with those programs, then you're not familiar with those programs.

Q But, the important point is Duke has not proposed a program resembling the Southern California Edison suite for approval?

A (Ms. Powers) Yes. Some of the confusion there is I'm not sure if that's strictly a demand response program or are you talking about a new rate, since it was part of the comprehensive rate design workshop? I would think it could be a new rate, which is not really what we cover here in the EE/DSM Cost Recovery Rider, so that's part of our confusion.

I also don't know if some of what was proposed through that program is already incorporated in our current demand response programs, like PowerShare. And so without those kinds of details, I think that's just a perfect example of why saying what one utility does will work at Duke. There are a lot of nuances and we can't speak to the nuances, just based on the title of the program and/or rate that you're referencing. I just don't know.

Q Would you accept, subject to check, that non-residential customers provided feedback during the comprehensive rate design study, that the PowerShare Program specifically do not work for them?

A (Ms. Powers) I haven't heard that, but I have heard that the comprehensive rate design working group was robust. They got lots of stakeholder feedback, and that we were happy to receive it and are working to incorporate all of it.

So there are some, you know, evaluations going to all our demand response programs, and I'm sure if our commercial -- large commercial/industrial customers gave us feedback about a program that would work for them and that would reverse the opt-outs to more opt-ins, then we are enthusiastically engaged in it. It just hasn't gotten to the regulatory level, which is where we are.

MS. CRESS: Great. Well, I'm looking forward to that happening. Thank you.

COMMISSIONER BROWN-BLAND: Mr. Neal.

MR. NEAL: Thank you. Yes. I'm David Neal representing SACE, et al.

EXAMINATION BY MR. NEAL:

Q First, Ms. Powers, again, upon Mr. Hughes' questions early regarding the Collaborative itself, you had agreed that -- even if you don't agree with Mr. Bradley-Wright's conclusions, you would agree that he was -- in his testimony, particularly around pages 14 through 15, comparing the experience of program development when there's been a settlement with Duke, for example, on the Tariff On-Bill Financing and the high energy use pilot, with what he's experienced when there's been recommendations, just in the Collaborative, you would agree that that was part of his testimony, correct?

A (Ms. Powers) That was part of his testimony.

Q And that his conclusion was that there was -- there was improved collaboration and a more successful engagement with those programs that

were part of those settlements. Isn't that right?
A Yes, that is the point that he was making.
Q I have a question about MyHER, now shifting gears. Commissioner Hughes was asking about the number of participants and the control group. Has Duke or has its EM&V contractor considered, kind of, a third category of customers who've been on the MyHER Program for maybe a year or two, and then have them roll off and, sort of, to test out this hypothesis? Would there be a persistence of savings, even without that treatment, even without getting the reports? Has that been part of the EM&V from MyHER?
A (Ms. Williams) We have not had a formal persistence study, but that is something that we can certainly look into with the evaluator.
Q And are you familiar that in other parts of the country with these kinds of behavioral programs, that they have found some persistence of savings after customers have rolled off of participation?
A I am aware that there is some persistence of savings. Some slight degradations, but overall, persistence of savings, yes.

Q So it sounds like Duke then would be willing to investigate that further as another way of maybe trimming costs and while not dramatically reducing savings from MyHER going forward?
A That is something that we can certainly explore.

MR. NEAL: Thank you. I have no further questions.

MS. EDMONDSON: I have a few questions.

COMMISSIONER BROWN-BLAND: Ms. Edmondson.

MS. EDMONDSON: Lucy Edmondson from the Public Staff. This is not a question, but I wanted to ask the Commission to take judicial notice of Order Adopting Rules on February 29th, 2008 in Docket E-100, Sub 113. I believe Commissioner Clodfelter asked about the showing required for customer opt-out, and issue 97 on page 128 gives some explanation of how the Commission considered that issue at that time.

COMMISSIONER BROWN-BLAND: There being no objection, the Commission will take judicial notice as Ms. Edmondson requested.

EXAMINATION BY MS. EDMONDSON:

Q Ms. Williams, to opt out of MyHER, I need to make an affirmative act, contact the Company and ask to be removed. Is that correct?

A That is correct.
Q So if I receive the report in the mail and I can tell what it is, and I just throw it in the trash without opening it, am I a participant?
A You are technically a participant, yes.
Q And will EM&V take me out? Will they count my savings if that's what I'm doing with the report?
A If you are in the treatment group and even if you do, you know, not look at it, you are assigned the savings that is verified per participant through the EM&V.
Q But are there any free riders or per MyHER?
A Based on the EM&V methodology of a randomized control trial, it is inherently net. So the issue of -- or the concept of free ridership are still over. It does not apply to MyHER.
Q Okay. The next question. When was the last MyHER EM&V that was taken into account approved in the Rider?
A It was in 2019, I believe, August, 2019. We are currently in the process of finalizing a newly verified MyHER Report for DEC, DEP.
Q And so we are using the 2019 numbers right now to -- as the impact of the program?

A Yes.

Q And over what period were -- what vintage of customers were studied for that 2019 EM&V?

A Let's see. The process looks at the most recent 12 months. I do not recall of the top of my head what the sample period was for MyHER, but that is something we could certainly get to you very quickly.

Q So the current EM&V that's in progress, you said it's -- the fourth quarter of this year, you're expecting it to be finalized?

A Yes. Basically, I would say within the next month.

Q So for DEC, those impacts would be used in next year's Rider for MyHER?

A That would be my assumption, yes.

Q And over what vintage of customers are being studied for that EM&V report?

A Within the evaluation, there are what are called cohorts, so you have participants that even started back in 2012, 2013. So it's -- in terms of a vintage, you know, it is looking at the total participants. So that could be, say, from 2010, 2011, 2012, all the way through the verified sample period of, you know, hypothetically December, 2021 so I don't know whether that is answering your question.

Q So if it went through December of 2021, would those results reflect the impact of AMI?

A Um, it would not reflect the -- with AMI, that began in April of 2021. Within AMI, usage that is provided to the customers, that are available to customers, it is available to the -- to participants in the treatment program, and it is available to customers in the control group. In my testimony where I said that they effectively cancel each other out, the core of EM&V is to look at the treatment and then subtract -- the consumption and the treatment group versus the consumption of the net control group.

In the instance of AMI, there is AMI engagement for a treatment program, and there is AMI engagement in the control group. So, therefore, they're identical. The evaluator, when they start looking at newly-eligible participants to randomly assign to either a treatment or a control group, it is statistically identical.

With AMI, because the control group and the treatment group have access to AMI, they do effectively cancel each other out because they are statistically identical.

Q But -- so the EM&V, that's going to end where the sample group is through the end of 2021, and you-all started the AMI in April of 2021. That would only have folks that were -- had for eight months of the entire period of the EM&V?

A Correct. However, the EM&V does not look -- does not pull out those savings from AMI because savings are being achieved on the treatment side and being achieved on the control side.

Q So you mentioned some efforts you-all were making where you were adding alerts to MyHER of energy spikes, improving modeling, more accurate tips, identifying likely participants with pools and EV's?

A Um-um.

Q When will there be EM&V that might reflect those efforts?

A Since everything is in the exploratory stage right now, in terms of these changes, we generally wait some period for savings to more materialize. So I can't venture -- I can't venture a guess in terms of when the next EM&V will encompass these. If, hypothetically, these were finalized in 2022, I would anticipate that the EM&V in 2024 would encompass some of these changes.

Q Okay. Thank you.

A You're welcome.

Q One other question. So -- and this can be for anyone. If I am a participant in MyHER for each year, for four years, and it just has a one-year measure life, are you getting net lost revenues after I've been in the program for 36 months?

A (Ms. Holbrook) Yes.

Q So you're with the one-year measure life. You're getting net lost revenues for every participant, every year, regardless of how many years they've actually participated in the program?

A That is correct, primarily because of the ongoing engagement that's necessary to maintain those savings, so that's why it's over one-year measure life.

MS. EDMONDSON: That's all I have. Thank you.

COMMISSIONER BROWN-BLAND: Does the Applicant have questions on Commission's questions?

MS. FENTRESS: We do not.

COMMISSIONER BROWN-BLAND: All right, then. I'll entertain motions.

MS. FENTRESS: With that, I would like to move in the testimony and the exhibits, including the prefiled Panel Cross-examination Exhibit 1 into evidence, as well as the Application.

COMMISSIONER BROWN-BLAND: That motion will be allowed. The prefiled Cross-examination Exhibit 1 will be received into evidence as will the Application, and the premarked exhibits to the prefiled testimony?

MS. FENTRESS: Correct.

COMMISSIONER BROWN-BLAND: All right. For these witnesses: Listebarger, Powers, Williams, and Holbrook, will be received into evidence, and they will remain with the same markings as they were identified.

(WHEREUPON, Panel
Cross-examination Exhibit 1,
Application of DEC, Listebarger
Direct Exhibits 1 - 7 and

Supplemental Exhibits 1 - 6, and
Evans Exhibits 1 - 18 and A - F,
as adopted by Karen K. Holbrook,
are admitted into evidence.)

COMMISSIONER BROWN-BLAND: We appreciate you making this panel available to us, and you may be excused.

THE WITNESS: (Ms. Holbrook) Thank you.

THE WITNESS: (Ms. Powers) Thank you.

COMMISSIONER BROWN-BLAND: Mr. Neal, I guess we would like to hear from you now.

MR. NEAL: Thank you, presiding Commissioner Brown-Bland. At this time, the North Carolina Justice Center, North Carolina Housing Coalition, Southern Alliance for Clean Energy, would move for admission the direct testimony of Forest Bradley-Wright prefiled on May 17th consisting 25 pages. Ask that it be entered into the record and copied into record as if given orally from the stand, and that his exhibits marked FBW-1 through FBW-9 be entered into evidence.

COMMISSIONER BROWN-BLAND: There being no objection, that motion is allowed.

(WHEREUPON, Exhibits FBW-1
through FBW-3, FBW Exhibit 4, and

Exhibits FBW-5 through FBW-9 are marked for identification as prefiled and received into evidence.)

(WHEREUPON, the prefiled direct testimony of FOREST BRADLEY-WRIGHT is copied into the record as if given orally from the stand.)

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Application of Duke Energy Carolinas, LLC, for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. §62-133.9 and Commission Rule R8-69	))))))))	**DOCKET NO. E-7, SUB 1265**

DIRECT TESTIMONY AND EXHIBITS OF

FOREST BRADLEY-WRIGHT

ON BEHALF OF

THE NORTH CAROLINA JUSTICE CENTER, NORTH CAROLINA HOUSING COALITION, AND SOUTHERN ALLIANCE FOR CLEAN ENERGY

May 17, 2022

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Introduction and Qualifications

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

A. My name is Forest Bradley-Wright. I am the Energy Efficiency Director for Southern Alliance for Clean Energy ("SACE"), and my business address is 3804 Middlebrook Pike, Knoxville, Tennessee.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of SACE, the North Carolina Justice Center ("NC Justice Center"), and the North Carolina Housing Coalition ("NC Housing Coalition").

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND WORK EXPERIENCE.

A. I graduated from Tulane University in 2001 and in 2013 received my Master of Arts degree from Tulane in Latin America Studies, with an emphasis on international development, sustainability, and natural resource planning.

My work experience in the energy sector began in 2001 at Shell International Exploration and Production Company, where I served as a Sustainable Development Team Facilitator.

From 2005 to 2018, I worked for the Alliance for Affordable Energy. As the Senior Policy Director, I represented the organization through formal intervenor filings and before regulators at both the Louisiana Public Service Commission and the New Orleans City Council on issues such as integrated resource planning, energy-efficiency rulemaking and program design, rate cases, utility acquisition, power plant certifications, net metering, and utility-scale renewables. As a consultant, I also prepared and filed intervenor comments in renewable energy dockets before the Mississippi and Alabama Public Service Commissions.

Since 2018, I have been the Energy Efficiency Director for SACE. In this role, I am responsible for leading dialogue with utilities and regulatory officials on issues related to energy efficiency in resource planning, program design, budgets, and cost recovery. This takes the form of formal testimony, comments, presentations, and/or informal meetings in the states of Georgia, Florida, North Carolina, South Carolina, and Mississippi, along with jurisdictions under the Tennessee Valley Authority. A copy of my resume is included as Exhibit FBW-1.

Q. HAVE YOU BEEN AN EXPERT WITNESS ON ENERGY-EFFICIENCY MATTERS BEFORE THE NORTH CAROLINA UTILITIES COMMISSION?

A. Yes, I filed expert witness testimony in response to Duke Energy Carolina's ("DEC" or "the Company") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub 1192, Duke Energy Progress' ("DEP") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub 1206, DEC's DSM/EE Recovery Rider 12 in Docket No. E-7, Sub 1230, DEP's DSM/EE Recovery Rider 12 in Docket No. E-2, Sub 1252, DEC's DSM/EE Recovery Rider 13 in Docket No. E-7, Sub 1249, and DEP's DSM/EE Recovery Rider 13 in Docket No. E-7, Sub 1273.

Q. HAVE YOU BEEN AN EXPERT WITNESS ON ENERGY-EFFICIENCY MATTERS BEFORE OTHER REGULATORY COMMISSIONS?

A. Yes, I have filed expert witness testimony in Georgia related to Georgia Power Company's 2019 and 2022 Demand Side Management applications and in the five-year energy efficiency goal setting proceeding before the Florida Public Service

Commission in 2019 for Florida Power & Light, Gulf Power, Duke Energy Florida, Jacksonville Electric Authority, and Orlando Utilities Commission.

Summary of Recommendations

Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR DEC AND THE COMMISSION?

- Quantify and analyze the full lifetime carbon savings associated with Duke's DSM/EE portfolio in future Recovery Rider proceedings to enable the Commission and other interested parties to track the impact of DSM/EE resources towards achieving carbon reduction goals. In addition, Duke should work with the Energy Efficiency Collaborative ("Collaborative") to identify and expand the carbon reduction impact of the Company's energy efficiency portfolio.
- In support of its least-cost carbon reduction and integrated resource planning, DEC should work with the Collaborative to establish an action plan to reverse savings declines and identify steps that will allow DEC to meet and exceed 1% savings of total retail electric sales in each program year. The plan should be periodically updated and presented to the Commission as an appendix to future DEC DSM/EE Rider applications. As part of the action plan to increase overall savings, Duke should work with the Collaborative to increase the average measure life for DEC's EE portfolio through a shift towards measures with deeper and longer-lived savings.
- Increase the scale and reach of Duke's income qualified low-income efficiency programs, with corresponding new plans for investments that will allow for the achievement of those savings targets. Status and outputs of this work should be reported to the Commission in DEC's next DSM/EE Recovery Rider filing. The Commission should endorse the energy efficiency-related recommendations of the Low-Income Affordability Collaborative and direct Duke to develop corresponding applications for approval by the Commission.
- DEC should establish a default process and timeline for the development of Collaborative stakeholder program recommendations - from initial proposal submission to filing with the Commission - that indicates key milestones and expected timeframes in between.

- Direct DEC to continue providing information related to the energy savings and economic impacts of DSM/EE programs that were introduced during and/or are a product of the Collaborative in future DSM/EE Recovery Riders. In addition, DEC should be required to indicate which program modifications or additions were initiated by participating stakeholders, as well as stakeholder-initiated recommendations upon which the Commission has not acted.

DEC's 2021 Energy Savings Performance

Q. WAS THE COMPANY'S EE PORTFOLIO COST-EFFECTIVE IN 2021?

A. Yes, it was. The value of DEC's DSM/EE programs continued to be cost effective and delivered significant financial value to customers, even during the pandemic. In 2021, DEC's DSM/EE portfolio had a Utility Cost Test ("UCT") score of 2.68 and a Total Resource Cost ("TRC") score of 2.46.[1] The total net present value ("NPV") of avoided costs in 2021 decreased, but still amounted to approximately $292 million of financial benefit for customers.[2]

Q. HOW DID DEC'S DSM/EE PERFORMANCE IN 2021 COMPARE TO PREVIOUS YEARS?

A. DEC once again reported a marked decline in energy savings in 2021, falling even further below its performance in 2020, which was defined by the onset of the COVID-19 pandemic. In 2021, DEC delivered 600 GWh of efficiency savings at the meter, equal to 0.79%[3] of the previous year's retail sales. Prior to the pandemic, DEC had reported savings hovering near or above 1% for three consecutive years.

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[1] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-5 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1265) (Attached as Exhibit FBW-2).
[2] *Id.*
[3] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-12 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1265) (Attached as Exhibit FBW-3).

Q. HOW DID DEC'S DSM/EE PERFORMANCE COMPARE TO ITS PROJECTIONS FOR 2021?

A. In DEC's DSM/EE Rider 12 filing, the Company projected 715.7 GWh of annual energy savings, equal to 0.89% of the prior-year's retail sales.[4] Actual reported savings were 600 GWh, down 16% from the original forecast.

Q. HOW DID DEC'S RESIDENTIAL PROGRAM PERFORMANCE COMPARE TO TOTAL SAVINGS IN 2021?

A. Residential programs have made up the majority of savings in DEC's portfolio for the past several years and 2021 was no exception to this trend. In 2021, 65% of all savings came from residential programs, though this reflected a relative decline from the previous year.[5] One residential program, My Home Energy Report (MyHER), made up over half of DEC's total savings in 2021 at 53% of reported system energy reductions for the entire DEC EE portfolio, a slight increase from 2020. As we have expressed numerous times in previous years, we are concerned by DEC's heavy reliance on a behavioral program with such limited persistence of savings making up the bulk of DEC's DSM/EE portfolio savings. Not counting MyHER, total energy savings in DEC's residential portfolio in 2021 were down to just 33% of their pre-pandemic levels in 2019. The biggest declines were in the Energy Efficiency Appliances and Devices (i.e. lighting) program and Duke's Multi-Family efficiency program. We urge the Company to continue to focus on capturing additional measures that are capable of achieving deeper and longer-lived savings to maintain a more balanced and robust program portfolio going

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[4] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket No. E-7, Sub 1230 (Attached as Exhibit FBW-4).
[5] Evans Exhibit 1, Page 4 filed in Docket No. E-7, Sub 1265.

forward.[6] These measures should include adding to or modifying programs that target the largest residential end uses of electricity – such as space heating & cooling and water heating. Fortunately, the HVAC efficiency program has seen steady growth in recent years, including during the pandemic, though this growth has not made up for the declines in other programs.

Q. HOW DID DEC'S NON-RESIDENTIAL PROGRAM PERFORMANCE COMPARE TO TOTAL SAVINGS IN 2020?

A. In 2021, DEC's non-residential programs made up 35% of total energy efficiency savings, reflecting both relative and total kWh savings increases over the previous year (184 GWh in 2020 compared to 221 GWh in 2021).[7] The increase was driven primarily by growth in three programs: the Smart Saver Custom, HVAC Products, and Small Business Energy Saver programs, though savings were still down overall compared to pre-pandemic levels.

Q. WHAT EFFECT DO COMMERCIAL AND INDUSTRIAL OPT OUTS HAVE ON THE PERCENTAGE OF ENERGY SAVINGS?

A. Commercial and industrial opt outs continue to negatively impact DEC's ability to reach higher savings benchmarks due to this group's large share of energy consumption. In 2021, approximately 61% of DEC's commercial and industrial energy consumption opted out of the utility's energy efficiency offerings (30,083 GWh out of 49,305 GWh of DEC's non-residential retail sales).[8] Customers that opt out withhold their proportionate share of funding for DEC's energy efficiency

[6] Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center and Southern Alliance for Clean Energy, Docket No. E-7, Sub 1192 (May 20, 2019).
[7] Evans Exhibit 1, Pages 3-4 filed in Docket No. E-7, Sub 1265.
[8] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-13 in Docket No. E-7, Sub 1265 (Attached as Exhibit FBW-5).

programs, and do not contribute to the utility's energy efficiency savings. This is unfortunate for many reasons, including that commercial and industrial energy efficiency are frequently among the lowest cost source per kWh saved. Such programs also tend to yield saving at a scale that leads to substantially reduced costs for participating customers and the utility system as a whole. As noted in my testimony for DEC's DSM/EE Rider 12, "While I recognize that commercial and industrial customers who opt-out also certify that they have implemented their own energy-efficiency or demand-side management measures, there is no requirement to report any resulting savings to the Company or the Commission and nothing in DEC's filing indicates the extent to which such savings are occurring. As a result, actual savings among customers who opt out of DEC's efficiency programs may be much lower than presumed." This gap in reporting persists.

Q. IS IT REASONABLE TO INCLUDE DEC OPT-OUT CUSTOMERS IN A PERCENTAGE OF RETAIL SALES CALCULATION?

A. Yes. By calculating energy savings compared to all retail sales, the Commission may observe the effect of the DSM/EE portfolio against actual customer energy consumption in a year. Not only is this in line with performance benchmarking in past proceedings, it is also consistent with understanding how much Duke's DSM/EE portfolio offsets power supply in the Company's IRPs and Carbon Plans. It is also consistent with the calculation methodology for determining whether

DEC has met the requirements for earning the $500,000 performance bonus for achieving 1% of total retail sales that was approved by the Commission in 2020.[9]

Q. HOW DID DEC'S LOW-INCOME EFFICIENCY PROGRAM PERFORMANCE COMPARE TO PREVIOUS YEARS?

A. The COVID-19 pandemic continues to negatively impact DEC's low-income efficiency programs to a considerable degree. In 2021, energy savings in DEC's Low-Income Energy Efficiency and Weatherization Assistance program increased slightly over 2020, but were still down 69% compared to 2019.[10] As such, it continues to be one of the hardest hit programs since the since the start of the pandemic. Unfortunately, this reduction in energy savings corresponds with a time of economic hardship for many low-income customers. Likewise, savings in the Multi-Family Energy Efficiency program, which has some degree of overlap with the low-income customer segment, continued to slide, with savings down 90.5% from 2019 levels - by far the largest decline of any program in DEC's DSM/EE portfolio.[11]

Table 3. DEC Savings by Residential Customer / Program Type[12]

Customer/Program Type	2018 GWh	2019 GWh	2020 GWh	2021 GWh	% Change 2019-2020
Income-Qualified	6.9	8.5	2.0	2.6	-69%
Multi-Family	20.9	21.3	4.0	2.0	-91%
General Residential	241.7	239.3	137.4	79.3	-67%
My Home Energy Report	344.8	328.4	332.1	336.3	2.4%
All Residential Programs	**586.5**	**567.8**	**469.5**	415.6	**-27%**

[9] Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, Docket Nos. E-2, Sub 931 and E-7, Sub 1032 (Oct. 20, 2020).
[10] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-15 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-6).
[11] *Id.*
[12] *Id.*

Observations and Recommendations Regarding Duke's 2023 Savings Forecast

Q: IS DEC PROJECTING ITS DSM/EE PORTFOLIO WILL BE COST EFFECTIVE IN 2023?

A: Yes, DEC projects a UCT score of 3.25 for its DSM/EE portfolio in 2023, and a TRC score of 2.67, indicating that DSM/EE continues to be a least-cost resource option. Both of these scores are also substantially higher than DEC reported for its program performance during the pandemic and higher than it reported for 2019 as well. A UCT score of 3.25 indicates that for every dollar spent by the utility on DSM/EE, it would have had to spend $3.25 if that same power had been met with supply resources. Accordingly, DSM/EE continues to be highly cost effective, with DEC's 2023 DSM/EE portfolio expected to yield more than $479 Million in net benefits for customers.

Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR 2023?

A. DEC projects that it will achieve approximately 736.8 GWh of energy savings at the meter in 2023. [13]

Q. DOES THIS REFLECT A DECLINE FROM DEC'S PREVIOUS SAVINGS PERFORMANCE?

A. While this would be an increase from DEC's 2020 and 2021 pandemic performance, it reflects a decline from previous performance and would also fall short of the 1% savings benchmark. DEC's 2023 forecast of 736.8 GWh of energy savings would lead to an estimated 0.92% of prior-year retail sales,[14] compared to

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[13] Exhibit FBW-6.
[14] Exhibit FBW-3.

0.98% in 2019,[15] 1.05% in 2018,[16] and 1.11% in 2017 (when DEC reported 880 GWh of savings) of prior-year retail sales.[17] Taken from the recent peak in 2017, DEC is projecting a 21% decline in overall savings for 2023.

Q. WHAT HAS THE COMMISSION SAID IN PAST DEC DSM/EE RIDER ORDERS ON THE SUBJECT OF SAVINGS DECLINES?

A. In 2019, 2020, and 2021, the Commission indicated its concern with DEC's projected savings declines. The Commission found in its October 18, 2019 Final Order in DEC's DSM/EE Rider 11 proceeding in Docket No. E-7, Sub 1192 that:

> In particular, the Commission notes the forecasted decline in DEC's DSM/EE savings in 2020 and concludes that it would be helpful to have the Collaborative examine the reasons for the forecasted decline, and explore options for preventing or correcting a decline in future DSM/EE savings.

The following year, the Commission reiterated its concern in its December 11, 2020 Final Order in DEC's DSM/EE Rider 11 proceeding in Docket No. E-7, Sub 1230, stating:

> The forecasted decline in DEC's DSM/EE savings in 2021 is a matter of concern. Consequently, the Collaborative should examine the reasons for the forecasted decline and continue exploring options for preventing or correcting a decline in future DSM/EE savings.

Last year, the Commission gave the same directive regarding forecasted declines in DEC's DSM/EE savings for 2022.[18]

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[15] Exhibit FBW-4.
[16] Duke Energy Carolinas Response to SACE Data Request, Item Number 2-2 in Duke Energy Carolinas DSM/EE Rider 11, South Carolina Public Service Commission Docket No. 2019-89-E (Attached as Exhibit FBW-8).
[17] *Id.*
[18] Order Approving DEC Application for Approval of DSM and EE Cost Recovery Rider, Docket No. E-7, Sub 1249 (Sep. 10, 2021).

Q. HAS DEC PROVIDED AN EXPLANATION FOR ITS PROJECTED EFFICIENCY SAVINGS DECLINES, AS REQUESTED IN DEC RIDER DOCKETS E-7, SUB 1230 AND E-7, SUB 1249

A. Company witness Robert P. Evans' testimony briefly touched on the subject, though the responses over the last two years were essentially the same, lacking any real substance or detail. For instance, he alluded to the program recommendations of Collaborative stakeholders, but gave no indication regarding the steps DEC has taken toward implementing those recommendations. Even more notable was the lack of any statements indicating whether or how DEC aims to reverse its declines and return to the higher savings levels it achieved in 2017, 2018, and 2019.

Q. HAS THE COLLABORATIVE WORKED TO EXAMINE THE REASONS FOR THE FORECASTED DECLINE AND EXPLORED OPTIONS FOR PREVENTING OR CORRECTING A DECLINE IN FUTURE DSM/EE SAVINGS?

A. To a limited degree, yes, though Duke has yet to commit to working with the Collaborative to develop a clear plan to make up for forecasted savings declines. As a result, discussions about new potential savings opportunities are fragmented and disconnected from any clear concept for how much of the savings gap would be met if the changes are successful. Since 2019, many Collaborative stakeholders have sought a portfolio level focus on reaching and exceeding 1% annual savings. DEC's recent past performance has exceeded this mark, and it is therefore the basis against which savings declines are measured. In 2020, stakeholders presented an array of program recommendations that could help to close the gap between DEC's past performance and lower projected future savings forecasts. However, Duke has not yet committed to proactively work with the Collaborative to develop a plan to reach past savings levels. Nor has Duke committed to tracking its DSM/EE portfolio performance against this savings benchmark.

Q: IN ADDITION TO PAST PERFORMANCE AND THE 1% SAVINGS TARGET, ARE THERE OTHER OVERARCHING GOALS THAT THE COLLABORATIVE OUGHT TO PURSUE?

A: The goal of exceeding 1% annual efficiency savings is not the only target worth aiming for, though it continues to be a useful and important metric. The other key priorities relate to DSM/EE-driven carbon reductions and efficiency savings for low-income customers. I continue to recommend that Duke and the Collaborative work intentionally towards overarching goals with clearly defined individual targets, while focusing on developing concrete strategies and program changes capable of reaching the goals and regularly tracking progress against the targets.

Q. HAS DEC REPORTED TO THE COLLABORATIVE ON PROGRESS TOWARDS DEVELOPING AND IMPLEMENTING CHANGES AND ADDITIONS TO ITS PORTFOLIO OF DSM/EE PROGRAMS?

A: In 2021, Duke provided fairly detailed regular updates on its own proposed program changes and additions. It also regularly included time on the Collaborative meeting agenda for information updates on program recommendations submitted by stakeholders. This was a small step in the right direction, though it is notable that Duke-initiated program recommendations regularly move towards submission as formal applications for approval by the Commission, while stakeholder-initiated recommendations continue to languish.

Stakeholder-initiated program proposals include:

- Energy Star Retail Products Platform
- Program Savings from Building Codes and Standards
- Low-Income Housing Tax Credit (LIHTC) Program

- Residential Low-Income Single Family Heat Pump Water Heater Rental Program
- Non-Residential Multifamily Heat Pump Water Heater Rebate Program
- Manufactured Homes Retrofit Program
- Manufactured Home New and Replacement Programs

As noted in my testimony last year, for each of the above program recommendations, the sponsoring stakeholder prepared supporting materials and presented them to the Collaborative, after which Duke took them for internal review and consideration. But there has been little visible action towards either implementing these recommendations or the Company explaining why it has decided not to move forward with implementing them. DEC has yet to submit a program application to the Commission for approval based on any of these recommendations the Collaborative members have provided, including some dating back more than two years.

Q: HAVE THERE BEEN ANY LESSONS LEARNED ABOUT HOW TO STRENGTHEN COLLABORATION BETWEEN DUKE AND COLLABORATIVE STAKEHOLDERS AROUND PROGRAM DEVELOPMENT?

A: Yes, two significant developments, namely the High Energy Use Low-Income Energy Efficiency Pilot ("High Energy Use Pilot") and the Tariffed On-Bill Pilot ("TOB Pilot"), demonstrate how Duke and stakeholders can collaboratively develop program concepts. Notably, neither of these examples of robust collaboration on EE program design originated in the Collaborative, with both arising out of the settlement[19] of contested issues in DEC's 2019 general rate case. Despite originating out of a contested, litigated proceeding, the collaboration on these new programs has been more productive in process and substance than similar efforts on initiatives originating in the Collaborative.

The success of the High Energy Use and TOB Pilots creates an important opportunity for stakeholders to glean and incorporate lessons on how to make the Collaborative more productive and truly cooperative. These lessons are that:

1. Collaboration is more effective if there is basic agreement and buy-in from stakeholders and Duke that the expected outcome is to successfully complete development of a workable and cost-effective program to be filed with the Commission for approval. Duke has not expressed such intent with any of the Collaborative stakeholder-initiated program recommendations to date.[20]
2. Direct involvement of staff from Duke's New Product Development group leads to better shared understanding of program design options, challenges, and opportunities.
3. Successful program development involves problem solving and adaptability, which is less effective without ongoing, hands-on engagement between stakeholders and all relevant Duke representatives.

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[19] *See, e.g.,* Duke Energy Carolinas, LLC's Agreement and Stipulation of Settlement with Stipulating Parties, Docket No. E-7, Sub 1214 (July 23, 2020).

[20] Though the Company has at times indicated that some elements of stakeholder recommendations have been incorporated into existing programs, there has typically been no subsequent performance tracking to validate that additional savings were achieved as a result of those changes.

4. The work proceeds more effectively if there is a shared understanding of key program design milestones and timelines.

While there are other valuable lessons that can be drawn from these experiences, including some that are discussed below, the most important is that program design collaboration can be productive if stakeholders work together as a team towards a common goal.

Q: WHAT STEPS CAN BE TAKEN TO IMPROVE FUTURE EFFORTS AROUND PROGRAM DEVELOPMENT IN THE COLLABORATIVE?

A: As a first step, greater clarity is needed for Collaborative members regarding the status of their proposed program recommendations. We all should have a better understanding of the process under which Duke will consider and decide upon recommendations.

To this end, I propose that Duke establish a default process and timeline for the development of Collaborative stakeholder program recommendations - from initial proposal submission to filing with the Commission - that indicates key milestones and expected timeframes in between. This recommendation follows the positive experience that a subset of Collaborative members have had developing the High Energy Use Pilot. The experience of working with Duke staff, including frequent and direct engagement with Duke's New Product Development group, represents a marked improvement over past attempts to advance Collaborative stakeholder program recommendations and should serve as a model for future efforts. Some of the features of this effort that have helped make it more successful have included:

- A clear upfront commitment by all parties to work cooperatively towards a specific program goal, with an expressed intent to arrive at a successful outcome.
- Regular structured meetings with clear interim targets.
- Clearly identified roles and responsibilities for individual members of the group (for both Duke and stakeholder participants).
- A willingness by all parties to contribute needed information and review it together for accuracy, adequacy, and completeness - and to identify issues that require additional attention.
- A readiness to problem solve issues and arrive at a solution that satisfies both Duke and stakeholder participants.
- A target completion date around which work tasks could be organized and progress measured.

Efficiency Savings Impact for Low-Income Customers

Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR ITS LOW-INCOME PROGRAMS IN 2023?

A. Low-Income Energy Efficiency and Weatherization Assistance accounts for 9.1 GWh of system energy reductions in DEC's estimated load impacts for 2023.[21] These programs are forecasted to account for approximately 2% of total residential energy savings in 2022. If achieved, this would be an 7% increase in total energy savings for DEC's low-income programs compared to its pre-pandemic performance.

Q. WHAT PROGRESS HAS BEEN MADE TO DEVELOP AND SEEK APPROVAL FOR NEW LOW-INCOME ENERGY EFFICIENCY PILOT PROGRAMS?

A. As part of a settlement and stipulation[22] between NC Justice Center, NC Housing Coalition, SACE, NRDC, and the North Carolina Sustainable Energy Association in their most recent general rate cases, DEC and DEP agreed to work with the Stipulating Parties to develop new low-income energy efficiency pilot programs ("LI EE Pilots") to be presented to the Collaborative and submitted to the Commission for approval.

Not only is this an important step in the right direction for advancing ongoing efforts to expand low-income efficiency program impact, but it is also significant that Duke has committed to a timeline to filing a program application with the Commission. As noted above, our experience over the past two years with

[21] Evans Exhibit 1, Page 5 filed in Docket No. E-7, Sub 1265.
[22] *See, e.g.,* Duke Energy Carolinas, LLC's Agreement and Stipulation of Settlement with Stipulating Parties, Docket No. E-7, Sub 1214 (July 23, 2020).

the Collaborative has shown that without specific deliverables and deadlines, new program concepts get bogged down in an indefinite process with no clear path to implementation or even a decision.

Q. WHAT IS THE STATUS OF DUKE'S STUDY TO EXAMINE THE RELATIONSHIP BETWEEN ITS NON-INCOME QUALIFIED EFFICIENCY PROGRAMS AND PARTICIPATION BY LOW-INCOME CUSTOMERS?

A. This was also a provision agreed to by the Stipulating Parties in the Duke DSM/EE Mechanism proceeding that the Commission approved in 2020. The Low- and Moderate-Income Energy Efficiency Study ("LMI EE Study") seeks to estimate market penetration of Duke's non-income qualified programs among Duke's low- and moderate-income customers ("LMI"). Ultimately, the study will "be used by DEC and DEP to make recommendations for program enhancements designed to cost effectively increase market penetration in the targeted populations and neighborhoods."[23] The Collaborative worked with Duke to develop the scope of work for this study and also provided input on the selection of Opinion Dynamics to conduct the study. The study is now underway with results expected this fall.

The scope of work assigned to Opinion Dynamics for the LMI EE Study does not include direct investigation of Duke's income qualified Low Income Energy Efficiency and Weatherization Assistance program ("LI EE"). But understanding the same market penetration issues and participation drivers and barriers is equally important for these programs. Duke has indicated that these

[23] Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, Docket No. E-7, Sub 1032 (October 20, 2020).

same themes can be better examined for its LI EE programs as part of its regularly scheduled EM&V. Ultimately, the LMI study and LI EE program EM&V finding should be considered in tandem in order to understand what is currently working, and how best to expand and improve upon Duke's energy efficiency offerings for low- and moderate-income customers going forward.

Q. HOW DOES DEC DETERMINE SPENDING LEVELS AND SAVINGS TARGETS FOR ITS LOW-INCOME EFFICENCY PROGRAMS?

A. Despite frequent conversations about expanding low-income efficiency programs, it is still very unclear how DEC determines its low-income efficiency program spending levels and savings targets. In response to questions submitted through discovery, DEC provided the following answers:

> DEC determines the Low-Income program budget and savings targets by considering the current Commission-approved programs targeting low income customers. For each approved program, DEC evaluates the throughput capability of the program structure to deliver energy savings to targeted/qualified customers, projected customer demand, and the cost to complete the projected customer participation goals. It is important to note budgets and targeted participation are in no way a cap on the amount of program spend or participation, but rather an informed way to inform requested cost recovery.[24]
>
> Energy savings are determined by using the most recent energy impact estimates (EM&V) and multiplying by the related number of measures or customers.[25]

Q. DO YOU STILL RECOMMEND INCREASING DEC'S LOW-INCOME EFFICIENCY PROGRAM SAVINGS AND SPENDING LEVELS?

[24] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-19 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-7).

[25] Duke Energy Carolinas Response to SACE Data Request, Item Number 1-20 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-9).

A. I do. Unlike most non-income qualified efficiency programs DEC offers that are driven by individual customer demand, participation in the Neighborhood Energy Saver ("NES") and Income Qualified Weatherization programs are limited by geographic location or conditional participation in the Weatherization Assistance Program. DEC has more than 2.2 million residential customers, with nearly 30% at or below 200% of the Federal Poverty Level ("FPL"), which is the same metric DEC uses to determine eligibility for its income qualified programs. Notwithstanding its far lower performance in 2020 and 2021, DEC typically serves roughly 10,000 customers through its low-income programs each year.[26] Most participants receive the comparatively shallower savings that the NES program provides. Importantly, not all who are served meet the 200% of FPL criteria because eligibility is determined at the neighborhood level. If one only considers deployment of the standard NES program (thus foregoing deeper savings needs), and also assumes that every program participant is in fact low-income, it would take DEC more than sixty years to reach everyone who qualifies. Addressing the deeper savings needs at a level typical of participants in the Income-Qualified Weatherization Assistance program and NES 2.0 at DEC's existing program delivery rate would be many factors longer.

Q. WHAT DO YOU RECOMMEND?

A. I recommend the following:

[26] Evans Ex. 6 page 5 - Docket No. E-7, Sub 1230

- Duke should increase its anticipated spending levels on low-income efficiency programs and work with the Collaborative on setting new spending levels and savings targets for its income-qualified programs.
- Commission approval of the soon-to-be filed High Energy Use Low-Pilot program that DEC, DEP, and the Stipulating Parties developed, which will ultimately provide DEC and DEP with valuable insights.
- Commission endorsement of the energy efficiency-related recommendations of the Low-Income Affordability Collaborative, including the development of corresponding program applications for the Commission's consideration.

<u>DSM/EE Rider Intersection with Decarbonization and Integrated Resource Planning</u>

Q. HAS DUKE ENERGY MADE COMMITMENTS TO REDUCE ITS CARBON EMISSIONS?

A. Yes. Duke Energy has made a commitment to its customers and shareholders to reduce its carbon dioxide emissions by 50% by the year 2030, and achieve net zero emissions by 2050. [27]

Q. HAS THE STATE OF NORTH CAROLINA MADE COMMITMENTS TO REDUCE ITS CARBON EMISSIONS?

A. In 2018, North Carolina Governor Roy Cooper committed the State to reducing its greenhouse gas emissions by 40% in all sectors by 2025,[28] and, through the

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[27] DUKE ENERGY, ACHIEVING A NET ZERO CARBON FUTURE, DUKE ENERGY 2020 CLIMATE REPORT (2020), https://desitecoreprod-cd.azureedge.net/_/media/pdfs/our-company/climate-report-2020.pdf?
[28] Exec. Order No. 80, North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy, 33 N.C. Reg. 1103-06 (2018), *available at*

statewide Clean Energy Plan ("CEP"), established an overall goal of reducing *power sector* emissions by 70% from 2005 levels by 2030.[29] As the largest utility in the state, Duke Energy Carolinas is the largest contributor to power sector greenhouse gas emissions in North Carolina and will shoulder the greatest responsibility for meeting the state's carbon reduction goals. In 2021, the North Carolina legislature passed HB 951, directing the Commission to establish Carbon Reduction Plans, the first of which is currently under development.

Q. HOW DO DEC'S DSM/EE PROGRAMS CONTRIBUTE TO MEETING THESE DECARBONIZATION OBJECTIVES?

A. Energy saved through Duke's DSM/EE programs reduces total energy waste and lessens reliance on the Company's most polluting power generators. As such, DSM/EE is one of the most effective means by which Duke can lower its carbon emissions. Duke has highlighted the relationship between energy efficiency and reaching its net zero goal, stating:

> Some of the most effective carbon reductions we can make involve helping customers avoid energy usage in the first place. Again, regulatory or legislative policies related to climate change can prove to be a driver for opportunities for increased deployment of energy efficiency.[30]

Q. SHOULD DEC START REPORTING THE CARBON REDUCTION IMPACTS OF ITS DSM/EE PORTFOLIOS IN FUTURE DSM/EE RIDER PROCEEDINGS?

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https://governor.nc.gov/documents/executive-order-no-80-north-carolinas-commitment-address-climate-change-and-transition.

[29] North Carolina Department of Environmental Quality (NCDEQ). North Carolina Clean Energy Plan (CEP) (2019), https://files.nc.gov/governor/documents/files/NC_Clean_Energy_Plan_OCT_2019_.pdf.

[30] *Id.*

A. Yes, building on its December 17, 2021 Order Requiring Filing of Additional Testimony, the Commission should ensure DEC follows through on reporting carbon reductions from its DSM/EE portfolios in future DSM/EE recovery riders. DEC should also describe how its DSM/EE portfolio is being deployed to meet its decarbonization targets. Doing so will provide the Commission and the public with important insight into the relationship between investments made in DEC's DSM/EE programs and the utility's progress towards achieving its goals and the State's decarbonization goals. This information could also prove useful in aiding the Company to optimize program delivery to increase carbon emissions reductions. To my knowledge, there is no other proceeding where DEC reports its carbon emissions reductions alongside its annual DSM/EE portfolio savings results. The annual DSM/EE Rider docket would appear to be the best place for regular reporting of this data.

In response to the Commission's recent Order Requiring Filing of Additional Information, DEC witness Evans testified that the Company is developing carbon intensity impact estimates for its DSM/EE portfolio, which it will file in future DSM/EE Rider filings. I whole heartedly support this and commend the Commission for recognizing the interconnection between these rider proceedings and the state's carbon planning.

This will enable consideration of DEC's emissions reductions resulting from total energy savings and help factor in the performance of its DSM/EE portfolio during specific times of the year, including during peak and off-peak hours. Optimizing the carbon reduction potential of DSM/EE will require new approaches to cost effectiveness analysis and resource optimization, as well as quality data, and careful consideration of new opportunities – potentially including new policy considerations.

Q. WHAT IS THE RELATIONSHIP BETWEEN THE DSM/EE RECOVERY RIDER AND THE INTEGRATED RESOURCE PLAN?

A. The DSM/EE Recovery Rider and integrated resource planning both provide perspectives into future energy savings. Lately there have been increasingly important connections between the Integrated Resource Plan, the DSM/EE Recovery Rider, the work of the Collaborative, and now the Carbon Plan that warrant additional development and attention.

As I testified last year, integrated resource planning provides the utility, the Commission, and the public with a roadmap for meeting future energy and capacity needs. The DSM/EE Recovery Rider tracks DEC's energy savings performance and sets expectations for energy savings in the subsequent year. If, however, the DSM/EE assumptions used in the IRP underestimate future potential, customers could end up paying for more expensive power supply rather than investing in less expensive strategies to eliminate energy waste.

Conclusion

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

COMMISSIONER BROWN-BLAND: Public Staff.

MS. EDMONDSON: Yes. Commissioner Brown-Bland, first, I would move that the testimony of Shawn Dorgan that was filed on May 17th consisting of 20 pages, as well as a one-page Appendix A, a three-page Appendix B, two-page Appendix C, be entered into evidence, and that his Exhibit 1 consisting of 41 pages also be accepted into evidence.

COMMISSIONER BROWN-BLAND: That motion is allowed, and the direct testimony of witness Shawn L. Dorgan will be received into evidence and treated as if given word for word from the witness stand. The Appendices A, B, and C are part of that testimony and will come in with that, and the Exhibit 1 will be received, and it is -- it'll be received at this time and it will be identified as it was marked when prefiled.

MS. EDMONDSON: Thank you. If I could also note, for the record, his middle initial is L. I believe in some places when he was excused, I believe it was listed as a C, so I just wanted to correct, for the record.

COMMISSIONER BROWN-BLAND: Thank you for that. Hopefully, we get that right, but I see I have it right on my paper, so I'm happy.

(WHEREUPON, Dorgan Exhibit I is marked for identification as prefiled and received into evidence.)

(WHEREUPON, the prefiled direct testimony and Appendices A - C of Shawn L. Dorgan is copied into the record as if given orally from the stand.)

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1265

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

May 17, 2022

INTRODUCTION

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

A. My name is Shawn L. Dorgan. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a Financial Analyst with the Accounting Division of the Public Staff – North Carolina Utilities Commission.

Q. PLEASE STATE BRIEFLY YOUR QUALIFICATIONS AND EXPERIENCE.

A. A summary of my qualifications and professional experience is provided in Appendix A, attached to this testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to discuss the Accounting Division's review of the Application submitted by Duke Energy Carolinas, LLC (DEC or the Company), for approval of a Demand-Side Management/Energy Efficiency (DSM/EE) rider (Rider 14), as authorized by N.C. Gen. Stat. § 62-133.9 and Commission Rule R8-69, and to present my recommendations.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony opens with an overview of the statutory and rulemaking framework for DSM/EE cost recovery by electric utilities in North

Carolina. Next, I discuss the Cost Recovery Mechanism (Mechanism) approved by the Commission for purposes of determining the DSM/EE and DSM/EE Experience Modification Factor (EMF) riders. Then, I discuss the Rider 14 billing factors proposed by the Company in its Application in this proceeding. The next section of my testimony covers the Accounting Division's examination of Rider 14. I end with a discussion of the Public Staff's conclusions and recommendations, and a further discussion of a focused review of certain expense categories that the Public Staff plans to conduct.

BASIS FOR SETTING DEC'S DSM/EE REVENUE REQUIREMENTS

Q. PLEASE BRIEFLY DESCRIBE THE STATUTORY AND REGULATORY BASIS APPLICABLE TO THE COMPANY'S FILING.

A. North Carolina General Statute § 62-133.9(d) allows a utility to file an application with the Commission for approval of an annual rider to recover: (1) all reasonable and prudent costs associated with implementation of new DSM and EE measures; and (2) other allowed incentives payable to the utility (utility incentives) for the adoption of new DSM and EE measures. Furthermore, Commission Rules R8-68 and R8-69 set forth additional guidelines, definitions, and filing requirements governing annual DSM/EE rate rider applications.

Q. ARE DSM/EE RATE RIDERS "BY-PASSABLE" CHARGES?

A. For DEC residential customers, the combined DSM/EE billing factor (prospective factor and EMF) is not an optional or "by-passable" charge. However, N.C.G.S. § 62-133.9(f) provides that a qualifying commercial or industrial customer may opt out of participating in one or all of the Company's DSM/EE program offerings. To make the election, a qualifying customer must notify the Company that it has implemented, or will implement at its own expense, alternative DSM and EE measures.

Q. PLEASE SUMMARIZE COMMISSION RULE R8-69.

A. Commission Rule R8-69, adopted pursuant to N.C.G.S. § 62-133.9, establishes provisions for two sets of billing factors. The first set (the DSM/EE rider) is prospective in nature and applies to a forthcoming "rate period" in which the billing factors are to be in effect. The second set is retrospective and provides for a series of EMF rates (DSM/EE EMF rider). For each prior test period covered by the application, DSM/EE EMF rates are established to recover any difference between revenues required (as adjusted for verified changes in DSM/EE program participation and in measure efficiency) and amounts actually collected from utility customers. Though the

DSM/EE EMF rider is calculated with respect to a past test period, it is collected from or refunded to customers over the same rate period that the DSM/EE rider is collected. In addition, Rule R8-69 provides provisions for the accrual of interest or return on amounts deferred and on refunds to customers.

COST RECOVERY MECHANISM

Q. PLEASE DESCRIBE THE DSM/EE COST RECOVERY MECHANISMS AND HOW THEY GOVERN THE DETERMINATION OF THE DSM/EE RIDERS AND THE DSM/EE EMF RIDERS.

A. The costs and utility incentives proposed to be recovered via Rider 14 are related to DSM and EE measures actually or expected to be installed or implemented during calendar years 2018-2023 (Vintage Years 2018 through 2023). DEC has calculated all proposed Rider 14 billing factors related to Vintage Years 2018 through 2021 by use of the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved on October 29, 2013, in Docket No. E-7, Sub 1032 (the 2013 Sub 1032 Order), as revised in the 2017 DSM/EE rider proceeding, Docket No. E-7, Sub 1130 (2017 Mechanism). However, on October 20, 2020, also in Docket No. E-7, Sub 1032 (the 2020 Sub 1032 Order), the Commission approved a revised Cost

Recovery and Incentive Mechanism of Duke Energy Carolinas, LLC, for Demand-Side Management and Energy Efficiency Programs (2020 Mechanism), to be effective January 1, 2022.[1] Therefore, the Rider 14 billing factors related to estimated Vintage Years 2022 and 2023 costs and utility incentives have been calculated by use of the 2020 Mechanism (subject to certain adjustments, as described later in this testimony). In the following paragraphs, I will describe the essential characteristics of the 2017 and 2020 Mechanisms; however, each Mechanism includes and is subject to many additional and more detailed criteria than are set forth in this testimony.

Q. PLEASE DESCRIBE THE DEVELOPMENT OF THE 2017 AND 2020 MECHANISMS AND THEIR MAJOR COMPONENTS.

A. In the 2013 Sub 1032 Order, the Commission approved an Agreement and Stipulation of Settlement, filed on August 19, 2013, and amended on September 23, 2013, between DEC, the Public Staff, and certain other intervenors[2] (Sub 1032 Settlement), which proposed a new mechanism.

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[1] In the same Order, which was also issued in Docket No. E-2, Sub 931, the Commission also approved a revised DSM/EE Cost Recovery and Incentive Mechanism for Duke Energy Progress, LLC (DEP).

[2] The parties to the Sub 1032 Settlement were DEC; the North Carolina Sustainable Energy Association; the Environmental Defense Fund; the Southern Alliance for Clean Energy; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the Public Staff.

Q. HAS THE COST RECOVERY MECHANISM APPROVED IN 2013 BEEN MODIFIED SUBSEQUENTLY?

A. Yes. The Mechanism approved in the 2013 Sub 1032 Order has been modified on two occasions, once in 2017, and again in 2020.

Q. PLEASE DESCRIBE BRIEFLY THE 2017 MODIFICATIONS TO DEC'S PRIOR MECHANISM.

A. During the 2017 Sub 1130 DSM/EE proceeding the Company and the Public Staff agreed to revise Mechanism Paragraphs 19, 23, and 69, and to insert new Paragraphs 23A through 23D. These revisions, described in detail in Public Staff witness Maness Exhibit II filed in Docket No. E-7, Sub 1130, were approved by the Commission in its *Order Approving DSM/EE Rider, Revising DSM/EE Mechanism, and Requiring Filing of Proposed Customer Notice*, issued August 23, 2017.

The overall purpose of the 2017 Mechanism was to: (1) allow DEC to recover all reasonable and prudent costs incurred for adopting and implementing new DSM and new EE measures; (2) establish certain requirements, in addition to those of Commission Rule R8-68, for requests by DEC for approval, monitoring, and management of DSM and EE programs; (3) establish the terms and conditions for the recovery of certain utility incentives - net lost revenues (NLR) and a

Portfolio Performance Incentive (PPI) to reward DEC for adopting and implementing new DSM and EE measures and programs; and (4) provide for an additional incentive to further encourage kilowatt-hour (kWh) savings achievements. The 2017 Mechanism included provisions addressing mechanism continuity and review, program modification flexibility, and the treatment of opted-out and opted-in customers, as well as provisions directly affecting the calculation of the DSM/EE and DSM/EE EMF riders. A summary of these provisions is set forth in Appendix B of this testimony.[3] The 2017 Mechanism adopted and continued certain requirements from several prior Commission orders.

Q. PLEASE DESCRIBE BRIEFLY THE 2020 MODIFICATIONS.

A. The purpose of the 2020 Mechanism remains largely the same as that of the 2017 Mechanism; however, it incorporated several new provisions (as shown in Appendix C to my testimony). In addition to these new provisions, Ordering Paragraph 5 of the 2020 Sub 1032 Order states, consistent with the 2020 Stipulation, that "DEC and DEP shall work with the DSM/EE Collaborative to develop a scope for a one-time study on the market penetration of DSM/EE programs

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[3] A consolidated version of the entire 2017 Mechanism was filed on May 22, 2018, as Maness Exhibit II in DEC's 2018 DSM/EE rider proceeding, Docket No. E-7, Sub 1164.

with low- and moderate-income customers to be performed by qualified independent third-party EM&V providers. DEC and DEP … shall have the study completed prior to the cost recovery Mechanism modifications approved herein taking effect in 2022; ….”[4] The full text of the 2020 DEC Mechanism is appended at the end of the 2020 Sub 1032 Order as Attachment A.[5]

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 (Docket No. E-7, Sub 1249), the Company has proposed language to incorporate the Commission-ordered methodology to be used regarding the inclusion of the Reserve Margin Adjustment Factor. The Public Staff’s review of this language is described in the testimony of Public Staff witness Williamson.

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[4] Additional details regarding the required study are included in the body of the 2020 Sub 1032 Order.

[5] The revisions to the Mechanism recommended by the Public Staff were also supported by DEC, DEP, the North Carolina Sustainable Energy Association; the Southern Alliance for Clean Energy; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the North Carolina Attorney General’s Office.

Q. HAVE YOU PROVIDED THE PROPOSED LANGUAGE AS IT WOULD BE INCORPORATED INTO THE 2020 MECHANISM?

A. Yes. The 2020 Mechanism, revised to include the proposed language agreed to by the Company and the Public Staff (as well as the correction of a typographical error), is attached to my testimony as Dorgan Exhibit I.

BILLING FACTORS

Q. PLEASE DESCRIBE THE BILLING FACTORS AND VINTAGE YEARS BEING CONSIDERED IN THIS PROCEEDING.

A. As described in witness Listebarger's and Evans's testimonies and exhibits, DEC has requested approval of 15 billing factors (14 in total when the prospective and EMF factors for residential service are combined into a single rate) to apply to electric service rendered during the rate period January 1, 2023, through December 31, 2023. These proposed billing factors – including revenue requirement gross-up to account for the North Carolina Regulatory Fee (NCRF) – are set forth on Listebarger Exhibit 1, Pages 1 and 2.

For purposes of DEC's Rider 14 filing, the following vintage years, corresponding to the following time periods, are identified:

- Vintage Year 2018 → The year ended December 31, 2018.
- Vintage Year 2019 → The year ended December 31, 2019.
- Vintage Year 2020 → The year ended December 31, 2020.

- Vintage Year 2021 → The year ended December 31, 2021.
- Vintage Year 2022 → The year ended December 31, 2022.
- Vintage Year 2023 → The year ended December 31, 2023.

Q. WHAT ARE THE GENERAL CHARACTERISTICS OF DEC'S PROPOSED DSM/EE BILLING FACTORS?

A. DEC's proposed billing factors have the following general characteristics[6]:

1. For Vintage Year 2023, proposed Rider 14 includes billing factors (or components of billing factors) intended to recover estimated program costs, a PPI, and a Program Return Incentive (PRI), as well as estimated calendar year 2023 NLR, applicable to DSM and EE measures projected to be installed or implemented during Vintage Year 2023, all subject to future true-up;

2. For Vintage Year 2022, the proposed Rider includes billing factors (or components of billing factors) intended to prospectively recover estimated calendar year 2023 NLR

[6] In addition to provisions of the 2017 and 2020 Mechanisms, particular billing factors may also be subject to select Commission rulings in Docket Numbers E-7, Subs 831, 938, 979, and 1032. Furthermore, they may be impacted by Commission rulings in DEC's various annual DSM/EE cost and incentive recovery proceedings, as well as in individual program approval proceedings occurring after the 2013 Sub 1032 Order.

associated with Vintage Year 2022 installations, subject to future true-up;

3. For Vintage Year 2021, the proposed Rider includes billing factors (or components of billing factors) intended to: (a) prospectively recover estimated calendar year 2023 NLR associated with Vintage Year 2021 installations, subject to future true-up; and (b) true up 2021 program costs and, to the extent evaluation, measurement, and verification (EM&V) of these results has been completed, Vintage Year 2021 participation and per-participant avoided cost savings and calendar year 2021 NLR;

4. For Vintage Year 2020, the proposed Rider includes billing factors (or components of billing factors) intended to: (a) prospectively recover estimated calendar year 2023 NLR associated with Vintage Year 2020 installations, subject to future true-up; and (b) to the extent EM&V of these results has been completed, true up Vintage Year 2020 participation and per-participant avoided cost savings and calendar years 2020 and/or 2021 NLR;

5. For Vintage Year 2019, the proposed Rider includes billing factors intended to, to the extent EM&V of these results has

been completed, true up Vintage Year 2019 participation and per-participant avoided cost savings, and calendar years 2019, 2020, or 2021 NLR; and

6. For Vintage Year 2018, the proposed Rider includes billing factors intended to, to the extent EM&V of these results has been completed, true up Vintage Year 2018 participation and per-participant avoided cost savings, and calendar years 2018, 2019, 2020, or 2021 NLR.

Billing factor calculations for a given vintage year may also include adjustments to any required return on overcollections or undercollections of DSM/EE revenues, as well as adjustments to amounts collected to compensate DEC for the NCRF.

Q. COULD THERE BE FUTURE TRUE-UPS OF THE DSM/EE REVENUE REQUIREMENTS THAT SERVE AS INPUTS TO THE COMPANY'S BILLING FACTORS?

A. Going forward, certain revenue requirement components associated with prior, current, or future vintage years will remain subject to prospective or retrospective true-up adjustments. The various types of expected or possible adjustments to vintage year revenue requirements include, but are not limited to: (1) prospective recovery of NLR requirements; (2) true-ups of test year program costs; and (3) true-ups of PPI, PRI, and NLR requirements to reflect adjustments made to DSM/EE program participation and measure efficiency metrics, as determined by updated EM&V analyses.

Q. WHAT IS YOUR ESTIMATE OF THE IMPACT OF THE COMPANY'S PROPOSED BILLING FACTORS ON CURRENT DSM/EE REVENUES, RATES, AND AVERAGE CUSTOMER BILLS?

A. Based on the Company's application, and utilizing the pro forma kWh sales used by DEC to calculate DSM/EE rider rates in this case, the proposed combined DSM/EE prospective and EMF revenue requirement for the Residential customer class is approximately $77.3 million, an approximate $31.6 million decrease from the revenue that would be produced by the rates currently in effect. For a typical Residential customer (using 1,000 kWh of energy), the combined residential billing factor, as proposed, would result in a $1.38 reduction in the customer's monthly bill. For the Non-Residential class, the proposed overall combined revenue requirement is approximately $96.3 million, an approximate $15.8 million increase over rates currently in effect. The change in a Non-Residential customer's bill will depend on the particular Vintage Years of DSM or EE rates for which the customer is opted in or opted out.

PUBLIC STAFF INVESTIGATION

Q. PLEASE PROVIDE AN OVERVIEW OF YOUR INVESTIGATION OF THE COMPANY'S FILING IN THIS PROCEEDING.

A. The objective of my investigation has been to obtain and evaluate evidence to determine: (1) whether the Company's proposed DSM/EE billing factors have been calculated in conformity with, as appropriate, the 2017 or 2020 Mechanism, including any Commission Orders with which they are associated; and (2) whether the Company's filing otherwise adheres to sound ratemaking concepts and principles.

Working under my guidance, members of the Accounting Division's Program Cost Review Team (hereafter PCR Team) developed and performed a series of review procedures consistent with generally accepted professional standards. These procedures included an overall evaluation of the Company's filing, and a detailed review of workpapers and source documentation used by the Company to develop its proposed billing factors.

Integral to our investigation, the PCR Team performed a compliance review of DSM/EE program costs incurred by the Company during the 12-month period ended December 31, 2021. Pursuant to its review, and using both random and judgmental techniques, the PCR

Team selected a sample of general ledger transactions supporting test year costs included for recovery in DEC's DSM/EE EMF rider rates. This sample was intended to test whether 2021 calendar year costs included by the Company for recovery are valid costs of approved DSM and EE programs.

Q. HAS YOUR EXAMINATION RESULTED IN ANY FINDINGS?

A. Our compliance review has not discovered any findings that necessitate adjustment to costs or incentives claimed for recovery.

Q. HAS THE PUBLIC STAFF IDENTIFIED ANY OTHER ISSUES WITH THE COMPANY'S BILLING FACTOR CALCULATIONS, AS FILED?

A. Yes. Based on our review of the Company's calculations of cumulative deferred income tax for Residential EE Programs for Vintage year 2018 – as reflected on Listebarger Exhibit 3, Page 1 -- we identified several computations that appear to be the result of Excel formula errors. These errors occurred first in the Company's Rider 12 application; however, they are cascading in nature and carried forward to the succeeding two riders (Rider 13 and 14).

Q. HAS THE PUBLIC STAFF NOTIFIED THE COMPANY OF THE SUSPECTED ERRORS?

A. Yes. The Public Staff asked the Company to review its calculations in Listebarger Exhibit 3, Page 1. As a result of its review, DEC identified several schedules, in addition to Listebarger Exhibit 3, Page 1, that require correction. In total, these corrections result in a $248,707 increase to the Company's revenue requirement as originally filed. For residential rates, the increase (representing a decrease in the original downward EMF adjustment) is 0.0002 cents per kWh. The impact on the non-residential billing factors is an overall increase in rates of 0.0015 cents per kWh. However, this composite is comprised of increases in certain vintages and decreases in others.

In a conference call that took place on May 12, 2022, the Company informed the Public Staff of its intention to file supplemental testimony and exhibits on this issue. Furthermore, the Company informed the Public Staff of its intention to request Commission permission to make all needed corrections as a one-time true-up adjustment to Vintage 2021 billing factors in conjunction with DEC's 2023 DSM/EE rider application. The Public Staff has no objection to this arrangement. The Company filed its supplemental testimony and exhibits on May 16, 2022. The Public Staff has reviewed the calculations of the corrected billing factors filed by DEC and believes them to be accurate and reasonable.

Q. WHAT IMPACTS DOES THE TESTIMONY OF PUBLIC STAFF WITNESS WILLIAMSON HAVE ON YOUR CONCLUSIONS REGARDING THE DSM/EE RIDERS IN THIS PROCEEDING?

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

<u>CONCLUSIONS AND RECOMMENDATIONS REGARDING DEC'S PROPOSED RIDER 14 BILLING FACTORS</u>

Q. PLEASE STATE YOUR CONCLUSIONS REGARDING THE COMPANY'S APPLICATION AND ITS PROPOSED BILLING FACTORS.

A. In my opinion, subject to the Company making its proposed true-up adjustment to the Vintage 2021 billing factors described in its supplemental filing, the Company's Rider 14 application is in compliance with the filing requirements of N.C.G.S. § 62-133.9 and

Commission Rule R8-69 in all material respects, and the billing factors have been calculated in a reasonable manner.

Q. PLEASE STATE YOUR RECOMMENDATIONS REGARDING THE COMPANY'S PROPOSED BILLING FACTORS.

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, be approved by the Commission. These factors should be approved subject to the one-time true-up to Vintage 2021 rates proposed in the Company's supplemental filing, as well as any other true-ups as may be required in future cost recovery proceedings.

Q. DO YOU HAVE ANY CLOSING COMMENTS?

A. In rendering our opinions regarding the Company's application, the Public Staff notes that the process of reviewing all the calculations included in a DSM/EE rider proceeding involves, by necessity, reviewing and evaluating numerous assumptions, inputs, and calculations. In addition, the Public Staff's recommendations in connection with the Company's Rider 14 filing should not be interpreted to suggest that the Public Staff waives its right to raise questions or concerns regarding the same or similar assumptions, inputs, and calculations in future proceedings, DSM/EE or otherwise.

Q. ARE THERE ANY OTHER MATTERS THAT THE PUBLIC STAFF WISHES TO BRING TO THE ATTENTION OF THE COMMISSION?

A. Yes. Based on our review of costs incurred over the past few vintage years, the Public Staff believes that it would be beneficial to undertake a review focused on DEC's DSM/EE advertising and promotion costs, including their relationship to incentives directly or indirectly provided to DSM/EE program participants (participant incentives). The Public Staff has notified the Company that it plans to undertake such a review.

Q. WHY WOULD SUCH A REVIEW BE BENEFICIAL?

A. The Public Staff regularly scrutinizes DEC's DSM/EE advertising costs and has recommended certain adjustments in the past. This scrutiny has most recently focused on the "Find it Duke" (FID) program costs in the 2020 and 2021 DSM/EE rider proceedings. Although the amounts of FID advertising costs to date have been relatively modest, this review heightened the Public Staff's general interest in DEC's DSM/EE advertising and promotion (A&P) costs.

Q. WHAT WILL BE THE PURPOSE OF THE PUBLIC STAFF'S REVIEW?

A. The purpose of the Public Staff's review will be to determine the steps the Company regularly takes to right-size its DSM/EE A&P

costs, and whether there may be additional steps that could be taken. Additionally, the Public Staff will be inquiring into the relationship between A&P costs and participant incentives.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

SHAWN L. DORGAN

Qualifications and Experience

I am an accounting graduate of Appalachian State University, having earned a B.S.B.A. in Accountancy in 1988 and a Master of Science in Accountancy (concentration in taxation; functional equivalent of a Master of Science in Taxation) in 1997. After graduation, I entered the public accounting industry, working first at the Charlotte practice office of Deloitte & Touche LLP, and later for several local and regional accounting firms in the metro-Charlotte, metro-Raleigh, and metro-Atlanta areas. I am a Certified Public Accountant, licensed in the State of North Carolina.

Since joining the Public Staff in May 2016, I have provided accounting support in conjunction with rider rate proceedings, particularly in program cost reviews of demand-side management and energy efficiency programs authorized for the state's electric utilities under N. C. Gen. Stat. § 62-133.9. In addition, I have provided expert witness testimony in annual review of gas cost proceedings for Frontier Natural Gas Company, and Public Service Company of North Carolina.

I also have provided accounting and testimonial support in general rate cases involving investor-owned electric and natural gas utilities, serving as the lead technical accountant in the 2019 Duke Energy Progress general rate case (Docket No. E-2, Sub 1219).

SUMMARY OF CERTAIN PORTIONS OF THE 2017 DEC DSM/EE MECHANISM[1]

1. With the exception of Low-Income Programs or certain other societally beneficial non-cost-effective programs approved by the Commission, all programs submitted for approval will have an estimated Total Resource Cost (TRC) and Utility Cost (UC) test result greater than 1.00. For purposes of calculating cost-effectiveness for program approval, 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 as of the date of the program approval filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 MW reduction.

2. In each annual DSM/EE cost recovery filing, DEC shall perform and file (a) prospective cost-effective test evaluations for each of its approved DSM and EE programs, and (b) prospective aggregated portfolio-level cost-effectiveness test evaluations for its approved DSM/EE programs, using the same methodology for determining avoided capacity and energy benefits as set forth in the Revised Mechanism for program approval, except that the reference Commission-approved avoided cost credits shall be derived from those approved as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. For any program that initially demonstrates a TRC result, determined pursuant to paragraph 23A above, of less than 1.00, the Company shall either terminate the program or undertake a process over the next two years to improve program cost-effectiveness. For programs that demonstrate a prospective TRC result of less than 1.00 in a third DSM/EE rider proceeding after the initial non-cost-effective result, 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.

3. Industrial and large commercial customers have the flexibility to opt out of either or both of the DSM and EE categories of programs for one or more vintage years, as well as the ability to opt back into either or both the categories for a later vintage year. If a customer opts back into the DSM category, it cannot opt out again for three years; however, a customer has the freedom to opt in or out of the EE category for each vintage year. Additionally, if a customer opts out of paying the rider for a vintage year after one or more years in which the customer was "opted in," DEC may charge

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[1] For a summary of revisions made to the 2017 Mechanism by the 2020 Mechanism, please see Appendix C to the testimony accompanying this Appendix.

the customer subsequent DSM/EE and DSM/EE EMF riders only for those vintage years in which the customer actually participated in a DSM/EE program.

4. DSM/EE and DSM/EE EMF riders will be calculated on a vintage year basis, with separate riders being calculated for the Residential customer class and for those rate schedules within the Non-Residential customer class that have DEC DSM/EE program options in which they can participate.

5. Incurred DSM and EE program costs will be directly recovered as part of the annual riders. Deferral accounting for over- and underrecoveries of costs is allowed, and the balance in the deferral account(s), net of deferred income taxes, may accrue a return at the net-of-tax rate of return approved in DEC's then most recent general rate case.

6. DEC will be allowed to recover NLR as an incentive (with the exception of those amounts related to research and development or the promotion of general awareness and education of EE and DSM activities) but will be limited for each measurement unit installed in a given vintage year to those dollar amounts resulting from kWh sales reductions experienced during the first 36 months after the installation of the measurement unit. NLR related to pilot programs are subject to additional qualifying criteria.

7. The eligibility of kWh sales reductions to generate recoverable NLR during the applicable 36-month period will cease upon the implementation of a Commission-approved alternative recovery mechanism that accounts for NLR, or new rates approved by the Commission in a general rate case or comparable proceeding.

8. NLR will be reduced by net found revenues (as defined in the Revised Mechanism) that occur in the same 36-month period. Net found revenues will continue to be determined according to the "Decision Tree" process approved by the Commission on February 8, 2011, in Docket No. E-7, Sub 831.[2]

9. DEC will be allowed to recover a PPI for its DSM and EE portfolio based on a sharing of actually achieved and verified energy and peak demand savings (excluding those related to general programs and measures and research and development activities). Any PPI related to pilot programs is subject to additional qualifying criteria. Unless the Commission determines otherwise in an annual DSM/EE rider proceeding, the amount of the pre-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for

[2] Additionally, in its Order issued on August 21, 2015, in Docket No. E-7, Sub 1073, the Commission found that "it is reasonable, for purposes of this proceeding, for DEC to include negative found revenues associated with its current initiative to replace mercury vapor (MV) lighting with light emitting diode (LED) fixtures in the calculation of net found revenues used in the Company's calculation of NLR."

a vintage year will be equal to 11.5% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year. Low-income programs with expected UC test results less than 1.00 and other non-cost-effective programs with similar societal benefits as approved by the Commission will not be included in the portfolio for purposes of the PPI calculation. The PPI for each vintage year will ultimately be trued up based on net dollar savings as verified by the EM&V process and approved by the Commission. For Vintage Years 2019 and afterwards, the program-specific per kilowatt (kW) avoided capacity benefits and per kWh avoided energy benefits used for the initial estimate of the PPI and any PPI 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 Commission-approved Biennial Determination of Avoided Cost Rates as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 MW reduction.

10. If the Company achieves incremental energy savings of 1% of its prior year's system retail electricity sales in any year during the five-year 2014-2018 period, the Company will receive a bonus incentive of $400,000 for that year.

SUMMARY OF 2020 MODIFICATIONS TO THE 2017 DEC DSM/EE MECHANISM

1. Addition of a Program Return Incentive (PRI) – The PRI is an incentive to encourage DEC to pursue savings from existing and new low-income DSM/EE programs, and to maintain and increase the cost effectiveness of these programs. For these types of programs, the PRI initially will be based on 10.6% of the net present value of the avoided costs savings achieved by those DSM and EE programs. The percentage ultimately used to determine the 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 over and above that initially estimated for the Vintage Year. At no time will the PRI percentage utilized fall below 2.65% or rise above 13.25%.

2. Reduction of PPI Percentage – Beginning with Vintage Year 2022, the PPI percentage is reduced from 11.50% to 10.60%.

3. Cap and Floor on PPI - The amount of pre-tax PPI allowed will not exceed or fall below the amount that produces a specified margin over the aggregate pre-tax program costs for the PPI-eligible programs. The maximum margin is set at 19.50% for Vintage Year 2022 and afterward, until completion of the next Mechanism review. Additionally, a minimum margin over aggregate pre-tax program costs for PPI-eligible programs will be established at 10% for Vintage Year 2022, 6% for Vintage Year 2023, and 2.50% for Vintage Year 2024 and afterward, until completion of the next Mechanism review.

4. Clarification of the Criteria for Bundling Measures within Programs – Measures bundled within a DSM/EE program must be consistent with and related to the measure technologies or delivery channels of the program, unless otherwise ordered by the Commission.

5. Use of the Utility Cost Test (UCT) – The test used to calculate the prospective cost-effectiveness of new and ongoing programs is changed from the Total Resource Cost (TRC) Test to the UCT.

6. Review of Avoided Transmission and Distribution (T&D) Costs – The Public Staff and DEC will review avoided T&D costs no later than December 31, 2021 and make recommendations for any adjustment in the rider proceedings thereafter. Avoided T&D costs will be reviewed at least every three years and will be updated if they change by at least 20%.

7. Additional Incentive and Penalty - If the Company achieves annual energy savings of 1.0% of the prior year's system retail electricity sales in any year during the four-year period of 2022-2025, it 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, it will reduce its EE revenue requirement by $500,000.

8. Non-Energy Benefits - The definition of the TRC Test is revised to provide that non-energy benefits, as approved by the Commission, may be considered in the determination of TRC results.

MS. EDMONDSON: All right. The Public Staff now calls David Williamson to the stand.

COMMISSIONER BROWN-BLAND: Good afternoon, Mr. Williamson.

MR. WILLIAMSON: Good afternoon.

COMMISSIONER BROWN-BLAND: If you'd place your left on the bible and raise your right.

DAVID WILLIAMSON;

having been duly sworn,

testified as follows:

COMMISSIONER BROWN-BLAND: Thank you.

DIRECT-EXAMINATION BY MS. EDMONDSON:

Q Please state your name and business position.

A My name is David Williamson and I'm a Utilities Engineer with the Public Staff's Energy Division.

Q And Mr. Williamson, on May 17th, 2022, did you prepare and cause to be filed testimony consisting of 37 pages as well as an Appendix A and an exhibit marked as Public Staff D Williamson Exhibit 1?

A Yes. And there was also an Exhibit 2.

Q Sorry. Thank you for reminding me. Do you have any changes or corrections to your testimony, appendix, or exhibits?

A   No, I do not.
Q   And if you were asked the same questions today, would your answers be the same?
A   They would.

MS. EDMONDSON: Commissioner Brown-Bland, we request that Mr. Williamson's testimony be admitted into evidence as if given orally from the witness stand and his exhibits be marked as prefiled.

COMMISSIONER BROWN-BLAND: There being no objection, that motion is allowed.

(WHEREUPON, D. Williamson Exhibits 1 and 2 are marked for identification as prefiled.)

(WHEREUPON, the prefiled direct testimony and Appendix A of DAVID M. WILLIAMSON is copied into the record as if given orally from the stand.)

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1265

In the Matter of Application of Duke Energy Carolinas, LLC, for 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	)))))))	TESTIMONY OF DAVID M. WILLIAMSON PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION

May 17, 2022

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 March 1, 2022 application and exhibits of Duke Energy Carolinas, LLC (DEC), for approval of its demand-side management (DSM) and energy efficiency (EE) cost recovery rider for Vintage Year 2023 (Rider 14).

My testimony discusses: (1) the portfolio of DSM/EE programs included in the proposed Rider 14, including modifications to those programs; (2) the ongoing cost-effectiveness of each DSM/EE program; (3) the responses to Commission Questions filed as Appendix A to the Commission's December 17, 2021 Order Requiring Filing of Additional Testimony; and (4) the evaluation, measurement, and verification (EM&V) studies filed as Exhibits A through F to the testimony of Company witness Robert P. Evans.

Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR INVESTIGATION OF DEC'S PROPOSED RIDER 14?

A. I reviewed the application, supporting testimony and exhibits, and DEC's responses to Public Staff data requests. In addition, I reviewed the following documents which are pertinent to Rider 14:

1. The Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved on August 23, 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-7, Sub 1032 (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 Nos. E-2, Sub 931, and E-7, Sub 1032 (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 Evans Exhibit E, the EM&V reports filed by DEC as Evans Exhibits A through F be accepted; and

3. That the EM&V report filed as Evans Exhibit E should be held open until an updated report is filed in the next rider proceeding.

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.

Q. FOR WHICH PROGRAMS IS DEC SEEKING COST RECOVERY THROUGH THE DSM/EE RIDER IN THIS PROCEEDING?

A. In its proposed Rider 14, DEC is seeking recovery of the costs and incentives associated with the following programs:

- Energy Assessments;
- EE Education;
- Residential Smart $aver® Energy Efficient Appliances and Devices;

- Residential Smart $aver® EE (formerly the HVAC EE Program);
- Multi-Family EE;
- My Home Energy Report (MyHER);
- Residential Neighborhood Energy Saver (formerly Income-Qualified Energy Efficiency and Weatherization Assistance);
- Residential New Construction;
- Power Manager;
- Nonresidential Smart $aver® Energy Efficient Products and Assessments Program:
  - Energy Efficiency Food Service Products;
  - Energy Efficiency HVAC Products;
  - Energy Efficiency IT Products;
  - Energy Efficiency Lighting Products;
  - Energy Efficiency Process Equipment Products;
  - Energy Efficiency Pumps and Drives;
  - Custom Incentive and Energy Assessments;
- PowerShare®;
- Small Business Energy Saver;
- EnergyWise for Business; and
- Nonresidential Smart $aver® Performance Incentive.

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

A. The cost-effectiveness of each DSM/EE program is reviewed when it is proposed for approval and then annually in the rider proceedings. Pursuant to the 2020 Mechanism, cost-effectiveness is evaluated at both the program and portfolio levels. Cost-effectiveness is reviewed using the Utility Cost (UC), Total Resource Cost (TRC), Participant, and Ratepayer Impact Measure (RIM) tests. Under each of these four tests, a result above 1.0 indicates that the benefits of the program outweigh the costs[1] so that the program is cost-effective. A program's result may exceed 1.0 on one or more tests, and below 1.0 on other tests. While the 2017 Mechanism uses the TRC and UC tests to evaluate initial and ongoing cost-effectiveness, the 2020 Mechanism uses the UC test only.

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

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[1] Each test uses different costs and benefits in calculating the cost-effectiveness score.

[2] "Cost beneficial" in this sense represents the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service, or avoiding energy generation from existing or new facilities or purchased power.

utility (the overall system benefits are greater than the utility's costs incurred to offer the program, including incentives paid to participants). The Participant test is used to evaluate the benefits against the costs specific to those ratepayers who participate in a program. The RIM test is used to understand how the rates of customers who do not participate in a program will be impacted by the program (but without consideration of what future rates would have been otherwise).

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

A. In each DSM/EE rider proceeding, DEC files the projected cost-effectiveness of each program and for the portfolio as a whole for the upcoming rate period (Evans 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 DSM/EE rider proceedings look more specifically at the actual performance of a typical measure, providing an indication of what to expect 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 the current filing and develops a trend of cost-effectiveness projections that serves 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. While each DSM/EE rider proceeding provides a snapshot of the cost effectiveness and performance of the programs and portfolio, the Public Staff does not rely on one specific calculation to evaluate program performance. The trends provide a clearer understanding of how changes in participation, avoided cost inputs, marketing and education about DSM/EE matters, and customer behaviors and preferences impact overall program performance.

Program design and delivery may need to change to address these changes in cost effectiveness. For example, incentive levels may need to be increased or decreased to maintain overall cost effectiveness. Impacts from changes in the avoided cost inputs may increase or decrease cost effectiveness because of the changes to the value of energy savings benefits realized from the portfolio. In either case, the trends in cost effectiveness are more telling of overall performance. As long as programs are reasonably forecasted to produce cost effective savings, the Public Staff generally supports their approval and inclusion in the DSM/EE rider.

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

A. Forward-looking projections of program performance over the last few years have remained constant overall. Some programs have benefitted from changes to the make-up of measures offered, both additions and deletions. The performance of low-income programs shows evidence of improved cost-effectiveness over time; however, the cost-effective performance of other programs, such as the Smart Saver EE program, continues to vacillate.

These trends of program forecasts are shown for Vintage years 2020, 2021, 2022, and 2023 in Williamson Exhibit No. 1.

Q. DO YOU HAVE AN EXPLANATION FOR THE CHANGES SEEN IN THE FORWARD-LOOKING PROJECTIONS OF COST EFFECTIVENESS SCORES OVER THE FOUR YEARS IN YOUR EXHIBIT 1?

A. Yes. While many programs continue to be cost effective, the TRC and UC test scores as filed by the Company for all programs have shown a natural ebb and flow over the years of DSM/EE rider proceedings, mainly due to the changes in avoided cost rate determinations. In addition, decreasing cost-effectiveness may be partially attributable to a reduction in the unit savings from the original estimates of savings as determined through EM&V of the program. As programs mature, baseline standards may increase, or avoided cost rates decrease, thus, 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.

Q. DOES THE PUBLIC STAFF ALSO LOOK AT THE ACTUAL COST EFFECTIVENESS RESULTS?

A. Yes. As the EM&V reports for the Company's portfolio of programs are completed, the Company provides the Public Staff with updated, actual cost-effectiveness test results for each program and program year, in this case Vintage years 2019, 2020, and 2021. These actual cost-effectiveness test scores are attached as Williamson Exhibit 2.

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

A. While the timing of the incorporation of EM&V within the portfolio may be different from one program to another, having a rolling record of actual cost-effectiveness results provides the Public Staff with confirmation that the activities within the portfolio have been and continue to be worthwhile endeavors for ratepayers. In addition, actual test results highlight programs that ultimately perform above or below original projections. These test results reflect the annual updates to cost-effectiveness resulting from completed EM&V and finalized participation numbers that are not shown again after the earlier rider proceedings are completed.

Program Performance

Q. PLEASE DISCUSS THE PERFORMANCE OF THE PORTFOLIO.

A. The Company's DSM/EE portfolio offers a wide variety of measures to support the everyday activities of its customers in an energy efficient manner. The Public Staff's review of program performance involves: (1) reviewing cost-effectiveness trends; (2) reviewing Evans Exhibit 6, which provides specific information on each program's marketing strategy and potential areas of concern; and (3) performing an overall qualitative analysis.

The Public Staff also uses its involvement in the Company's bi-monthly EE Collaborative meetings to keep abreast of how the portfolio of programs is performing. During these meetings, the Collaborative discusses program performance (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 review discussed above, the Public Staff believes that the historical performance of the Company's programs is reasonable.

Avoided Transmission and Distribution Update

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 only for this proceeding, 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 previous 2017 study. However, the Public Staff has been working with the Company in this study review process to look at the inputs into the model at a more granular level.

Q. CAN YOU EXPLAIN WHAT YOU MEAN BY LOOKING AT THE INPUTS AT A MORE GRANULAR LEVEL?

A. Yes. Paragraph 78 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.

For clarification, the Public Staff did not conduct a prudence review similar to that performed in a general rate case investigation. Instead, the Public Staff looked at the types of T&D projects that were included in the avoided T&D methodology and whether those projects were avoidable due to the implementation of DSM/EE programs or were due to ordinary customer growth.

After the Public Staff initially 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 could not conclude this work by December 31, 2021, meaning that the Company did not have a reasonable amount of time to incorporate it into their upcoming filing. The Company and the Public Staff then agreed to use certain avoided T&D rates for Rider 14 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 Rider 14 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 THE PROXY RATES FOR AVOIDED T&D DETERMINED FOR USE IN THIS RIDER FILING?

A. Until the Company and Public Staff can conclude their review of the avoided T&D rate study, the avoided T&D rates being used in this proceeding are based on an approximate average of the prior avoided T&D rates used in the last DSM/EE rider proceeding and the rates presented to the Public Staff by DEC in the third quarter of

2021. The proxy rates agreed to by the Public Staff and DEC, 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, represent rates closer to actual avoided T&D rates that are based on a current level of project costs versus the lower level of project costs used in the previous study.

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 a final Avoided T&D Rate Study should be finalized this summer 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.

Inclusion of a RMAF in the DSM/EE Mechanism

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

A. Yes, pursuant to the Commission's order in Docket No. E-7, Sub 1249, the Company proposed language for inclusion in the Mechanism regarding the methodology to be used for the RMAF.

Q. HAS THE PUBLIC STAFF REVIEWED THE PROPOSED LANGUAGE?

A. Yes. Since the issuance of the Commission's order on September 10, 2021, the Company and the Public Staff have worked together to craft agreeable language for the RMAF. Evans Exhibit 18 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 Evans Exhibit 18 for inclusion in the Company's DSM/EE Cost Recovery Mechanism. Public Staff witness Dorgan includes the current Mechanism with the RMAF language included as Exhibit I to his testimony.

Commission Questions – Appendix A

Q. DESCRIBE ANY IMPACT THAT THE FULL DEPLOYMENT OF AMI AND CUSTOMER CONNECT HAS HAD OR IS EXPECTED

TO HAVE ON THE IMPLEMENTATION OF EE AND DSM PROGRAMS AND RIDER CALCULATIONS.

A. Now that DEC has completed the deployment of Advanced Metering Infrastructure (AMI) and the updated Customer Connect billing system, the Company is able to obtain a more refined look at how its system is operating and how customers are using energy at the point of delivery. More importantly, AMI is allowing customers to make more informed decisions about their consumption behavior and providing more opportunity for customers to react in times when there is high demand and system conditions warrant load reductions. It is also allowing DEC 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 also 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. I discuss TOU rates later in my testimony when I discuss Dynamic Pricing rates.

The potential for increased participation in DSM and EE programs as a result of the implementation of AMI and Customer Connect should result in system and operational efficiencies that in turn lead to greater savings for both DEC and the 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.

Q. HAS DEC IDENTIFIED ANY WAYS TO LEVERAGE AMI AND CUSTOMER CONNECT TO INCREASE THE EFFECTIVENESS AND/OR REDUCE THE COST OF ITS EE AND DSM PROGRAMS?

A. As DEC collects more AMI data and is able to identify system trends for usage and costs on a more granular level, the design of DSM/EE programs should evolve due to the increased education available to customers.

The Company stated in its response to a Public Staff data request that DSM programs, like the Power Manager program, have used AMI data to validate the responsiveness of customers during peak time events. The Company is able to more accurately determine how many megawatts of load reduction occurred during each hour that the reduction activity was called, along with a list of customers that did not activate or did not shed as much load as expected.

Currently, customers are provided financial incentives for their participation in DSM programs that allow Duke to activate the customer's DSM (load control switches/smart thermostat) when there are system needs.

The personalization of data provided to participants, using AMI and a customer portal to view the data from their interval AMI meter, will lead to more personalized conversations with customers. This new level of personalization will be key to informing individual customers about their energy consumption and how they can impact their bills. Engaging customers about the price of energy at a particular moment, giving them the data and access to interval data to understand the importance of their energy-oriented response, and then allowing them to see the result of their decisions (positive or negative), will help Duke achieve a more efficient system. Simple programs, priced appropriately, combined with engaging customer participation, is the low-hanging fruit that will bring out these system efficiencies.

Q. DESCRIBE IN DETAIL ANY COST SAVINGS OR INCREASED COST EFFECTIVENESS THAT CAN BE ATTRIBUTED TO DEC'S DEPLOYMENT OF AMI AND CUSTOMER CONNECT.

A. The Public Staff agrees with the Company's response that the deployment of AMI and Customer Connect may produce savings and that it is difficult to determine those savings at the present time.

Moreover, the Public Staff believes there has not been sufficient time to properly assess the transformational aspects of AMI and Customer Connect.

Currently, there are some immediate cost savings as a result of meter reading expense reductions, or savings related to connections and disconnections. Those savings have already been observed in the reduced reconnection and meter fees that were part of DEC's last general rate case (Sub 1214). However, there are other savings and cost reductions that should result from the deployment of customer-facing programs, account/data access, and programs to enable customers to save on their bills, and sufficient time has not elapsed to adequately evaluate these savings and reductions. These items are outside of the scope of the DSM/EE Rider, since they have already been approved in the Company's general rate case.

AMI's ability to collect data in sub-hourly intervals along with the ability to assimilate this new level of customer data are leading to a new access point for customers. Having access to interval data is a benefit to both the utility and the customer. Unlike in the last decade of DSM/EE deployment where the marketing of EE targeted all customers,[3] the utilities now have the ability to analyze the next-day

[3] As an example, DSM programs have historically been available to anyone that wishes to participate. While all customers will still have access to programs, in this new paradigm of data access the utilities will be able to personalize their marketing approach for customers that can benefit the most.

sub-hourly interval data of a home and provide more personalized DSM/EE opportunities. Prior to having access to AMI data, utilities relied on load research tools to develop a general sense of customer usage. The Company stated in response to a Public Staff data request that it believes the introduction of AMI and Customer Connect alone will lead to more customers participating in its DSM/EE programs. It also acknowledged that as customers become more aware of their usage by reviewing their usage data, they may be encouraged to take action and participate in available DSM/EE programs to reduce their consumption.

Educating customers about the tools available to them through their online portal as a result of AMI and Customer Connect will take time to gain traction.

Q. 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. The Public Staff agrees with the Company's response that progress is being made to incorporate 15-minute, 30-minute, and hourly usage data in the evaluation reports. As stated earlier, utilizing the sub-hourly data will provide a better view of the impacts that are being realized by the activation of the customer DSM.

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.

Currently, the programs that may have their EM&V impacted through the use of AMI data are:

- CIG-DRA;
- EnergyWise for Business;
- Power Manager;
- EnergyWise Home;
- PowerShare;
- Residential New Construction;
- Residential Assessments;
- EE Education;
- Neighborhood Energy Saver;
- Low-Income Weatherization;
- Smart Saver;
- Online Savings Store/Marketplace;
- MyHER;
- Save Energy and Water Kits; and
- Non-Residential Custom.

As the Company begins to use AMI data in its EM&V evaluations, the Company 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.[4]

Q. PROVIDE A TABLE COMPARING THE PERFORMANCE OF DEC'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.

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

The Public Staff notes that Williamson Exhibits 1 and 2 provide the actual and forecasted performance of the portfolios for Vintage Years 2020 and 2021. It should also be noted that the data provided contains the portfolio of programs, all of which are in different stages 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.

Q. INCLUDE IN THE SAME TABLE A COMPARISON OF DEC'S FORECASTED DSM/EE KWH SAVINGS AND ACTUALLY ACHIEVED KWH SAVINGS DURING THE SAME TEST YEAR PERIODS STATED ABOVE.

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[4] Typically, an evaluator chooses either a billing analysis or an engineering analysis to assess the savings impact of a program.

A. Please see the response to the previous question.

Q. PROVIDE A RESPONSE TO PUBLIC STAFF WITNESS WILLIAMSON'S TESTIMONY IN DOCKET NO. E-7, SUB 1249 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.

A. The Company in its response describes 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 acknowledges that all customers at their option 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 April 2021 was the earliest date that customers had access to the MyAccount AMI charts. It is expected 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 Mechanism, the Company's EM&V reports typically use data points from a sample taken several years prior.

The Company discusses 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 is still to be determined.

Q. HOW DOES DEC DISTINGUISH BETWEEN THE ORGANIC ENERGY SAVINGS IMPACT OF USING AMI VERSUS THE ENERGY SAVINGS FROM THE MYHER PROGRAM?

A. For reasons explained in the response to the previous question, the Public Staff believes that the Company's response to this question should be supplemented. The Company stated that “all Duke Energy customers, at their option, may go online to see their hourly usage AMI data, regardless of whether they receive a My Home Energy Report.” The Company then addresses the distinctions that are made for determining energy savings, namely that they have two identified groups: customers that receive the My Home Energy Report and customers that do not. However, the Company does not address how customer access to sub-hourly AMI data might influence the customer’s usage, nor how that influence might be analyzed in the EM&V process.

The influence of AMI data access on the customer is the heart of the concern with the evolution of the MyHER program. Future evaluations of the MyHER program must distinguish the kWh savings of the MyHER program itself from any other kWh savings that might be realized by the customer’s access and use of AMI data that occurs separate from the MyHER program. The delivery of energy services to customers is changing so that customers may better understand their energy-consuming behavior.

The MyHER program is intended to provide a comparative analysis of a customer’s energy usage versus other similar customers. That analysis also includes energy-saving tips that customers can adopt to reduce their consumption. Immediate access to AMI data through a customer web portal, mobile phone application, and more personalized advertising and other communications between the Company and customer are also intended to prompt customers to be more aware of their energy-consuming behavior. This improved access to data and the means to make more informed energy-usage choices are engaging customers in ways that produce both customer-specific benefits and system benefits that reduce system costs. The behavioral impacts from better access to data is beyond the scope of the MyHER program. EM&V must begin to distinguish how these non-MyHER-related behavioral impacts are influencing the kWh savings from MyHER and other DSM/EE programs.

The Public Staff believes that major energy savers like the MyHER report need to be given a more rigorous review.[5] The distinction between the kWh savings produced by the MyHER program and the kWh savings produced by non-MyHER-related aspects of utility service must be considered when evaluating programs like the MyHER program. Currently, MyHER comprises almost one-half of the residential portfolio of kWh savings. Such an EE program requires a rigorous EM&V effort. Failing to understand the significance of MyHER's ability to produce behavioral energy savings means customers might be paying for Net Lost Revenues and a

[5] The MyHER program in this docket represents 72% of the energy savings for Vintage 2023's residential portfolio and 43% of the Company's total portfolio for Vintage 2023.

Portfolio Performance Incentive for savings that were not directly attributable to the MyHER program. As data analysis tools become more readily available to customers, the distinction between savings attributable to MyHER and those attributable to other factors becomes more impactful to system planning and cost recovery.

The proceeding in Docket No. E-100, Sub 161, also has implications for the use of customer data and how that data might influence customer behavior. Data available to the Company and third parties could be used to craft new goods and services that are meant to assist customers in reducing their consumption and bills. These initiatives also need to be taken into consideration during the EM&V process for the MyHER program, and potentially for other programs to avoid exaggerating the energy savings from the MyHER program.

Q. DOES DEC 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.

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

April 2021. As with any initiative, it will take time to grow awareness and usage. Customer awareness and marketing will allow for customers to understand what this portal has to offer.

As stated earlier, it will be very important to include in the EM&V report a review of how AMI usage data is impacting the evaluation of the MyHER program. A primary question to consider is how the influence of a monthly paper report on energy usage will compare to a customer's ability to instantaneously access 24-hour lag of sub-hourly interval data. As noted above, the Company has started offering a Smart Meter Usage App. The Company has also been providing semi-annual reports[6] on the development, goals, and learnings from the deployment of the mobile app. In the most recent report, filed on January 18, 2022, the Company stated that approximately 9,400 North Carolina DEC and DEP customers had enrolled in this pilot program. The most illuminating aspect of the report was the analysis of the percentage of customers continuing to login to view their usage data. As time went on, customers viewed their online data less and less. In fact, after two months of enrollment, roughly only 45% of customers continued to view their data through the mobile app. After approximately ten months, 0% of customers were continuing to view their usage via the app.

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[6] Docket Nos. E-7, Sub 1209 and E-2, Sub 1213.

The Public Staff acknowledges that, while the mobile app is still in the pilot phase, getting comparable data to the paper report will have its challenges. However, data points like these raise the concern that a periodic paper report may result in more savings compared to the digital route that electric service is transitioning to with its AMI mobile app.

Q. PROVIDE A COPY OF THE MOST RECENT MYHER EM&V REPORT.

A. The Company provided the most recent MyHER EM&V report in its response to this question. It was finalized on July 10, 2019, and its findings were based on data collected between June 2017 and May 2018. Duke therefore did not have the benefit of its AMI data and Customer Connect system when this EM&V report was completed. The Company indicated that the next MyHER report is currently being finalized with data collected during calendar year 2020 in its discussion on MyHER in Evans Exhibit 6, and as further detailed in Evans Exhibit 12.

Q. DESCRIBE HOW DEC WILL INTEGRATE ITS NEW DYNAMIC PRICING RATES INTO ITS EXISTING EE AND DSM PROGRAMS.

A. 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 in either the current

Mechanism or the initial SaveAWatt proceeding that preceded the current Mechanism.[7] 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 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 not different than customers choosing to increase their loads. The only difference is the effect on net load - one is an increase; the other is a decrease. Those net impacts are recovered on a cost-of-service basis from all customers. The cost of the DSM/EE portfolio is recovered from the targeted customer class.

Another 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 DEC to

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[7] See Docket No. E-7, Sub 831. 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.

incorporate the impacts as load resources when system conditions justify their use.

Q. DESCRIBE ANY IMPACTS THAT DEC'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. Please see the response to the previous question. 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 characteristically different from the capacity savings realized from the Company's active management of a DSM program. Dynamic pricing tariffs can provide further motivation to the customer to adopt EE measures. However, adoption and the incremental savings realized from the 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 sought to delineate the influence of dynamic pricing tariffs on EE adoption rates. Furthermore, the Public Staff is not aware of any data or calculations of cost-effectiveness that incorporate any impacts from dynamic pricing tariffs.

Q. 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 Power Manager. All of these program expansions originated within the Company. However, the Company presented each of the measures listed in Evans Exhibit 17 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 reasonable at this time.

Q. DESCRIBE ANY IMPLICATIONS THAT S.L. 2021-165 WILL HAVE OR IS EXPECTED TO HAVE ON DEC'S EE AND/OR DSM PROGRAMS AND THE RIDER APPLICATION. FOR EXAMPLE, DESCRIBE WAYS IN WHICH DEC COULD OR WILL INCORPORATE EE PROGRAM SAVINGS INTO ITS CALCULATIONS RELATED TO CARBON PRODUCTION TO MEET THE CARBON REDUCTION GOAL MANDATED IN S.L 2021-165.

A. The Public Staff currently views two potential scenarios where S.L. 2021-165 could have influence on actions in the DSM/EE programs and rider application.

One scenario is related to the avoided cost methodology. Currently, in the biennial avoided cost proceeding, the calculation of avoided cost excludes the cost of carbon. If a cost of carbon were to be introduced and approved in an avoided cost proceeding, then 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 performance incentive that the utilities are allowed to recover. If a cost of carbon were to be introduced and approved in the avoided cost proceeding and ultimately flowed through to the DSM/EE rider proceeding, the Public Staff would need to assess what, if any, potential changes to the cost recovery mechanism would need to take place to ensure that savings incentives are handled appropriately.

The second scenario is a non-financial impact to the DSM/EE rider and programs. The Public Staff believes that the method of accounting for carbon reductions for purposes of satisfying S.L. 2021-165 would be similar to how energy efficiency credits are counted for compliance with the Renewable Energy and Energy Efficiency Portfolio Standard (REPS). This method of accounting for carbon reductions would not have a 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.

<u>EM&V</u>

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

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 Evans Exhibits A through F.

I also reviewed previous Commission orders to determine if DEC 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 THE EM&V REPORTS YOU REVIEWED?

A. Yes, I do. Based on my review and discussions with the Company, it has been determined that Evans Exhibit E 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. SHOULD THE REMAINING EM&V REPORTS FILED IN THIS PROCEEDING BE ACCEPTED AS COMPLETE?

A. Yes, all of 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. I reviewed: (1) workpapers provided in response to data requests; (2) a sampling of the EE programs; and (3) Evans Exhibit 1, which incorporates data from various EM&V studies. I also met with DEC personnel to review the calculations, EM&V, DSMore modeling inputs, and other data related to the program/measure participation and impacts. Based on my ongoing review of this data, I believe DEC has appropriately incorporated the findings from EM&V studies and annual participation into its rider calculations consistent with Commission orders and the Mechanisms.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

APPENDIX A

QUALIFICATIONS AND EXPERIENCE

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 Utilities Engineer in the Electric Section – Rates and Energy Services. My current responsibilities include reviewing applications and making recommendations for certificates of public convenience and necessity of small power producers, master meters, and resale of electric service. Moreover, my responsibilities include 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 related to Electric and Natural Gas Investor-Owned Utilities. I have filed testimony in various Duke Energy Carolinas, Duke Energy Progress, and Dominion Energy North Carolina DSM/EE rider proceedings. I have also filed testimony in recent general rate case proceedings for Piedmont and Public Service Natural Gas companies related to the approval and tracking of their portfolio of EE programs.

MS. EDMONDSON: All right. And I will make him available for Commission questions.

COMMISSIONER BROWN-BLAND: All right. I take it there's no cross-examination for this witness.

(No response)

COMMISSIONER BROWN-BLAND: Commission questions?

COMMISSIONER HUGHES: Just one.

THE WITNESS: Okay.

COMMISSIONER BROWN-BLAND: Commissioner Hughes.

COMMISSIONER HUGHES: There was one that, sort of, stumped us last time, so hopefully, I'll get it clearer this time.

EXAMINATION BY COMMISSIONER HUGHES:

Q So as far as the incentive of providing lost revenue to the Company for a new measure, as far as that incentive, it's my understanding that that incentive is offered so that there's not disincentive for them offering new programs, so it's essentially a decoupling. Is that your understanding, in general, of the purpose of it?

A So you're talking about net lost revenues?

Q Net lost revenues.

A So yes. Net lost revenues are -- is a mechanism to essentially make the Company whole, to incentivize them, but they're not lowering their sales without gaining that -- the dollars from the sales that they would have incurred.

Q So following through with that is the theory of net lost revenues that the last time the rates were set, they couldn't anticipate the revenue lost that was going to come from a new program, so that is why there's a net loss?

A So I guess for a reference point, are you talking about in just any year or any year after a rate case?

Q In any year. Isn't the principle that the savings couldn't be anticipated during the rate case, so then when the savings occurred, I think the calculation is how much revenue, what did they earn?

A Got you. So yes. Until EM&V is completed, we don't really know the level of energy savings that are being incurred from a program. There are estimates and forecasts that the Company is using based off of previous EM&V and based off of their knowledge of the technical -- the engineering specs of the measure itself, but as the next level of EM&V is completed, that would go through the previous years that you're talking about. That's when the net lost revenues would essentially be solidified. So if you look into the -- I guess Company witness Listebarger, she goes back several years to show net lost revenues, and that's because EM&V is still being completed to kind of finalize those numbers.

Q Okay. So does the Public Staff, in your review of the application, go back to the last rate case to see whether that rate case reflected the savings when that rate -- when those rates were calculated?

A In terms of the rate case, I can't answer that question right now. But in terms of the Rider itself, part of one of the initiatives that we do in every Rider proceeding, for all three of the utilities: Duke Carolinas, Duke Progress, Dominion, we have a meeting scheduled with their EM&V group and their employees that kind of collect the exhibits that show all of the energy savings for each year.

And, essentially, we'll sample one

of the EM&V reports that was submitted in that Rider proceeding. And, essentially, walk back to see when the -- because for an EM&V, the impacts of the EM&V take place the month after the sample period in that report, and so we'll go back and see, at the month after the sample period, the differences in energy savings that are being reported for that program. So that's the type of the verification that we see as far as when EM&V's are being incorporated.

Another question that we ask during that meeting is have we had a rate case recently or within the last few years. Here lately we have, and so we'll go back because after a rate case, those net lost revenues are then zeroed out, and so a new baseline of net lost revenues is starting to accumulate.

Q So I understand that net zero out -- the theory behind the net zero out is that more recent rate case took into consideration the savings of the measure so there's no -- so the rates were corrected, so there's no longer any net lost revenue moving forward. Is that the theory?

A From the measures that were put in place prior to the rate case.

Q Okay.

A From those savings for the measure lives -- for those portions of the measure life during the rate case, I believe that is correct, subject to check.

Q So does Public Staff -- how does Public Staff deal with the situation where there were savings prior to the rate case from a previous year of the program, as we've heard each year, is a new program. So there were savings prior to the rate case, and those savings continue. Do you examine where the lost revenues are or do any kind of calculation about whether those revenues were -- sales were reflected in the last rate case? Does that make sense?

A I believe I understand your question. I personally was not the rates witness for the Public Staff during that period. Unfortunately, I don't think I'll be able to provided an adequate answer for you on that, but I do know that in creating the kilowatt-hour sales forecast that are in the rate cases, the EE impacts are already embedded into that sales forecast.

Q So just to be clear, when you say embedded in the sales forecast, that means if the sales didn't occur of the year previously, then in that sales forecast, they're not adding back the sales. It's just --

A So the sale -- essentially, the sales that are used for the Test Period of a rate case are the actual sales that are generated, so that's going to include all of the EE impacts that are realized during that Test Period, so they're it.

COMMISSIONER HUGHES: No further questions.

THE WITNESS: Okay.

COMMISSIONER BROWN-BLAND: Any other questions from the Commission?

(No response)

COMMISSIONER BROWN-BLAND: Are there questions on Commission's questions from the intervenors, from the Company?

MS. FENTRESS: No questions.

COMMISSIONER BROWN-BLAND: And from Ms. Edmondson?

MS. EDMONDSON: No questions.

COMMISSIONER BROWN-BLAND: All right, Mr. Williamson. Ms. Edmondson, I'll entertain?

MS. EDMONDSON: Yes. I would like to have his exhibits entered into the record.

COMMISSIONER BROWN-BLAND: There being no objection, that motion is allowed.

(WHEREUPON, Williams Exhibits 1 and 2 are admitted into evidence.)

MS. EDMONDSON: Thank you.

COMMISSIONER BROWN-BLAND: Mr. Williamson, you may step down.

THE WITNESS: Thank you.

COMMISSIONER BROWN-BLAND: Thank you. Is there anything else to come before the Commission pertaining to this matter?

MS. FENTRESS: Presiding Commissioner Brown-Bland, yes. It has come to our attention that Panel Cross-examination Exhibit 1, in response to Question 2, is representative of our system numbers and not North Carolina. That is not what the answer to the question was. I believe it was indicated it was North Carolina. We will file a corrected exhibit.

COMMISSIONER BROWN-BLAND: That was the initial question asked for clarification by Commissioner Hughes?

MS. FENTRESS: That's correct.

COMMISSIONER BROWN-BLAND: All right.

MS. FENTRESS: It is, in fact, system numbers.

COMMISSIONER BROWN-BLAND: So that is a correction to the initial testimony.

MS. FENTRESS: Yes.

COMMISSIONER BROWN-BLAND: All right. Thank you for that. And I believe it was answered. There's nothing else to come before the Commission, at this time, so are there -- with regard to the post-hearing briefs and the proposed orders, is it acceptable to everyone that they be filed within 30 days after the mailing of the transcript?

MS. EDMONDSON: Yes.

COMMISSIONER BROWN-BLAND: Or notice of the transcript is given? All right. So ordered. There being nothing further, I thank you-all for your attention and participation, and we will be adjourned.

(The proceedings were adjourned)

C E R T I F I C A T E

I, TONJA VINES, DO HEREBY CERTIFY that the proceedings in the above-captioned matter were taken before me, that I did report in stenographic shorthand the Proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

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Tonja Vines