PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Friday, September 16, 2022

TIME: 9:00 a.m. - 12:16 p.m.

DOCKET NO.: E-100, Sub 179

BEFORE: Chair Charlotte A. Mitchell, Presiding

Commissioner ToNola D. Brown-Bland

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:

Duke Energy Progress, LLC, and

Duke Energy Carolinas, LLC,

2022 Biennial Integrated Resource Plans

and Carbon Plan

VOLUME: 13

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

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

13

14

15

16

17

18

19

20

21

22

23

24

E X H I B I T S

P R O C E E D I N G S

CHAIR MITCHELL: All right. Let's go ahead and go on the record. Mr. Jirak, I understand you've got a motion?

MR. JIRAK: Yes, Chair Mitchell, thank you very much.

CHAIR MITCHELL: Go ahead.

MR. JIRAK: As a quick update for the Chair and for the Commission, shortly after the hearing yesterday, the parties were able to get together and collaboratively work out a solution whereby any remaining questions on Commissioner questions would be deferred until the Modeling Panel reappears on rebuttal. So we really appreciate the collaborative nature of that solution which allowed our witnesses, pending your approval, to be permitted to step down at this time.

CHAIR MITCHELL: All right. I'll allow the witnesses to step down, appreciate the work amongst yourselves to resolve the issues.

MR. JIRAK: Thank you very much. At this time, entertain motions to enter exhibits into the record?

CHAIR MITCHELL: That's right. All right. So those of you who have introduced exhibits, either on cross-examination, let's see, or Commissioners' questions, make a motion now.

MR. BREITSCHWERDT: Chair Mitchell, if I could start, please. The 10 exhibits to the Modeling Panel's prefiled testimony, if I could have those entered into the record. I would also ask that the summary of testimony that was prefiled in the Commission's Sub 179A docket could also be entered into the record as well.

CHAIR MITCHELL: All right. Hearing no objection to that motion, Mr. Breitschwerdt, I'll allow it. So the witness testimony summary will be received into evidence as will the exhibits to their direct testimony which have already been marked for identification.

(Modeling and Near-Term Action Panel Exhibits 1 through 10, were admitted into evidence.)

(Whereupon, the prefiled summary testimony of the Modeling and Near-Term Action Panel was copied into the record as if given orally from the stand in

Volume 7 at the time their prefiled direct testimony was entered.)

CHAIR MITCHELL: All right. Ms. Cress.

MS. CRESS: Thank you, Chair Mitchell. I believe CIGFUR II and III Modeling Panel Direct Cross Number 1 has already been entered into the record, so this motion will be limited to requesting admission of CIGFUR II and III Modeling Panel Direct Commissioner Questions Exhibit Number 1.

CHAIR MITCHELL: Okay. Hearing no objection to your motion, it's allowed.

MS. CRESS: Thank you, Chair Mitchell.

CHAIR MITCHELL: Uh-huh.

(CIGFUR II and III Modeling Panel Direct Commissioner Questions Exhibit Number 1 was admitted into evidence.)

CHAIR MITCHELL: Mr. Schauer?

MR. SCHAUER: Thank you, Chair Mitchell. We make a motion on behalf of the Tech Customers to move into evidence Tech Customers Modeling Panel Direct Cross Examination Exhibits 1 through 3.

MR. JIRAK: Chair Mitchell, as I stated at the end of the examination by counsel for Tech

Customers, the Companies do object to Exhibit 3, the demonstrative exhibit that was developed by Mr. Schauer which was not validated by the panel. To the extent he wants to enter that through his own witness through testimony in the future, we would not object to that. And to the extent the Commission finds it helpful, despite the fact that it wasn't supported in any way by the panel, certainly accept into evidence. But we do find it objectionable because if wasn't validated by the panel.

CHAIR MITCHELL: All right. Mr. Schauer, do you have a response?

MR. SCHAUER: Chair Mitchell, I do believe that the concerns Duke had with my exhibit were fully discussed on cross examination and the redirect questions. And to the extent the panel -- the Commissioners feel like it did not validate the exhibit, that decision is, you know, within the discretion of the Commission, in terms of how much weight it were to give the exhibit, but we would ask that it be included in the record to allow for a complete record of the examination of those witnesses.

CHAIR MITCHELL: All right. I'm gonna overrule the objection, though. I'm noting it, and we'll allow the examination Exhibits 1, 2, and 3 from the Tech Customers into the record.

MR. SCHAUER: Thank you.

(Tech Customers Modeling Panel Direct Cross Examination Exhibits 1 through 3 were admitted into evidence.)

CHAIR MITCHELL: Anyone else at this time?

MR. JOSEY: Chair Mitchell, I just would like to make one clarifying point on the reference I made during cross examination of the panel. The page number I was referencing in the 2022 solar procurement RFP was page 2 of Attachment A to Duke's petition for authorization of the 2022 solar procurement program.

CHAIR MITCHELL: All right. Thank you, Mr. Josey. So for clarity of the record, the Commission takes judicial notice of page 2 of Attachment A of Duke's filing made on --

MR. JOSEY: June 1, 2022, in Dockets Number E-2, Sub 1297 and Docket Number E-7, Sub 1268.

CHAIR MITCHELL: All right. Thank you, Mr. Josey. All right. Anything else before we begin?

(No response.)

CHAIR MITCHELL: Okay. Duke, call your next witnesses, please.

MS. FENTRESS: Good morning, Chair Mitchell, Duke calls the Grid Edge Panel to the stand.

CHAIR MITCHELL: All right. Good morning, gentlemen. If you would, raise right hands, left hand on the Bible.

Whereupon,

LON HUBER AND TIM DUFF,

having first been duly sworn, were examined and testified as follows:

CHAIR MITCHELL: All right. Thanks.

DIRECT EXAMINATION BY MS. FENTRESS:

Q. Mr. Huber, I will start with you. Would you please state your full name and business address for the record?

A. (Lon Huber) Gladly. Lon Huber. Business address is 526 South Church Street, Charlotte, North Carolina.

Q. By whom are you employed and in what capacity?

A. I'm employed by Duke Energy Corporation as senior vice president for pricing and customer solutions.

Q. And can you please briefly describe your role and responsibilities at Duke Energy?

A. Sure. I'm responsible for overseeing the development, analysis, and implementation of pricing and customer solutions for Duke. I'm also tasked with leading strategies, innovation, and development of new rate designs and product bundles in response to changing electric customer needs in all Duke Energy's electric jurisdictions.

Q. Thank you. Turning to Mr. Duff.

Mr. Duff, can you please state your full name and business address for the record?

A. (Tim Duff) My name is Timothy J. Duff, and my business address is 400 South Tryon Street, Charlotte, North Carolina 28202.

Q. By whom are you employed and in what capacity?

A. I'm employed by Duke Energy Business Services as the general manager of grid strategy enablement.

Q. Can you please briefly describe your role and responsibilities at Duke Energy?

A. Yeah, sure. I am responsible for developing strategies and policies related to the implementation of energy efficiency and other retail products and services that create customer and utility system value for Duke Energy's operating utilities, including DEC and DEP. I oversee the analytics functions associated with evaluating and tracking performance of Duke's integrated grid solution retail products and services.

Q. Thank you. Mr. Huber, did the panel cause to be prefiled in this docket direct testimony consisting of 49 pages?

A. (Lon Huber) Yes.

Q. Do you have any changes to your direct testimony at this time?

A. No, I do not.

Q. If I were to ask you the same questions today that appear in your prefiled direct testimony, would your answers be the same?

A. Yes.

Q. And, Mr. Huber, this panel's testimony did not include any confidential information, correct?

A. Correct.

MS. FENTRESS: Chair Mitchell, I would ask that the Grid Edge Panel's direct testimony be entered into the record as if given orally from the stand.

CHAIR MITCHELL: All right. Hearing no objection to the motion, the direct testimony of the of the Grid Edge Panel will be -- filed on August 19, 2022, consisting of 49 pages, will be copied into the record as if delivered orally from the stand.

(Whereupon, the prefiled direct testimony of Lon Huber and Tim Duff was copied into the record as if given orally from the stand.)

(Whereupon, per request for admittance in Volume 14, the prefiled summary of the Grid Edge Panel of Lon Huber and Tim Duff was also copied into the record as if given orally from the stand.)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 179

NORTH CAROLINA UTILITIES COMMISSION

In the Matter of: Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, 2022 Biennial Integrated Resource Plan And Carbon Plan	))))))	**DIRECT TESTIMONY OF LON HUBER AND TIM DUFF FOR DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC**

TABLE OF CONTENTS

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

A. My name is Lon Huber, and my business address is 526 South Church Street, Charlotte, North Carolina, 28202. I am the Senior Vice President for Pricing and Customer Solutions for Duke Energy Corporation ("Duke Energy").

Q. BEFORE INTRODUCING YOURSELF FURTHER, WOULD YOU PLEASE INTRODUCE THE PANEL?

A. Yes. I am appearing on behalf of Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP" and together with DEC, the "Companies" or "Duke Energy") together with Tim Duff on the "Grid Edge Panel." Mr. Duff will introduce himself.

Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

A. I received a Bachelor of Science Public Administration degree in Public Policy and Management from the University of Arizona in 2009 and a Master's degree in Business Administration from the University of Arizona, Eller College of Management in 2011.

Q. PLEASE DESCRIBE YOUR BUSINESS BACKGROUND AND EXPERIENCE.

A. I began my career in the utility industry in 2007 when I started working at a solar energy research institute housed within the University of Arizona. Starting in 2010, I served in policy and finance roles in the solar industry through December 2012. From April 2013 to March 2015, I served as a Special Projects

Advisor for the Residential Utility Consumer Office in Arizona. I was the electric sector lead for the office. From March 2015 to July 2018, I served as the Vice President of Consulting at Strategen Consulting. I also led Navigant's North American retail regulatory offering from July 2018 through November 2019, where I was responsible for providing expert witness testimony proceeding strategy, and pricing solutions for clients across the energy sector.

Q. WHAT ARE YOUR RESPONSIBILITIES IN YOUR CURRENT POSITION?

A. I transitioned to Duke Energy in November 2019. I am responsible for overseeing the development, analysis, and implementation of pricing and customer solutions. I am also tasked with leading strategies, innovation, and development of new rate designs and product bundles in response to changing electric customer needs in all of Duke Energy's electric jurisdictions.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?

A. Yes, I testified in DEC's and DEP's most recent general rate cases in Docket No. E-7, Sub 1214 and Docket No. E-2, Sub 1219, respectively, on issues related to rate design.

Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR DIRECT TESTIMONY?

A. No.

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

A. My name is Timothy J. Duff, and my business address is 400 S. Tryon Street, Charlotte, North Carolina, 28202. I am the General Manager, Grid Strategy Enablement for Duke Energy Business Services, LLC.

Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from Michigan State University with a Bachelor of Arts in Political Economics and a Bachelor of Arts in Business Administration and received a Master of Business Administration degree from the Stephen M. Ross School of Business at the University of Michigan.

Q. PLEASE DESCRIBE YOUR BUSINESS BACKGROUND AND EXPERIENCE.

A. I started my career with Ford Motor Company and worked in a variety of roles within the company's financial organization, including Operations Financial Analyst and Budget Rent-A-Car Account Controller. After five years at Ford Motor Company, I started working with Cinergy in 2001, providing business and financial support to plant operating staff. Eighteen months later I joined Cinergy's Rates Department, where I provided revenue requirement analytics and general rate support for the company's transfer of three generating plants. After my time in the Rates Department, I spent a brief time in the Environmental Strategy Department, and then I joined Cinergy's Regulatory and Legislative Strategy Department. After Cinergy merged with Duke Energy in 2006, I served

as Managing Director, Federal Regulatory Policy for four years. In this role, I was primarily responsible for developing and advocating Duke Energy's policy positions with the Federal Energy Regulatory Commission. In 2010, I was named General Manager, Energy Efficiency & Smart Grid Policy and Collaboration. Since 2010, I have held a number of positions related to analyzing and gaining regulatory approval of customer product and service offerings, including energy efficiency and demand response. I assumed my current position in April 2021.

Q. WHAT ARE YOUR RESPONSIBILITIES IN YOUR CURRENT POSITION?

A. I am responsible for the development of strategies and policies related to the implementation of energy efficiency and other retail products and services that create customer and utility system value. I also oversee the analytics functions associated with evaluating and tracking the performance of Duke Energy's Integrated Grid Solution retail products and services. My responsibilities cover all of Duke Energy's utility operating companies, including DEC and DEP.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?

A. Yes, I have testified many times on demand-side management ("DSM") and energy efficiency matters before this Commission. I testified in DEC's applications to update its DSM and energy efficiency cost recovery rider, Rider EE, in Docket No. E-7, Subs 941, 979, 1001, 1031, 1050, 1130, and 1164, as well as DEC's application for approval of its new portfolio of DSM and energy efficiency programs and new cost recovery mechanism in Docket No. E-7, Sub

1032. I also provided supplemental testimony in DEP's DSM and energy efficiency rider proceeding in Docket No. E-2, Sub 1145 and rebuttal testimony in Docket No. E-2, Sub 1174. In addition, I provided rebuttal testimony in DEP's Renewable Energy Portfolio Standard Compliance Report in Docket No. E-2, Sub 1109. In addition to testifying on behalf of DEC and DEP in North Carolina, I also testified in South Carolina in Docket No. 2013-298-E in support of DEC's application for approval of its new portfolio of DSM and energy efficiency programs and new cost recovery mechanism. Beyond providing testimony in the Carolinas, I also have testified in matters pertaining to DSM and energy efficiency before the state regulatory commissions in the other four states in which Duke Energy subsidiaries provide utility service: Florida, Indiana, Kentucky, and Ohio.

Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR DIRECT TESTIMONY?

A. No.

Q. MR. HUBER, PLEASE SUMMARIZE THE PANEL'S TESTIMONY.

A. The Companies are on the forefront of innovative Grid Edge activities and initiatives. Indeed, as explained in the Carbon Plan Executive Summary, the first pillar of energy transition and the Carbon Plan process is to "shrink the challenge" by reducing energy requirements and modifying load patterns through Grid Edge customer programs, allowing more tools to respond to fluctuating energy supply and demand.

For purposes of Carbon Plan modeling for energy transition, the Companies assumed an annual reduction of 1% of eligible load from energy efficiency programs. This assumption is built on the Companies' extensive, real-world experience in the Carolinas and detailed engagement in the Carolinas energy efficiency/DSM ("EE/DSM") Collaborative ("Collaborative") and is an aggressive but achievable target. Various intervenors assert that substantially higher amounts of energy efficiency and DSM and customer programs can be achieved but the Companies do not believe that such assumptions are reasonable or justified at this time under existing legal frameworks and market conditions, as will be explained in more detail below. Importantly, however, due to the iterative, biennial nature of the Carbon Plan process, it is not necessary to have the perfect projection of future EE/DSM. As is explained in more detail in Witness Kendal C. Bowman's testimony and the testimony of the Modeling and Near-Term Actions Panel (comprised of witnesses Glen Snider, Robert McMurry, Michael Quinto, and Matthew Kalemba), the Companies' focus in this proceeding is on the procurement and development activities needed in the near term, and the Companies believe that the near-term procurement and development activities are reasonable under all future scenarios. But the Carbon Plan also specifically contemplates the Companies' plan to update the underlying determination of the utility system benefits in the Companies' approved EE/DSM Cost Recovery Mechanism ("Mechanism"), which will occur in future proceedings. Therefore, in the coming years, the Commission will have opportunities to consider EE/DSM and customer programs in future

dockets and as such programs materialize, future Carbon Plans will be adjusted to reflect such changes and new programs.

Our testimony also offers further details concerning the mechanics of future EE/DSM changes, and further explains the Companies' assumptions regarding Net Energy Metering ("NEM"). We also describe the ways in which the Companies' proactive and cutting-edge rate design work will dovetail with future carbon reduction efforts. In addition, as further described below, the Companies are actively engaged with stakeholders to develop new customer renewable programs consistent with North Carolina Session Law 2021-165 ("HB 951"). Finally, our testimony explains that the Companies believe that an expedited regulatory process for innovative new pilot programs will be essential to enabling more innovation with respect to Grid Edge activities.

Q. WHAT ARE THE COMPANIES REQUESTING FROM THE COMMISSION THROUGH THIS TESTIMONY SUPPORTING THE CARBON PLAN?

A. To move forward with implementing energy transition as included in the Carbon Plan, the Companies request that the Commission approve the modeling assumption that 1% of eligible retail load is a reasonable and prudent assumption for annual energy efficiency that can be achieved. As the Companies explain in more detail throughout this testimony, they also request that, for purposes of this proceeding, the Commission acknowledge that the following changes will need to be made as enablers to achieving the 1% energy

efficiency target, either in the Companies' Mechanism or as separate program approvals, as appropriate:

- Updating the inputs underlying the determination of the utility system benefits,
- Moving to an "as-found" baseline, and
- Expanding the pool of low-income customers.

. The Companies are additionally working with a stakeholder group to develop proposed tariff-on-bill programs intended to benefit customers and the utility systems by removing a significant barrier to participation in energy efficiency programs. The tariff-on-bill programs are designed to lower the higher upfront costs of installation of energy efficient appliances for residential customers. Although those programs are not yet before the Commission, once approved, they will be important components of the Companies' energy transition and implementation of the Carbon Plan. To that end, the Companies request that the Commission acknowledge those programs as such during the tariff-on-bill proceedings.

The Companies also request that the Commission acknowledge that, in a future proceeding, it is reasonable for the Companies to propose new flexibility and rapid prototyping guidelines to ensure regulatory approval of new DSM/EE pilots and rate designs in a timely manner.

I. OVERVIEW OF GRID EDGE/CUSTOMER PROGRAMS

Q. MR. DUFF, CAN YOU DEFINE "GRID EDGE"?

A. Yes. Grid Edge refers to technologies, programs and investments that advance a decentralized, distributed, and two-way grid. The "edge" refers to the edge of the electricity network, or grid, where the Companies' electricity reaches customers' homes and businesses. Grid Edge programs include certain rate designs, voltage control efforts, and other customer programs, such as energy efficiency and DSM programs, as well as renewable energy programs and electric transportation programs. Now more than ever, customers can more directly manage and impact their use of electricity. The Companies' Grid Edge customer programs, therefore, are intended to provide customers with a variety of options to manage their electric use to both reduce monthly bills and provide value to the electric grid.

Q. PLEASE DISCUSS HOW THE COMPANIES' GRID EDGE PROGRAMS FACTOR INTO THE CARBON PLAN'S CORE OBJECTIVES AND ACHIEVING THE ENERGY TRANSITION AND CARBON REDUCTION GOALS.

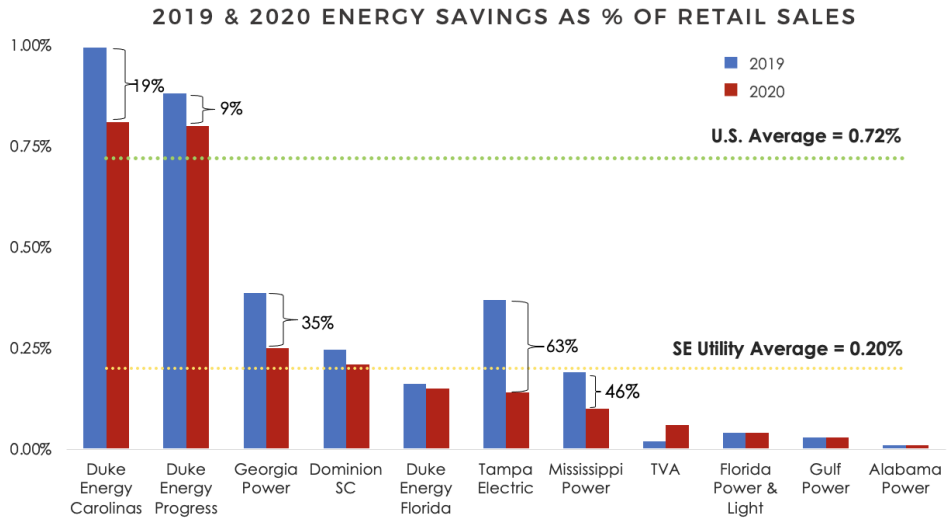
A. As described previously in this docket, the Companies used a three-pronged approach to planning for energy transition in the Carolinas: (1) shrink the challenge; (2) add carbon-free resources; and (3) ensure reliability. Our testimony today will focus on how the Companies will utilize Grid Edge customer programs to meet the first prong of "shrink the challenge," which is focused on reducing the amount of load the Companies must serve by enabling

investments and offers that allow for the reduction and management of load, such as energy efficiency, DSM, customer self-generation, voltage management, and other distributed energy resources ("DER").

Q. HOW HAVE THE COMPANIES SOUGHT AND INCORPORATED STAKEHOLDER INPUT IN THEIR EE/DSM TARGETS AND PROGRAM OFFERINGS?

A. The Companies have recognized considerable benefit in regularly working with the stakeholders through the Collaborative. Working with the Collaborative has been key to enabling the Companies to successfully offer customers robust suites of EE/DSM programs for well over a decade. As shown in Figure 1 below, published in the Southern Alliance for Clean Energy's February 2022 "Energy Efficiency in the Southeast, Fourth Annual Report," the Companies' portfolios continue to provide regional leading savings that are well above national average for utilities.

Figure 1. 2019 and 2020 Energy Savings as a Percentage of Retail Sales



The Collaborative, which was established shortly after the passage of Senate Bill 3 in 2007, is a long-standing advisory group of diverse, interested stakeholders from across North Carolina and South Carolina. It comprises members from several environmental advocacy groups, as well as the North Carolina Public Staff, the South Carolina Office of Regulatory Staff ("ORS"), other governmental agencies, academics, and members of trade organizations. The Collaborative serves as an integral source for input into the Companies' EE/DSM portfolio and allows this diverse group of stakeholders to share potential new programs and programmatic enhancements offered by other utilities in different regions of the country. 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 North Carolina Utilities Commission and the Public Service Commission of South Carolina; and emerging opportunities to achieve cost-effective energy savings."

The effectiveness of the Collaborative has also been recently recognized in the Southern Alliance for Clean Energy's ("SACE") Energy Efficiency in the Southeast: Third Annual Report ("SACE Report"), which stated that "[m]ore than any other Southeast utility, Duke's utilities in the Carolinas are perpetually developing new programs and ways to enhance program delivery – with considerable help from Collaborative stakeholders like SACE."[1]

Q. PLEASE DISCUSS WHY THE COMPANIES BELIEVE THAT THE ENERGY EFFICIENCY ASSUMPTION OF 1% OF ELIGIBLE RETAIL SALES IS AN AGGRESSIVE BUT ACHIEVABLE ASSUMPTION.

A. In developing their EE/DSM Forecast for the Carbon Plan, the Companies sought to incorporate an aggressive yet attainable modeling assumption about the amount of load reduction that could be achieved to meet the carbon reduction targets required by N.C. Gen. Stat. § 62-110.9. The Companies' modeling assumed a floor, or minimum amount of annual utility program energy efficiency savings, of 1% of eligible retail load. The Companies believe that, after considering the historical level of achievements, the forecast of utility energy efficiency incorporated into the Companies' most recently approved

[1] SACE Report at 9 (Jan. 26, 2021), *available at* 22Energy-Efficiency-in-the-Southeast22-third-annual-report-2021.pdf (cleanenergy.org).

Integrated Resource Plan ("IRP"), the performance targets built into the Companies' recently modified cost recovery Mechanism, and the potential impact of some of the identified enablers included in the Carbon Plan, the assumption of 1% of eligible load is appropriately aggressive yet achievable.

In challenging the Companies' assumptions, some intervenors have advocated for including efficiency levels based on load that is not currently eligible for EE/DSM programs. The Companies believe that basing the energy efficiency impacts on the Companies' loads that are eligible to participate in energy efficiency programs is a reasonable methodology to forecast the amount of energy savings that can be achieved through the Companies' energy efficiency programs. Including energy savings associated with load that cannot be reduced through participation in one of the Companies' energy efficiency programs would inflate the amount of efficiency needed from eligible load and would likely significantly overstate the amount of energy efficiency included in the Carbon Plan from utility programs.

The Companies' most recently approved IRPs included an amount of utility energy efficiency that was based on a Market Potential Study, performed by a third-party expert, that sought to view energy efficiency investments through the lens of what is technically feasible, what makes economic sense, and what is likely achievable given market barriers. The Companies then worked to identify several potential enablers to overcome economic and market barriers that, when considered along with new EE/DSM Programs, would

1 potentially allow them to achieve more energy efficiency reduction than what
2 was included in the IRP.
3 Finally, the Companies' Mechanism, which the Commission approved
4 in October 2020 in Docket Nos. E-2, Sub 931 and E-7, Sub 1032, and which
5 went into effect January 2022, directly reflects the aggressive 1% energy
6 efficiency target through its incentive and penalty structure. The Mechanism
7 establishes a "further incentive to motivate the Company to aggressively pursue
8 savings from cost-effective EE and DSM Programs."[2] If DEC or DEP achieves
9 annual energy savings of 1% of the prior year's system retail electricity sales,
10 in any year during the four-year 2022-2025 period, that Company will receive
11 an added incentive of $500,000 for that year. During that same period, if that
12 Company fails to achieve annual energy savings of 0.5% of retail sales, net of
13 sales associated with customers opting out of the Company's energy efficiency
14 programs, that Company will reduce its energy efficiency revenue requirement
15 by $500,000. In the Carbon Plan, the Companies are essentially projecting to
16 double the amount of what was an agreed upon performance floor year in and
17 year out to help achieve energy transition, yet the $500,000 bonus incentive tied
18 to achievement of the 1% of total retail sales certainly will continue to motivate
19 the Companies to try to exceed the level of energy efficiency incorporated in
20 the Carbon Plan on a year in and year out basis.

[2] *Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms*, Docket Nos. E-2, Sub 931 and E-7, Sub 1032, issued Oct. 20, 2020, at Attachment A, p. 21 of 22.

Q. WHAT ARE THE CHALLENGES TO ACHIEVING THE ENERGY EFFICIENCY GOAL AS THE COMPANIES APPROACH THE INTERIM TARGET IN 2030 AND BEYOND?

A. The Companies must overcome a number of challenges to achieve the annual amount of energy efficiency reduction included in the Carbon Plan. To fully appreciate these challenges, it is important to first understand that, although the Companies may offer a variety of innovative and creative programs to encourage their customers to become more energy efficient, the success of these programs and magnitude of the resulting energy savings ultimately depends on customers electing to participate. While advancement of efficiency standards and market transformation around efficient technologies continue to pose challenges to cost effectively offering programs, over the past few years, consistent with the industry in general, the Companies have seen several impediments to customers participating in the Companies' programs. These have included customers not wanting to have contact with energy auditors and equipment installers due to surges in COVID, rising prices due to levels of inflation not seen for over 30 years, supply chain issues limiting availability of equipment, and workforce shortages in qualified staff to perform energy efficiency upgrades. The Companies' program management coordinates with the Collaborative to continue to look for ways to overcome these challenges to customer participation to achieve as much cost-effective energy efficiency as possible.

Another challenge, once new technologies and innovative approaches to program delivery for inclusion in pilot programs have been identified and supported by stakeholders, is obtaining the necessary, timely regulatory approvals from the Commission. Later in this testimony, Mr. Huber will describe a potential forthcoming proposal to expedite regulatory approvals to ensure the Companies keep pace with changes in technology and offer new pilot programs in a timely manner.

Q. PLEASE DESCRIBE THE COMPANIES' APPROVED ELECTRIC VEHICLE PILOTS AND WORK ON NEW EV PILOTS.

A. The Companies continue to work with industry groups to understand the expected pace of Electric Vehicle ("EV") adoption in their service territories. As of May 31, 2022, approximately 5,800 new EVs were registered year-to-date in the Companies' North Carolina and South Carolina service territories. This total outpaces the approximately 4,000 registrations for the same period in 2021, representing an increase of 45% year over year. In North Carolina specifically, the EV market has continued to grow. As of March 31, 2022, there were more than 36,000 EVs operating in the Companies' North Carolina service territories compared to approximately 25,000 EVs in May 2021. Given the expected continued acceleration in EV adoption, particularly with Governor Cooper's efforts and goals in North Carolina, the Companies are developing programs to both encourage EV adoption and manage the impact of the new load associated with EVs. With respect to ensuring the capability to support EV adoption and transformation, the Companies have received approval of: (1)

Phase I of the Companies' EV Pilots allowing them to deploy public charging infrastructure, (2) a Make Ready Credit Program to reduce the upfront cost associated with electric work required for customers to install chargers, and (3) an EV Subscription Pilot that will allow the Companies to manage a customer's EV charging in exchange for fixed monthly price for unlimited charging. In addition to these programs, the Companies have filed for approval of an Electric Vehicle Supply Equipment ("EVSE") Program designed to encourage EV adoption by allowing participating customers to pay a monthly tariffed fee for EV Charging equipment, much like the way customers pay for outdoor lighting infrastructure. The Companies also continue to explore the development of dynamic rates designed to lessen the system impact of commercial and fleet vehicle charging. DEC has also recently filed for approval of its Vehicle-To-Grid pilot program, an innovative demand response program leveraging EV batteries to effectively manage utility system peaks.[3]

II. RESPONSE TO INTERVENOR COMMENTS ON THE ENERGY EFFICIENCY TARGET

Q. MR. DUFF, PLEASE RESPOND TO INTERVENOR CRITICISM REGARDING THE MODELING ASSUMPTION OF ENERGY EFFICIENCY.

A. The Companies prioritized EE/DSM savings and modeled the aggressive floor of 1% of eligible annual load reduction associated with energy efficiency programs prior to evaluating any supply-side resources necessary to achieve the

[3] Application for Approval of Vehicle-To-Grid Pilot Program, Docket No. E-7, Sub 1275, filed Aug. 16, 2022.

70% carbon emission reductions by 2030. The North Carolina Attorney General's Office ("AGO") submitted a recommendation from Strategen that the Companies should have instead modeled energy efficiency as a selectable resource; however, as discussed in the Modeling and Near-Term Actions Panel's testimony, the Companies believe modeling a resource that is almost entirely dependent on customer preferences and participation using an optimization model is problematic, because the model does not account for customer adoption constraints. Allowing the models to select additional energy efficiency savings purely on economic grounds without accounting for realistic customer participation levels may result in unattainable levels of energy efficiency savings, undermining the validity of the resource plan. Any overstatement of attainable energy efficiency savings results in an understatement of net load that must be served by supply-side resources. This understatement of load will lead the optimization model to under build new supply-side resources or retire existing resources prematurely, thereby compromising system reliability.

Additionally, the Companies disagree with the AGO's and Strategen's criticism regarding the Companies' methodology of including "roll off" of utility energy efficiency ("Utility Program EE" or "UEE") in its load forecast relative to "naturally occurring" energy efficiency. Strategen states because usage per customer is not declining over time, the Companies' methodology for translating utility program energy efficiency roll-off into naturally occurring energy efficiency in the load forecast is inaccurate; however, this criticism

ignores that, during the same time period, load impacts of EV adoption and beneficial electrification are included in the load forecast, which can more than mask the EE roll-off being reflected in usage per customer. As illustrated in the Figures below, absent the forecasted increase in usage per customer associated with EV adoption, the impacts of customer energy efficiency are forecasted to significantly decrease the usage per customer as shown below.

Figure 2. DEC Retail UPC – With and Without EV Impacts

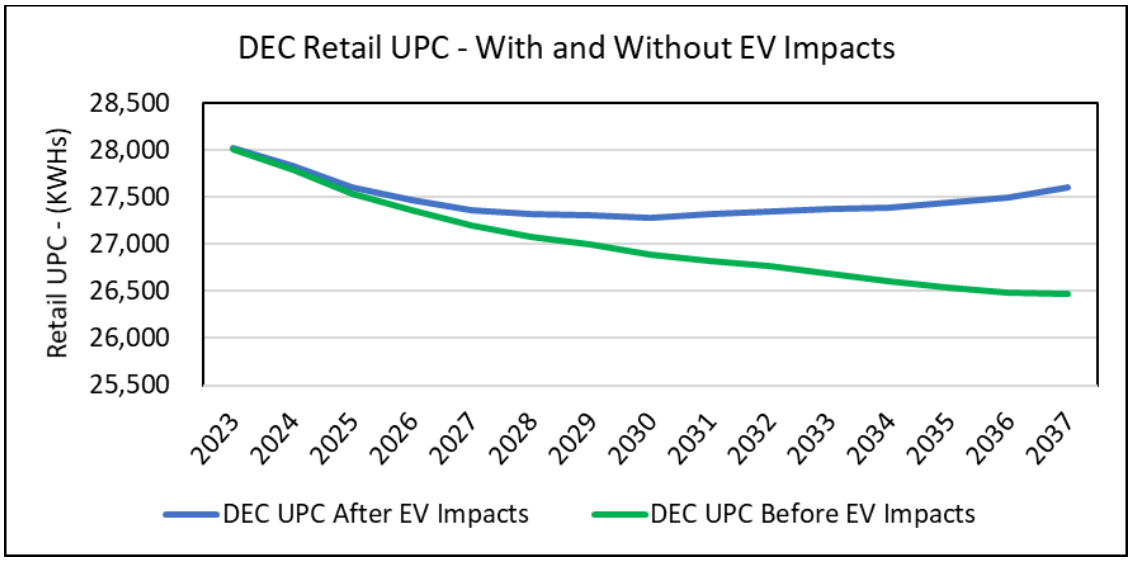
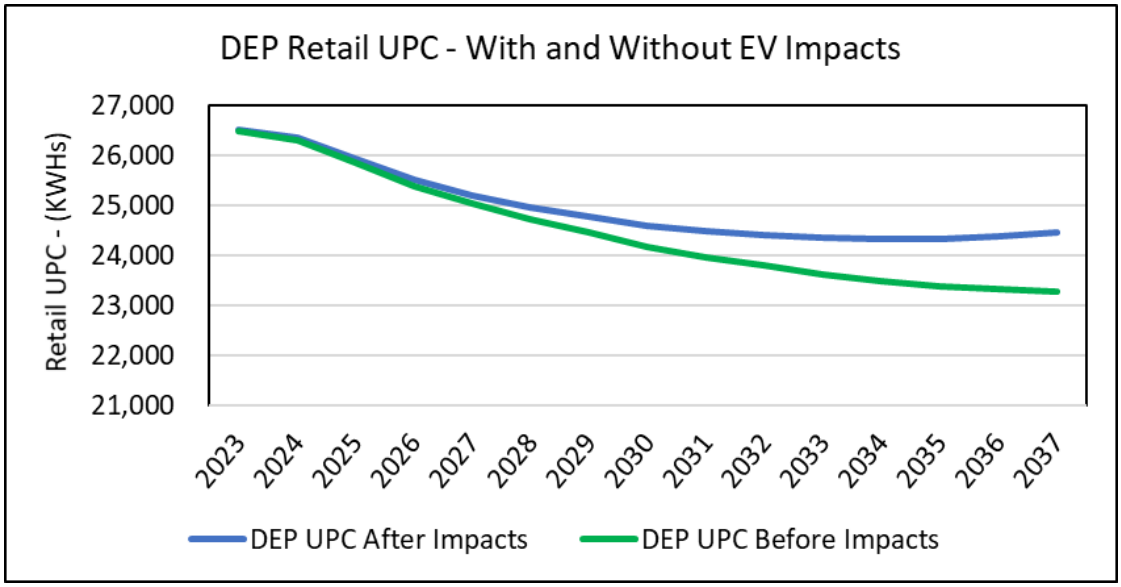


Figure 3. DEP Retail UPC – With and Without EV Impacts

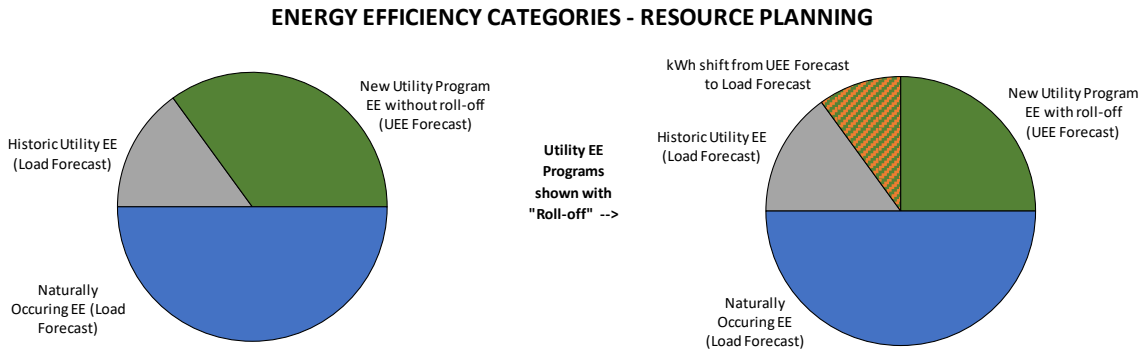


Q. EXPLAIN HOW THE CARBON PLAN REFLECTS ENERGY EFFICIENCY SAVINGS, INCLUDING WHICH CATEGORIES OF ENERGY EFFICIENCY SAVINGS ARE ACCOUNTED FOR AND WHERE THEIR IMPACTS ARE REPRESENTED IN THE MODELING INPUTS.

A. Several categories of energy efficiency savings are accounted for in the forecast modeling used in the resource planning process. Naturally occurring energy efficiency is driven by appliance or building codes and standards as well as efficiency improvements implemented by customers independent of utility-sponsored energy efficiency programs. As shown in the parentheses in the data labels in the figures below, these savings are reflected in the load forecast. Historical impacts of prior utility sponsored programs are also represented in the load forecast. The energy savings impacts resulting from new customer participation in utility-sponsored energy efficiency programs are shown in the

UEE forecast. The UEE forecast represents the incremental savings achieved each year, as well as the cumulative impacts of prior UEE savings resulting from measures with a multi-year life. Once the measure life of previously implemented measures expires, the associated energy savings are removed from the UEE forecast and become part of the cumulative embedded efficiency savings in the load forecast. This shift of the savings from the UEE forecast to the Load Forecast is typically referred to as "roll-off." The pie charts in Figure 4, below, illustrate this method of accounting for energy efficiency savings. The total amount of energy savings from energy efficiency remains the same and continues to reduce total load but are accounted for in a different part of the forecast modeling inputs used in resource planning. When comparing UEE savings levels in differing plans, the location of the "roll off" savings must be consistently applied. A real-world example of the roll-off depicted in the pie charts is all the Light Emitting Diode ("LED") lights installed by customers in 2014 reaching the end of their assumed 10-year operating lives in 2024. In the modeling for 2025, the kilowatt hours associated with the LED lights installed in 2014 will "roll off" and no longer be reflected in the UEE forecast for 2025, but instead be reflected in the historic energy efficiency embedded in the load forecast.

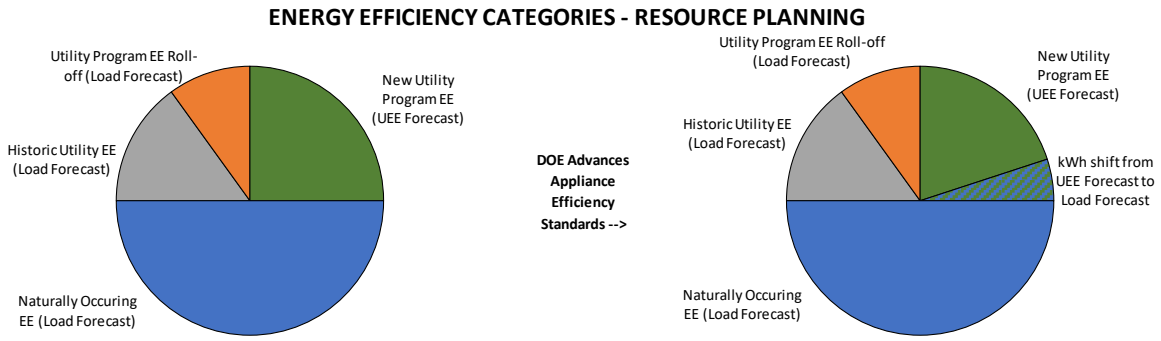
Figure 4: Energy Efficiency Categories – Utility EE Program Roll-Off - Resource Planning



Another important consideration when critiquing the amount of savings shown in the UEE forecast is to understand the impacts of changes in codes and standards over time. Figure 5 below illustrates the impact of increased efficiency standards on the savings available to utility-sponsored programs. In general, utility-sponsored programs are only credited with savings when they drive adoption of efficiency measures that *exceed* codes and standards *at the time* the measure is installed. As codes and standards evolve over time, the energy saving potential attributed to utility-sponsored programs is reduced. The energy saving potential does not go away, but it is now represented as naturally occurring energy efficiency in the load forecast. A real-world example of this change will occur in the next update to the Carbon Plan modeling to account for the 2022 decision of the U.S. Department of Energy to advance the Heating Ventilation Air Conditioning ("HVAC") standard from SEER 14 to SEER 15 on January 1, 2023. As an example, a customer may replace a SEER 13 heat pump with a SEER 16 heat pump through participation in a utility-sponsored

incentive program. In 2023, only the savings of moving from SEER 15 to SEER 16 will be credited to the utility program and represented in the UEE forecast while the energy savings of moving from SEER 13 to SEER 15 is represented in the load forecast as naturally occurring efficiency.

Figure 5: Energy Efficiency Categories – Efficiency Standard Advances - Resource Planning



Q. HAS ANY PARTY OPPOSED THE TARGET OR SUGGESTED MORE AGGRESSIVE TARGETS?

A. Yes. A number of parties have suggested more aggressive energy efficiency levels should have been assumed in the Carbon Plan. NCSEA et al. proposed an annual incremental reduction amount of 1.5% of retail sales and the Tech Customers proposed a 7.7% cumulative reduction by 2030. Both relied in large part on a finding presented in the 2020 American Council on for an Energy Efficient Economy ("ACEEE") Report, "How Energy Efficiency Can Help Rebuild North Carolina's Economy: Analysis of Energy Cost and Greenhouse Gas Impacts" ("ACEEE Report"). In addition to the ACEEE Report, the ACEEE also released a Scorecard in 2020, which the Tech Customers and

NCSEA et al. also cite to as evidence that the Companies can achieve more aggressive energy efficiency targets.[4]

Q. HAVE YOU REVIEWED THE ACEEE REPORT AND CAN YOU RESPOND TO ITS RECOMMENDATIONS?

A. Yes. I have reviewed the ACEEE Report. In fact, the Companies contributed to the ACEEE Report's preparation. The Tech Customers and NCSEA, et al. seem to have ignored several relevant factors from the ACEEE Report in making their recommendations to the Commission. First, because the 11.1% savings amount projected in the Report is at the state level, it includes actions beyond the Companies' control, such as actions undertaken by customers not served by the Companies – municipal and cooperative customers and customers of Dominion Energy North Carolina. Additionally, the ACEEE Report also assumes multiple legislative and policy changes occur that are not assured, such as the establishment of commercial property-assessed clean energy ("CPACE"). CPACE is a financing structure in which building owners borrow money for energy efficiency that enable higher savings. Finally, another flaw in the Tech Customers' and NCSEA, et al.'s reliance on the projected energy savings level from the Report is that the projected savings level is from a 2020 baseline. A 2020 baseline would not reflect the continued market transformation of the lighting market to non-specialty LED lighting resulting from LEDs' increased accessibility and customer acceptance. In fact, the Commission has recognized

[4] ACEEE Report is available at u2007.pdf (aceee.org). ACEEE 2020 Scorecard is available at The 2020 State Energy Efficiency Scorecard | ACEEE.

the impact of this transformation on the Companies' energy savings in their recent EE/DSM annual rider proceedings. There, the Public Staff has testified that the market transformation or routine adoption of energy efficient LED lighting had already occurred, and that LED lighting will likely be considered the baseline standard for general service bulb technologies by January 2020. As a result, savings from any energy efficiency program using LEDs are reduced, when compared to energy efficiency programs using earlier, energy efficient A-line lighting. An additional uncertainty about the ACEEE's cumulative energy reduction potential is whether their stated figures include the impact of utility energy efficiency program roll-off.

NCSEA, et al. and Tech Customers also fail to mention that the actual recommendation is an annual energy efficiency requirement of 10% cumulative electric energy savings from investor-owned utilities by 2030, below a baseline of each utility's total gross electric sales in 2020 with required annual savings ramping up to 1.2% of sales per year by 2032 continuing through 2040. This actual recommendation is far more in line with the Companies' projected energy efficiency savings in the Carbon Plan.

As shown in Table 1 below, the Companies' assumption of a minimum of 1% reduction in eligible sales from energy efficiency will deliver approximately a 5% cumulative reduction in total retail load by 2030 over a seven-year period. This is significant for a time period when many of the historic savings associated with the non-specialty lighting measures, as I

discussed earlier, are rolling-off and shifting to being reflected as historic energy efficiency savings in the load forecast rather than UEE.

Table 1: Joint Duke Energy Carolinas and Duke Energy Progress Cumulative Energy Efficiency Savings with Roll-off Scenarios

TABLE 1: Combined Duke Energy Carolinas and Progress Cumulative Energy Efficiency Savings with Roll-off Scenarios

Energy Efficiency Scenario	2025			2030			2040		
	Cumulative GWh Savings	Cumulative % reduction vs. 2022 total retail sales	Cumulative % reduction vs. 2022 eligible retail sales	Cumulative GWh Savings	Cumulative % reduction vs. 2022 total retail sales	Cumulative % reduction vs. 2022 eligible retail sales	Cumulative GWh Savings	Cumulative % reduction vs. 2022 total retail sales	Cumulative % reduction vs. 2022 eligible retail sales
IRP (Base Case)	3,186	2.6%	3.8%	5,738	4.6%	6.8%	3,633	2.9%	4.3%
1% Eligible Sales	3,215	2.6%	3.8%	6,186	5.0%	7.4%	5,995	4.8%	7.1%
1% Total Sales	3,320	2.7%	4.0%	7,314	5.9%	8.7%	10,563	8.5%	12.6%
1.5% Total Sales	3,824	3.1%	4.5%	11,033	8.8%	13.1%	19,959	16.0%	23.7%
2% Total Sales	4,327	3.5%	5.1%	14,752	11.8%	17.5%	29,355	23.5%	34.9%

Q. HAVE YOU REVIEWED THE ACEEE 2020 UTILITY SCORECARD REFERENCED BY VARIOUS INTERVENORS TO SHOW THAT OTHER UTILITIES ARE ACHIEVING HIGHER REDUCTIONS THAN 1% OF RETAIL SALES?

A. The Companies are familiar with the ACEEE Utility energy efficiency scorecard, but do not agree that energy efficiency as a percentage of the retail sales of other utilities is an accurate or illustrative comparison regarding the relative success of utility energy efficiency programs or that it compels the Companies to increase the amount of energy efficiency to forecast the Carbon Plan. The reality is that electric usage and electric rates are very different in different states, and both variables play a significant role in the adoption and relative impact of energy efficiency programs. In fact, in a March 22, 2022, Carbon Plan Stakeholder Meeting, the Companies shared the following table containing information obtained from Saveonenergy.com to demonstrate how

1 the inaccuracy of comparing other state achievement levels to the Companies'
2 achievement levels.

3 **Table 2: State-Level Efficiency Savings, Average Usages and Residential Rates**

Putting 1% of Retail Sales in Context

State	Average Residential Usage (KWH)	Average Residential Rate ($/KWH)	1% EE of Annual Retail Sales per Customer (KWH)	Equivalent Annual EE Savings Percentage for Duke Custome
Arkansas	12,720	0.126	127	0.98%
Massachusetts	7,224	0.243	72	1.73%
Oregon	10,992	0.112	110	1.14%
Colorado	8,532	0.135	85	1.46%
Iowa	10,380	0.116	104	1.20%
Vermont	6,804	0.196	68	1.84%
Illinois	8,652	0.135	87	1.44%
Duke Energy (NC & SC)	12,494	0.110	125	1.00%
California	6,864	0.232	69	1.82%
Rhode Island	7,128	0.251	71	1.75%
Minnesota	9,300	0.128	93	1.34%

Utility System Wide Energy Efficiency | 9

4

5 In addition to customer usage and electric rates, differences in the efficiency
6 standards and building codes, as well as historic program participation and
7 regulatory rules regarding counting energy efficiency savings can play
8 significant roles in annual reduction in retail sales attributed to energy
9 efficiency programs.

10 **Q. HAS THE PUBLIC STAFF EXPRESSED CONCERN ABOUT**
11 **INCREASING THE ENERGY EFFICIENCY TARGET FROM THE**
12 **LEVEL PRESENTED IN PRIOR IRPS?**

13 A. Yes. The Public Staff's comments describe the target as a "formidable task,"
14 particularly after 2030. The Public Staff specifically notes that the Companies'

forecast assumes all technologies currently included in the portfolio today will be eligible technologies going forward and that the Companies do not account for market transformation. The Evaluation, Measurement, and Verification ("EM&V") process determines "market transformation" based on the degree of saturation of energy saving technologies, after which those measures are no longer eligible for inclusion in utility-sponsored efficiency programs.

Q. HOW DO YOU RESPOND TO THE PUBLIC STAFF'S CONCERNS?

A. First, the Companies acknowledge that certain technologies will experience market transformation. If market transformation occurs around certain measures, as it did around non-specialty lighting options, the EM&V of the programs would be the source of determination, and the reduction in load from that time forward would be included in updated resource planning filings including the Carbon Plans as naturally occurring energy efficiency in the load forecast.

The Companies agree that the assumption of a minimum of 1% of eligible sales reduction through the Companies' energy efficiency programs is aggressive. In fact, that was how the Companies described the assumption in the Carbon Plan filing. The Companies felt it was important to include an increase in energy efficiency achievement in the Carbon Plan filing compared to its base case (i.e., the amount of energy efficiency approved in the IRP) while also identifying enablers that could potentially advance the increased energy efficiency achievements. The fact that the Companies identified potential enablers of the increase should help to ease the Public Staff's concerns, as well

as the fact that the largest portion of the increase in the assumed efficiency occurs after 2030. This ramping up of savings is important because it gives the Companies time to implement identified potential enablers to achieve the increase and allows the Companies to inform future Carbon Plan updates, if potential enablers are not implemented, technology advances, or market conditions change.

Q. THE PUBLIC STAFF AND APPALACHIAN VOICES ARE ALSO CONCERNED THAT THE ANNUAL SAVINGS RELY TOO HEAVILY ON BEHAVIORAL DEMAND IMPACTS. DO YOU AGREE?

A. No. The Companies' residential behavioral energy efficiency programs have a proven track record of educating, engaging, and empowering customers to become more energy efficient and delivering cost effective energy savings. To diminish their value would be a mistake. Because the Companies continually look for ways to enhance the behavioral programs and leverage the availability of interval meter data, they believe that it is appropriate to assume continued annual savings in the Carbon Plan forecast. In fact, the assumption of only maintaining, rather than increasing, the annual savings may understate the savings, as the most recent EM&V results for the program received earlier this year found the program's annual energy saving per participant have increased versus the savings underlying the behavioral-based savings included in the Carbon Plan. Additionally, the DSM Forecast included in Carbon Plan did not increase that amount of behavioral-based program savings beyond what was included in the Companies' approved 2020 IRPs. To the extent the additional

energy savings were needed to meet the 1% of eligible load target, the equipment-based, as opposed to behavioral-based, measures were increased proportionally (based on residential and non-residential load growth) to reach the targeted energy savings levels in future years.

Q. MR. DUFF, IN YOUR OPINION, DOES THE ENERGY EFFICIENCY TARGET PROPERLY BALANCE THE NEED TO SHRINK THE CHALLENGE AND THE EXECUTION RISK OF ACHIEVING THE ASSUMED REDUCTION?

A. Yes. In my opinion, the Companies' adoption of an annual energy efficiency forecast of 1% reduction of eligible load strikes the appropriate balance between reaching beyond the reasonable assumptions in the approved 2020 IRP to ensure the Companies are aggressively pursuing energy efficiency and demand-side measures to benefit customers and assuming an unattainable target. In the Carbon Plan or other resource plans, it is risky to assume an unachievable level of energy savings which could result in not planning for additional supply-side resources. It is additionally important to emphasize that the gap between the IRP and the Carbon Plan assumption is smaller in the near term, meaning less additional energy efficiency savings will be required above the Company's existing plan and a lower risk to achieve the necessary additional savings. As the Companies work to implement the identified enablers and new programs, they may update and refine the energy efficiency forecast in the Carbon Plan biennial updates to continue to ensure the appropriate balance is maintained and any needed changes to planned supply-side resource needs can be effectuated.

III. REGULATORY APPROVALS THAT WILL ENABLE THE COMPANIES TO ACHIEVE THE ENERGY EFFICIENCY TARGET

Q. PLEASE PROVIDE MORE DETAIL ON THE ENABLERS DESCRIBED AS NECESSARY TO ACHIEVING AGGRESSIVE ENERGY EFFICIENCY TARGETS.

A. As previously discussed, when developing the long-term forecast with a minimum of 1% of eligible load through the Companies' EE/DSM programs, the Companies worked to identify several potential enablers that would be necessary to achieve the long-term energy efficiency savings included in the Carbon Plan. Many intervenors, including the Public Staff, recommended that the enablers identified in the Carbon Plan Appendix G should be approved in a separate docket or the Mechanism. The Companies do not disagree, but because of the complexity, scope, and goals of energy transition as achieved through the Carbon Plan, the Companies believe there is value in the Commission acknowledging and affirming in its Order in this proceeding that these identified enablers should be adopted in the appropriate forums so that the Companies' work can begin.

The following actions are high level ideas that would require regulatory approvals and would allow for additional energy efficiency savings versus the existing business as usual approach.

- **Expanded Low-Income Programs** - The Companies will seek Commission approval for additional pilots and programs targeting income qualified customers, as well as the adoption of other recommendations of the Low-Income Affordability Collaborative ("LIAC"), which filed its Final Report with

the Commission on August 12, 2022. In addition to the proposals and recommendations identified in the LIAC Report, the Companies identified the potential expansion of the definition of income qualified to include customers with income up to 300% of the federal poverty guideline to expand the pool of eligible customers that may participate in low-income energy efficiency programs. The Companies recognizes that in many cases programs targeting low-income customers are not cost effective, and they will fully vet any new programs or modifications to existing programs with the EE/DSM Collaborative before filing for Commission approval.

- **On-Tariff and Other Financing Options** - The Companies have been working with a broad stakeholder group for a number of years and will seek approval of a cost recovery mechanism associated with the proposed programs that will enable utility accounts to effectively finance efficiency upgrades in the form of a charge on the monthly bill which will greatly reduce the upfront financial barriers to energy efficiency investments. Any new energy efficiency incentives that would be utilized in coordination with the Commission-approved cost recovery of the On-Tariff program will require Commission approval.
- **Cost-Effectiveness Test Input Modifications** - To ensure that EE/DSM resources are appropriately valued in the context of other resources considered in the Carbon Plan, the Companies will work with the Collaborative and seek Commission approval to update the inputs underlying the determination of the utility system benefits in the Companies' approved Mechanism. By making these necessary modifications, the Companies believe that it will be able to

potentially increase incentive levels and participation while maintaining cost effectiveness in existing programs and potentially add new programs and measures that would not have been cost effective with the prior inputs.

- **<u>"As Found" Baseline and Adoption and Code and Standard Attribution</u>** - Moving to an "as found" baseline increases savings associated with a customer's energy efficiency investment, thereby increasing the potential incentive amount that can be provided to customers. The Companies believe it is appropriate, when considering energy savings in the context of carbon reduction, to recognize that the amount of carbon being reduced is associated with the old usage from the old equipment compared to the new usage from the new equipment. Therefore, the Companies believe that there is a strong case to be made that the use of an "as found" baseline is appropriate when a program promotes early replacement rather than replacement on failure. Just as the case with any new measures or program being added to program, the Companies see measures associated with "as found" energy savings as needed for this transition.

Q. PLEASE FURTHER DESCRIBE THE COMPANIES' REQUEST FOR THE COMMISSION'S APPROVAL OF THEIR PLAN TO UPDATE THE INPUTS UNDERLYING THE DETERMINATION OF THE UTILITY SYSTEM BENEFITS IN THE MECHANISM.

A. The Companies propose to modernize the current framework for appropriately valuing demand-side DERs so that energy efficiency and other demand-side customer programs are evaluated on par with zero-carbon supply-side

alternatives. The Companies intend to develop a formal proposal to modify the Companies' approved Mechanism and share it with the Collaborative and other interested stakeholders prior to filing with the Commission. The modifications will detail the source and methodology to be used for the periodic updates of inputs utilized for justifying demand-side utility programs which will be based on specific costs associated with the selected marginal carbon-free and storage resources in the approved Carbon Plan added to the system energy and capacity, inclusive of transmission and other required infrastructure. More specifically, the modification will likely specify that the per kilowatt ("kW") avoided capacity benefits and per kilowatt-hour ("kWh") avoided energy benefits used will be derived from levelized average marginal supply-side resource costs utilized in the most recently approved Carbon Plan production cost model. The calculation of the underlying avoided energy value to be used to derive the specific avoided energy benefits will be based on the projected demand-side resource's hourly shape. This proposed enabler appears to be well-received as both NCSEA, et al. and the AGO Strategen Report support these updates as being appropriate to more accurately reflect the utility system value of savings from EE/DSM Programs. Regarding the proposal to update the inputs used in determining the utility system benefits for EE/DSM programs, the Public Staff asserts that any changes would require a thorough review of the Mechanism and Commission approval.

Q. DO YOU AGREE WITH THE PUBLIC STAFF THAT THE UNDERLYING DETERMINATION THAT THE UTILITY SYSTEM BENEFITS USED SHOULD BE APPROVED IN THE MECHANISM?

A. Yes. The Companies identified and described the need to update the inputs into the determination of the utility system benefits used in the evaluation of programs as being necessary to ensure that EE/DSM are appropriately valued in the context of other clean supply-side resources. It also identified clearly in Table G5 of the Carbon Plan that they will seek Commission approval of such modifications which would need to occur to the Mechanisms.

Q. PLEASE EXPLAIN HOW USING AN "AS-FOUND" BASELINE FOR ENERGY EFFICIENCY MEASURES WILL ALLOW THE COMPANIES TO PROVIDE HIGHER INCENTIVES AND MORE ACCURATELY ACCOUNT FOR SAVINGS.

A. The Companies believe that the recognition of "as found" baselines for certain energy efficiency measures is appropriate because the early replacement of inefficient equipment creates savings compared to the equipment being replaced, not the efficiency standard in place at the time of replacement. Utilizing the efficiency standard as the baseline savings continues to make sense for replacement on failure beyond repair. The Companies believe that understanding the amount and duration of the "as found" savings associated with early replacement should be determined at the time the Companies seek approval of measures with "as found savings." By recognizing the higher level of savings that are being achieved by the early replacement, the Companies will

be able to provide the higher incentives necessary to motivate customers to replace inefficient equipment prior to catastrophic failure.

Q. THE AGO STRATEGEN REPORT CLAIMS THAT USING AN "AS-FOUND" APPROACH WILL NOT ACTUALLY INCREASE THE EFFICIENCY OF MEASURES BEING INSTALLED. HOW DO YOU RESPOND?

A. Strategen's claim that utilizing an "as-found" approach will not actually increase efficiency of measures being installed seems to be uninformed as "as found" baselines are utilized by many different utilities associated with early replacement measures. If a utility incentive effectively motivates a customer to make the large capital investment necessary to replace an aging but repairable inefficient piece of equipment, then clearly more energy savings are occurring than if the customer were to repair and continue using the inefficient equipment. As discussed earlier, particularly in the context of carbon, it is hard to understand how Strategen does not believe that the carbon reduction realized by the Companies is not equivalent to the reduction in energy from the equipment being used to what equipment replaced it. In contrast, the AGO supports the Companies' work to develop an on-tariff financing program similar to Pay as You Save ("PAYS"), which requires the recognition of "as found" basis savings to justify the accounts monthly on-tariff charge.

Q. DO YOU AGREE WITH THE PUBLIC STAFF THAT CONSIDERATION FOR UTILIZING "AS FOUND" AS A BASELINE SHOULD OCCUR IN THE MECHANISM PROCEEDING?

A. As previously discussed, the Companies will vet the proposal with the Collaborative and file for Commission approval for any programs or measures added to existing programs that include an "as found" baseline for determining savings. The Companies believe that these programmatic filings and approvals should serve as the appropriate forum to review the impact the "as found" basis and modifications to the Mechanism are most likely not necessary should the Commission approve programs our measures utilizing "as found" savings. Additionally, the existing Mechanisms have the necessary protections built in, as they place a cap on the return on cost that the Companies may earn through their Portfolio Performance Incentive.

IV. EXPANDING THE CUSTOMER POOL WOULD CREATE NEW OPPORTUNITIES TO ACHIEVE SAVINGS

Q. MR. DUFF, DO YOU AGREE WITH THE PUBLIC STAFF THAT "THAT ACHIEVEMENT OF [THE 1% ENERGY EFFICIENCY] TARGET WOULD REQUIRE A NUMBER OF LEGISLATIVE AND REGULATORY CHANGES, INCLUDING CHANGES THAT WOULD AFFECT THE COMPANIES' ABILITY TO DEVELOP THESE ENERGY EFFICIENCY PROGRAMS IN A COST-EFFECTIVE MANNER"?

A. Yes. The Companies agree that achievement of the projected 1% of eligible load annual reduction over the long term could require legislative changes, such as

broadening the definition of energy efficiency to allow for *optimization* of energy usage as energy efficiency, instead of focusing on only reducing energy usage. Achievement of 1% of eligible load reduction will also require several regulatory changes. Regarding regulatory changes, as I discussed earlier in my testimony regarding some of the proposed enablers, the Companies clearly recognize the necessity, and they plan to work with the Collaborative to potentially propose changes to the Mechanism, as well as separate programmatic approvals as recommended by the Public Staff.

Q. DO YOU AGREE WITH ELECTRICITIES AND THE POWER AGENCIES IN GENERAL THAT LOAD REDUCTION AND MANAGEMENT FOR WHOLESALE CUSTOMERS MAY PRESENT AN OPPORTUNITY FOR REDUCING CARBON EMISSIONS IN A COST-EFFECTIVE MANNER FOR THE COMPANIES' UTILITY SYSTEMS?

A. Yes. It is undisputed that the Companies' wholesale contracts are solely under the jurisdiction of the Federal Energy Regulatory Commission ("FERC"); however, the Companies agree that the Companies' wholesale customers seeking to participate in the Companies' approved portfolio of EE programs could over time provide a potentially sizable opportunity to reduce the energy needs and associated emissions of the Companies' utility systems. In fact, at its March Carbon Plan Stakeholder Meeting, the Companies shared this idea as part of their presentation on "Modifications Expanding the Potential Measures and Offers Reducing Consumption from the Grid." The concept was not

included in the Carbon Plan due to the complexity associated with contract negotiations with wholesale customers and the necessity of subsequent FERC approval, in addition to Commission approval of cost allocations associated with its retail energy efficiency programs. After reading the Comments of Electricities and the Power Agencies and their potential interest in participating in the Companies' energy efficiency offerings, the Companies will continue to explore these opportunities in the future wholesale contract negotiations.

Q. THE CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY RATES ("CIGFUR") ENCOURAGES THE COMPANIES TO ADOPT A PROGRAM MIRRORED AFTER THE SOUTHERN CALIFORNIA EDISON'S TIME-OF-USE BASE INTERRUPTIBLE PROGRAM. HAVE THE COMPANIES CONSIDERED THIS PROPOSAL?

A. Yes. In fact, as part of DEC and DEP's settlement agreements with CIGFUR III and CIGFUR II in the Companies' most recent rate cases in Docket Nos. E-7, Sub 1214 and E-2, Sub 1219 respectively, the Companies agreed to explore implementation of a program in North Carolina similar to the Southern California Edison program, including filing for approval of such a program if supported by mutual agreement between CIGFUR and the Companies and provided at least one CIGFUR member is willing to take service under such a program. CIGFUR presented the idea in the recent Comprehensive Rate Design Study (completed in March 2022) and discussions about potential program proposals are ongoing.

Q. ARE THERE OTHER OPPORTUNITIES TO EXPAND THE CUSTOMER POOL FOR ENERGY EFFICIENCY AND DSM PARTICIPATION?

A. To achieve the aggressive long-term energy efficiency projection necessary for energy transition and included in the Carbon Plan, the Companies recognize that they must increase the efficiency savings from customers that are participating in the Companies' portfolio and obtain savings from customers not participating in its portfolio of EE/DSM programs or, as the Companies call it, expanding the pool for savings. The Companies have identified two significant potential ways to expand the pool for savings. First, as discussed earlier, the Companies could offer their portfolio of energy efficiency programs to wholesale customers. Second, the Companies could work to expand the number of non-residential customers that participate in the programs, as currently over 30% of the Companies' total retail load are non-residential customers that have opted out of energy efficiency and DSM programs.

V. NET METERING AND RATE DESIGN

Q. PLEASE BRIEFLY DESCRIBE THE COMPANIES' CURRENT EFFORTS AT NET METERING REFORM AND THE FOCUS ON TYING TIME-OF-USE SCHEDULES TO ROOFTOP SOLAR.

A. In response to HB 951, which directed the Commission to "revise net metering rates," the Companies have filed proposed reforms (called the "NEM tariffs") to its net metering program in Docket No. E-100, Sub 180. The Companies worked with stakeholders to develop Solar Choice both in the Comprehensive

Rate Design Study and afterward. In summary, Solar Choice utilizes more sophisticated rate design features, including a Time-of-Use design, to send more targeted price signals to customers, incentivizing rooftop solar developers to design systems that maximize the value to the electric system. The new rate designs will also ensure appropriate recovery of fixed costs as required in North Carolina Session Law 2017-172 ("House Bill 589").

In addition, as a part of HB 951's direction to revise net metering, the Companies have separately filed Smart $aver Solar programs in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261. These proposed programs offer incentives to customers who not only install rooftop solar panels, but also agree to long- term participation in a winter smart thermostat demand response program. By bundling rooftop solar with a demand response tool, customers choosing to participate in net metering would offer a more complete resource that provides valuable utility system benefits. Rooftop solar is an excellent tool for reducing energy costs, while demand response offers a winter capacity value.

These reforms to net metering were developed jointly with stakeholders and have received support from a wide variety of parties including NCSEA, Southern Environmental Law Center on behalf of Vote Solar and SACE, Sunrun Inc., Solar Energy Industries Association, Sundance Power Systems, Southern Energy Management, Inc., and Yes Solar Solutions.

Q. PLEASE DESCRIBE THE COMPANIES' EFFORTS AT STAKEHOLDER ENGAGEMENT TO UNDERTAKE COMPREHENSIVE RATE DESIGN REFORM.

A. The Companies engaged a third-party facilitator to support a broad stakeholder process covering both DEC and DEP rate designs over the course of 12 months, concluding in March 2022. The collaborative process included participation from more than 50 organizations including commercial and industrial customers, EV companies and advocates, environmental advocates, government agencies, public advocates, renewable/distributed energy companies, and legal/consulting companies. Topics covered were comprehensive, spanning time-of-use rates, net metering, EV pricing structures, and core rate designs for residential and non-residential customers. Participants presented ideas, offered feedback, and supported outcomes through numerous sessions and supporting surveys. As a result, the Companies were able to craft an informed vision and direction for future pricing and rate design options in the form of a Roadmap, which the Companies filed with the Commission in Docket Nos. E-7, Sub 1214 and E-2, Sub 1219 on March 31, 2022.

Q. HOW CAN RATE DESIGN SUPPORT GRID EDGE CUSTOMER PROGRAMS GOING FORWARD?

A. Well-designed rates can both provide assurance that customer bills reflect the cost to serve those customers as well as provide price signals that encourage system beneficial consumption patterns. For example, as detailed in the Comprehensive Rate Design Study referenced earlier, the Companies are

pursuing rate designs that encourage avoidance of consumption during peak times and dynamic rates that will encourage load reductions during critical system peaks. The Companies filed Carbon Plan includes impacts from these rates designs and assumes the combination of well-designed rates and customers' responsiveness to reduce system peaks.

New rate designs cannot exist in a vacuum, and the Companies need more pricing and product bundling to scale participation and maximize impact. This is the approach the Companies took with Smart $aver Solar. In that proposed offering, the Companies combine dynamic TOU-CPP rates, smart thermostats, and solar energy. Innovative pairings like this are just scratching the surface of what the Companies can offer customers as capabilities, regulatory models, and technology progress. Additionally, the Companies need to be able to rapidly test different pairings and rate designs to see how they engage different customer segments as further described in testimony below.

VI. NEW CUSTOMER PROGRAMS, PILOT PROGRAMS, AND FLEXIBLE REGULATORY MECHANISMS WILL HELP ACHIEVE CARBON REDUCTION TARGETS

Q. PLEASE DESCRIBE THE COMPANIES' ONGOING EFFORTS TO DEVELOP PROGRAMS FOR LARGE CUSTOMERS AND RESIDENTIAL CUSTOMERS TO VOLUNTARILY PURCHASE RENEWABLE ENERGY.

A. The Companies are presently engaged in a combined stakeholder process for North Carolina and South Carolina with interested customers, developers, environmental advocates, the Public Staff and the ORS. This process will

1 inform the ultimate program concepts that the Companies will file later this year
2 to provide the next generation of voluntary customer renewable programs.
3 Customers have a range of their own renewable and sustainability goals with
4 different timing and targets. Because one size does not fit all customer needs,
5 the Companies are looking to provide customers with options to more
6 specifically meet their unique needs and circumstances. The Companies'
7 programs will have a significant focus on large non-residential customers,
8 which are the most mature in the development of their own sustainability goals,
9 but the Companies will also focus on residential and small business customers
10 with program concepts.

11 **Q. PLEASE DESCRIBE THE SPECIFIC PROGRAM CONCEPTS THE**
12 **COMPANIES HAVE DISCUSSED WITH STAKEHOLDERS TO DATE.**

13 A. As stated above, the Companies are engaged in ongoing stakeholder processes
14 that will inform any future program proposals. Subject to change given
15 stakeholder feedback, what follows is a summary of the various proposals
16 currently being considered. The Companies have developed three types of
17 programs to date. The first is a new and improved large customer program,
18 which expands and adds new features to the Green Source Advantage ("GSA")
19 program that exists today. This new GSA Choice program offering would allow
20 up to 100% energy matching, which is not available today. Further, it would
21 allow customers to work with either a third party or the Companies on their
22 renewable energy needs. For third-party options, the Companies would also
23 offer customers a range of options for the avoided cost bill credit option. For

the utility ownership option, the customer would purchase renewable energy certificates ("RECs") from one of the Companies as an anchor tenant under a long-term contract. The RECs revenue would be credited to fuel cost and benefit all customers. In addition, whether a customer selected the third party or utility-owned option, there would be an optional feature to partner in energy storage technology where the Companies would use the battery for peak capacity needs and allow the customer to use the storage technology to better time-align their renewable energy with their actual energy use profile.

The second program, which the Companies have described as Clean Energy Impact, would be for residential and business customers just starting their sustainability journey and who want to support the advancement of renewables by purchasing locally generated RECs from Company-owned renewable resources. This option would not require a long-term commitment and would allow customers to select flexible increments. For example, Residential customers would be able to buy blocks of RECs, and Small Business customers could select anywhere between 1-100% of energy matching. The RECs would be retired on the customer's behalf to ensure no double-counting, and customers would receive annual documentation on the renewable energy they can claim.

The third program concept is Clean Energy Connection, which is a subscription solar program for all customer types to support renewable energy in North Carolina. Participants can point to specific solar site(s) they are participating in through a monthly subscription fee on their Duke Energy bill

that is fixed for the life of the asset. This is an ideal option for customers that do not: 1) have available ground or roof space; 2) want to invest in installing solar; and 3) do not want to be responsible for the ongoing maintenance. Participants would receive a monthly bill credit that increases over time. In the beginning, this subscription fee is larger than the bill credit and later, as the bill credit increases over time, the credit will be larger than the monthly subscription fee. The Clean Energy Connection would also have an income-qualified carve-out where participants can see bill savings starting on day one. The Companies have filed notice in this docket of an open invitation stakeholder meeting to be held in August, and a second meeting is tentatively scheduled for September. The Companies are not requesting approval of any specific customer renewable energy programs in this proceeding but wanted to respond to intervenor comments requesting information on the Companies' development of these programs consistent with HB 951.

Q. ARE THERE OPPORTUNITIES FOR EXPEDITING REGULATORY APPROVALS TO ENSURE THAT THE COMPANIES CAN KEEP PACE WITH CHANGES IN TECHNOLOGY AND OFFER NEW CUSTOMER PROGRAMS IN A TIMELY MANNER?

A. Yes. New technology and clean energy mandates and goals across the United States are driving utilities to rapidly innovate their customer programs and service offerings. On a national level, the regulated community is considering what changes to the existing regulatory processes are needed to ensure innovative solutions are identified, tested, deployed, and scaled at pace to meet

these goals. For example, Guidehouse authored a report for the Edison Electric Institute entitled "Electricity Regulation for Customer-Centric Future: Survey of Alternative Regulatory Mechanisms"[5] that details efforts to modernize the regulatory paradigm. These efforts include the need for flexible and expedited Commission approval processes that embrace a less formal and more collaborative process than the current formal Commission approval process, such as investigatory processes over quasi-judicial hearings and contested case proceedings. Also, a recent article in Utility Dive highlights research at the U.S. Department of Energy's Lawrence Berkeley National Laboratory focused on designing pilot programs found that collaborative regulatory processes will spur innovation needed to meet clean energy goals.[6] The Companies believe that similarly, here in North Carolina, there may be the need for new regulatory approaches to expedite the pilot programs needed to accomplish energy transition and implement the Carbon Plan to meet the evolving needs and expectations of customers and the timelines to be established by G.S. § 62-110.9.

Q. HOW CAN THE COMMISSION HELP TO ENSURE THAT PILOTS FOR INNOVATIVE PROGRAMS ARE APPROVED IN A TIMELY MANNER?

A. Other states have expedited implementation processes for customer programs

[5] *Available at* ghelectricityregulationforacustomercentricfuture.pdf (guidehouse.com) (2Q 2020).

[6] 'Dramatic shift' in utility regulations, better pilot designs needed to propel energy transition, DOE report finds | Utility Dive.

and pilots that the Companies believe may warrant consideration as North Carolina to enable timely implementation of energy transition and the Carbon Plan. Here in North Carolina, an example of an expedited approval process is the "Flexibility Guidelines" the Commission has approved as part of the Companies' Mechanisms. The Commission's "Flexibility Guidelines" allow for more streamlined minor modifications to existing DSM/EE programs so that the Companies can meet the need for program changes more quickly. The Companies believe that a similar expedited approval process for *new* customer pilots would better allow it to innovate and timely implement the Carbon Plan. The Companies plan to consider this issue further and may file a formal proposal with the Commission after it issues its Carbon Plan.

VII. CONCLUSION

Q. ARE THERE ANY FINAL TAKEAWAYS YOU WOULD LIKE TO SHARE WITH THE COMMISSION?

A. The first step in achieving the energy transition in a least-cost manner is to reduce and manage load at the edge of the grid, with a suite of grid edge customer programs that include energy efficiency, DSM, customer self-generation, voltage management, and other distributed energy resources. As we move forward, it is important to recognize that different customers have different goals, lifestyles, and risk tolerances. The Companies must therefore offer a compelling menu of pricing options to customers to reach the adoption levels necessary for a material impact on peak loads. The enablers identified in this testimony will help the Companies develop cost-effective programs that

will empower our customers to reduce their energy usage and achieve the 1% energy efficiency target.

Thus, in addition to finding that the 1% of eligible retail load is a reasonable and prudent assumption for planning purposes, the Companies also request, the Commission acknowledge that the following changes will need to be made as enablers to achieving the targeted energy efficiency savings: updating the inputs underlying the determination of the utility system benefits, moving to an "as-found" baseline, and expanding the pool of low-income customers.

Additionally, tariff-on-bill programs are not yet before the Commission; once approved, they will be important components of the Companies' energy transition and implementation of the Carbon Plan. To that end, the Companies request that the Commission acknowledge those programs as such during the tariff-on-bill proceedings.

The Companies also request that the Commission acknowledge that, in a future proceeding, it is reasonable for the Companies to propose new flexibility and rapid prototyping guidelines to ensure regulatory approval of new DSM/EE pilots and rate designs in a timely manner.

Q. MR. HUBER AND MR. DUFF, DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

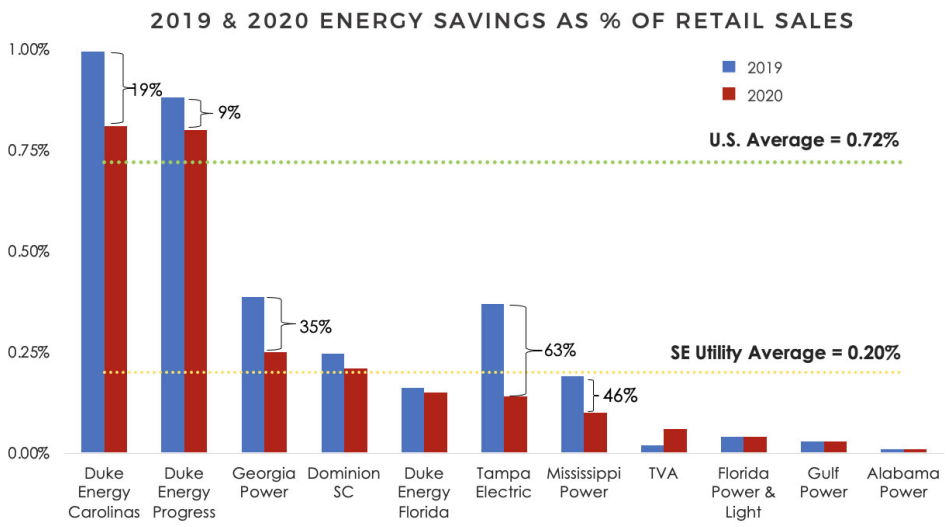
A. Yes.

Duke Energy Carolina, LLC and Duke Energy Progress, LLC
Summary of Direct Testimony – Grid Edge Panel
Lon Huber and Tim Duff
Carolinas Carbon Plan
Docket No. E-100, Sub 179

Our joint testimony describes how Duke Energy intends to "shrink the challenge" of the energy transition by reducing energy requirements and modifying load patterns through innovative Grid Edge customer programs and activities. As you have heard "shrinking the challenge" is the first step of the three-pronged approach to energy transition and the Carbon Plan process.

For purposes of Carbon Plan modeling for the energy transition, the Companies have assumed an annual reduction of 1% of eligible load from energy efficiency programs. This assumption is built on the Companies' extensive, real-world experience operating and implementing energy efficiency programs in the Carolinas and detailed engagement in the Carolinas energy efficiency/demand side-management ("EE/DSM") Collaborative. As you can see from this chart, Duke Energy has the most advanced deployment of energy efficiency in the entire Southeast.

Figure 1



Our more than a decade of experience successfully developing and implementing energy efficiency programs in the Carolinas, as well as, leveraging the insights of stakeholder participation in our Collaborative tells us that 1% is an aggressive but achievable target. Contrary to the assertions of various intervenors, assuming higher amounts of energy efficiency is not reasonable or justified at this time under the existing legal framework and market conditions. Additionally, a perfect projection of future EE/DSM is not necessary at this time. The iterative nature of the biennial update to the Carbon Plan will allow us to implement the identified

enablers, with Commission approval in other proceedings, and assess whether an adjustment is needed to the EE target.

That being said, those enablers are key to achieving the increasing amounts of energy efficiency up to 2030 and beyond. Specifically, the Companies plan to update the underlying determination of utility system benefits in the Companies' approved EE/DSM Cost Recovery Mechanism, which will occur in future proceedings. The Companies will also look to update certain programs to use an "as-found" baseline and expand the potential pool for low-income qualified programs. We intend to fully vet these programs through the EE/DSM Collaborative, and the Commission will have the opportunity to review and approve EE/DSM and customer programs as those programs are filed for approval.

Our testimony also offers further details concerning the mechanics of future EE/DSM changes and further explains the Companies' approach regarding Net Energy Metering and electric vehicle pilots. We also describe the ways in which the Companies' proactive and cutting-edge rate designs will dovetail with future carbon reduction efforts. Additionally, the Companies are actively engaged with stakeholders to develop new, exciting customer renewable programs consistent with HB 951. Finally, our testimony explains that the Companies believe that an expedited regulatory process for our proposed innovative pilot programs will be essential to enabling more innovation with respect to Grid Edge activities.

This concludes our summary.

MS. FENTRESS: Thank you. The panel is now available for questions from the parties and the Commission on their direct testimony.

CHAIR MITCHELL: All right. We will begin with Attorney General.

MR. MOORE: No questions.

CHAIR MITCHELL: All right. Appalachian Voices?

CROSS EXAMINATION BY MS. CRALLE JONES:

Q. Good morning, Mr. Huber and Mr. Duff. My name is Cathy Cralle Jones, and on behalf of Appalachian Voices, I just want to say I am very excited that your panel got moved up a little bit, because I think this is an important issue. And like the Company has said, it is the first prong of meeting the challenge of the carbon plan; is that correct?

A. (Lon Huber) That's correct.

Q. All right. So let's -- I would like to start with Mr. Huber.

On page 5 of your testimony, it's the very beginning of the substantive part, beginning on line 18, you, in fact, say that the first pillar of energy transition in the Carbon Plan process is to shrink the challenge by reducing energy requirements and modifying

load patterns through Grid Edge Customer Programs, allowing more tools to respond to fluctuating energy supply and demand; is that correct?

A. That's correct.

Q. All right. So there's two points that you make here, is those programs both reduce energy requirement and modify load patterns.

So based on your testimony, I don't think we have any dispute that the programs that you -- that we're gonna be talking about today can reduce total energy requirements, correct?

A. Yeah. Indeed, some of the programs we propose reduce energy.

Q. And then same question as to modifying the load patterns.

Those programs are designed to be able to try and effect load patterns as well, correct?

A. Correct. We have a number of programs that aim to shape load and optimize energy load shapes.

Q. And the reason that's important is because, if we can reduce energy requirements and modify the load patterns, that results in lower energy costs overall, correct?

A. When you do so in a cost-effective manner,

absolutely, it can -- it can lead to an overall lower cost system.

Q. And thus reduce the need to increase customer rates; would that be correct?

A. Well, you would be avoiding costs down the road that would increase customer rates. So yes, you would overall be lowering costs as those programs were, you know, deemed cost-effective and have significant impacts overall.

Q. The Modeling Panel testimony was introduced earlier, and I don't -- I'd like to read a couple of sentences there. I'm assuming, since it's Duke's testimony, you will agree, but I just want to focus our conversation based upon that testimony. And this was, for the record, Modeling Panel Direct Testimony 29 starting at line 11, and I'm gonna read the first sentence and then just ask if you agree.

"Every incremental megawatt of load the Companies need to serve presents the potential to have to serve that load with incremental cost or CO2 emissions."

Would you agree?

A. Subject to check on that, it sounds reasonable to me.

Q. So every additional megawatt that has to be served will result in either more cost or more emissions.

Is the converse also true, that every megawatt of load that you can reduce presents an opportunity to reduce cost and CO2 emissions?

A. Yeah, I think generally speaking. There's times -- and I think this was hit on where you have over-generation of clean energy resources -- where an increase of load at certain times actually does not increase carbon usage. And so it's a nice -- you know, it's a general statement.

So we just have to be careful, because the grid is changing, and so, you know, the net peaks are shifting, there's gonna be times when there's an overabundance of clean energy resources and you actually want load building, but in general, you could say, well, when there's a load, especially when it's on peak, that can drive incremental costs. As you reduce load on peak, that could help save costs.

Q. And then I'm gonna ask one more question related to the Modeling Panel testimony, and that was on that same page, beginning at line 13. And subject to check, they said:

"To the extent that Grid Edge and Customer Programs can reliably and cost-effectively be utilized to manage fluctuating energy supply and demand and reduce system annual and peak demand requirements to ensure reliability of the system," and this is the part, "the Companies plan to prioritize deployment usage of those resources -- such resources."

Would you generally agree with that statement?

A. Yes.

Q. So your testimony focuses, then, on how to prioritize that deployment and use grid resources, correct?

A. Well, yeah. My portion of the testimony hits on what we can do with rate design, maybe some regulatory innovation to keep pace with technological change and customer preferences, as well as new customer renewable programs. And then, you know, Mr. Duff also, you know, has testimony mostly centered around energy efficiency and programs of that nature.

A. (Tim Duff) Yeah, that's correct.

Q. And this is a question for either you, just for orientation.

Just, can you give us a brief description of

how load reduction is a consideration in prioritizing grid resources?

A. So the load reduction is speaking for energy efficiency and demand response, and I don't want to put words in Mr. Huber's mouth, but I think it's also true with respect to rate designs and other programs. We look at the avoided peaks associated with peak reduction and value that in trying to quantify what the impacts of programs are.

Q. So if you can modify peak use, is one concern, and then also modifying total use, that's also a concern as well?

A. That's correct. Energy efficiency tends to reduce energy consumption, while demand response is more focused on shifting usage away from the peak; that's correct.

Q. Would you agree that utility energy efficiency investments are often the lowest-cost resource available?

A. They can be. That's why each -- prior to getting approval for a program, the Company submits a projection of the cost-effectiveness to determine that it is a cost-effective, meaning more benefit is generated than the cost.

Q. And then, likewise, would they then also be the lowest-cost carbon-free resource?

A. Again, it's -- you'd have to look at it on a case-by-case basis to really understand, but I think that there is a chance that certain energy efficiency programs could be a low-cost resource.

But it's not necessarily factored in as a resource in our plan. It's really looked at more as a load reduction that's factored in prior to determining the supply-side resources required to meet the load. At least that's my understanding after talking to the modeling team.

Q. Now I'd like to turn your attention to the figure that you included in both the testimony summary and in your direct on page 11.

A. Yes, I see it.

Q. That's -- it's referred to as Figure 1, 2019 and '22 -- I'm sorry, 2019 and 2020 energy savings as a percentage of retail sales.

Can you see that figure?

A. Yes, I do.

Q. Did Duke generate this figure or was it published by a third party?

A. It was published by a third party.

Q. Was that third party the Southern Alliance for Clean Energy?

A. Yes, it was.

Q. Is the Southern Alliance for Clean Energy a credible source?

A. With respect to the presentation of this information, we felt it was credible. I don't want to speak of their overall credibility on all subjects.

Q. But you felt that it was credible enough that you would include it in your own testimony here?

A. We felt that it was a good representation of what has been achieved, because it was a third party who participates in our stakeholder or collaborative meetings regularly, so they have a good understanding of our energy efficiency program achievement.

Q. And on the page apposite that, you cite there the February '22 fourth annual report, and that's the report in which that graphic was published, is it not?

A. That's correct.

Q. And in this testimony, you use that figure to illustrate your testimony that the Companies -- and this is here on page 10 -- quote, continue to provide regional leading -- excuse me. Continue to provide regional leading savings that are well above the

national average for utilities.

A. Yes.

Q. Do you -- so that's regional leading savings.

Do you also consider Duke to be a national leader?

A. So yes, we consider Duke to be a national leader, because it's -- the regionality and the customers that the specific utility is serving have an impact associated with the percent of retail sales savings.

So not only are we higher than the national average, considering the fact that we are -- have a consistent track record of being the overall leader in the Southeast, we feel that we are also one of the national leaders in utility efficiency.

MS. CRALLE JONES: Chair Mitchell, I have some exhibits that I'd like to use at this point. And to try to save some time, I would like to distribute three of the exhibits that I'll be doing -- using.

CHAIR MITCHELL: All right. Go ahead. And if somebody could help Ms. Cralle Jones, that would be appreciated.

(Pause.)

CHAIR MITCHELL: All right. Ms. Cralle Jones, let's go ahead and mark -- let's mark the first one, at least.

MS. CRALLE JONES: All right. The first one should be the Southern Alliance for Clean Energy, February 2022, page 12. And I think it should be marked as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 1.

CHAIR MITCHELL: All right. Document will be marked for identification as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit Number 1.

(Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit Number 1 was marked for identification.)

Q. And you can see from the bottom of this document that this was taken from that February '22 fourth annual report that your Figure 1 was taken from as well, correct?

A. Correct.

Q. Have you seen this page before?

A. Yes.

Q. And the graphic that's on this page, you also use in the Carbon Plan, I believe, at Figure G-2.

A. Subject to check, yeah.

Q. Subject to check. Okay.

A. I believe so.

Q. So do you have any reason to believe that the information on this page is not credible?

A. With respect to the -- with respect to the graph, no. With respect to commentary, that's a little bit more opinion.

Q. Okay.

A. But the numbers, we believe -- have no reason to believe are off base.

Q. For the record, though, I am gonna read the commentary that's there on the bottom left corner on the issue of leadership. It says:

"Duke's utilities in the Carolinas have led the Southeast in efficiency savings for years, but how do they stack up nationally? They have been consistently near the national average, which includes municipal and co-op utilities that do little or no energy efficiency. With the Southeast region's history of subpar performance, we've become accustomed to thinking average performance is leadership. But with at least half of all major utilities achieving higher savings, true leadership means reaching much further."

Did I read that correctly?

A. That's what it says, yes.

Q. Mr. Huber, you've worked in the utility sector more than a decade and served as residential consumer office in Arizona, and you were a VP at Strategen, and an expert witness for Navigant, and you've been with Duke since 2019.

Do you know who the major utilities are the report is referring to that are achieving higher savings than Duke?

A. (Lon Huber) Well, I could guess. But remember, we want to ensure we have proper context around what metrics they're using to determine leadership. And I think Mr. Duff gets into it in his testimony where sometimes those percentages can be very misleading, because you have a completely different set of rules and a set of customers. And so typically what you see, and Mr. Duff can expand on this, is that stakeholders will pull out a few Northeastern utilities and say, well, look it, they're hitting 3 percent yearly savings or maybe some Northwestern. But we have to be very careful what statistics we're using and making sure we're comparing apples to apples.

A. (Timothy Duff) Yeah, I'll just add real

1 briefly. We actually discussed that in our Carbon Plan
2 stakeholder meeting regarding some of the dangers of
3 overly relying on the percent of retail sales as being
4 a metric that is always a truly applicable metric.
5 Q. You do discuss in that testimony the 2020
6 utility energy efficiency scoreboard, correct?
7 A. The ACEEE score card?
8 Q. Uh-huh.
9 A. Yes, we do discuss that.
10 MS. CRALLE JONES: I'd ask the Chair now
11 that we mark Appalachian Voices Grid Edge Panel
12 Direct Cross Examination Exhibit 2 as the 2020
13 Utility Energy Efficiency Scoreboard Table 8.
14 CHAIR MITCHELL: All right. The
15 document will be marked for identification as
16 Appalachian Voices Grid Edge Panel Direct Cross
17 Examination Exhibit Number 2.
18 (Appalachian Voices Grid Edge Panel
19 Direct Cross Examination Exhibit
20 Number 2 was marked for identification.)
21 Q. Mr. Duff, can you identify this document?
22 A. Yes, I've seen this document before. It's a
23 score -- a scoring of the different utilities according
24 to ACEEE's interpretation of what a utility's

performance is.

Q. And we can set aside for a moment whether it's -- what's the appropriate metric, whether it's total retail sales or eligible retail sales.

But setting that aside for a moment, does -- does this show that nationally the average is, at least for 2018, was 1.3 percent -- 1.03 percent of savings as a percentage of sales?

A. So it does say 1.03 percent, but that's a -- these utilities on the scorecard. So it's not a comprehensive list, it's only those that they factored into the scorecard. And as I believe I said earlier, it's important to point out that how a utility counts savings in their state-specific rules associated with energy efficiency achievement is an important variable in determining what that number is.

Q. Are you saying that the list here is not an appropriate -- is this not a list of comparable utilities to Duke Energy? Are these not your peers?

A. They're peers, but I have firsthand knowledge that what is being represented here as net savings is not an apples-to-apples comparison for the very reasons that we talk about, which is that how savings are counted is different by jurisdiction.

Q. Okay. And we can get into that testimony later. But just looking at this piece, I -- subject to check, there are approximately 52 utilities on this card.

In the right-hand column I see Duke Progress. Would that be Duke Energy Progress? That's --

A. No, it's kind of a confusing. I -- my understanding is that actually Duke Energy SC is Duke Energy Carolinas, and Duke Energy NC is Duke Energy Progress, and Duke Energy Progress is Duke Energy North -- I'm sorry, South Carolina. It's a very -- as you see, they chop it up.

That was my very point, is that it's not necessarily a really accurate document, because it's subject to ACEEE's arbitrary counting. And, I mean, as I said, you can't even tell which utility is being talked about; is it Duke Energy Progress, is it Duke Energy Carolinas, is it North Carolina, is it South Carolina?

I mean -- and if ACEEE really did the research, they would understand that we report Duke Energy Progress as a system and Duke Energy Carolinas as a system. There wouldn't be three numbers here that we can't explain.

Q. But whether or not it was reported under any of these three entities, would you agree that all three numbers are below the national average?

A. Based off of the arbitrary scoring and the 1.03, I don't think this is a national average. This is an average of what ACEEE measured, not what -- not what the comprehensive measurement that seemed to be more in line with what the SACE report that you earlier mentioned.

Q. And you may have a dispute with this one, but in terms of what this document says, here Duke has reported -- whichever place they're reported, they're all reported to be under what's reported to be the national average for retail?

A. So no, it doesn't say this is a national average. It says the average of the companies reported on the scorecard. I think that's an important difference. I'm not trying to be difficult, but to say it's a national average when it's just an average of the 50 or so that are shown on the sheet, I don't think is an accurate representation.

Q. Is it co-op? I mean, I'm trying to get a sense of what you think is missing off of this page. Is it utility co-ops that is missing?

A. I can't -- I can't tell you. But I can tell you that this is not a comprehensive list of all of the different utilities that offer efficiency programs across the country. It's just the list of those shown.

Q. Okay. I don't think we -- this shows what it shows and you have dispute with it, but would you agree, at least for the scorecard, that they maintain that all of the major utilities that are listed above any of the Dukes here, except for Duke Ohio, achieve a higher rate of energy efficiency savings as a percentage of retail sales?

A. The ranking of the utilities on the scorecard, subject to the ACEEE calculation methodologies, I'm not going to dispute. I think it shows a rank order. However, I dispute the accuracy of making the comparison based on how they do the calculations.

Q. Now let's turn for a minute to page 31 of your testimony where you began a discussion of necessary enablers to achieve Carbon Plan goals. Let's read together starting at line 6.

"As previously discussed, when developing the long-term forecast with a minimum of 1 percent of eligible load through the Companies' EE/DSM programs,

the Companies worked to identify several potential enablers that would be necessary to achieve the long-term energy efficiency savings included in the Carbon Plan."

Did I read that correctly?

A. Yes, that's what it says.

Q. Okay. Would these necessary enablers, in general, would you say these are things that need to be done in the near term?

A. We believe that they need to be done in the near term, yes.

Q. And one of the enablers that you begin to explain at the bottom of that page are expanded low-income programs, correct?

A. Yes, that's what it says.

Q. Have low-income programs been a priority of the Companies historically?

A. Yes. We've tried to have effective EE programs that target all customers, as well as successful programs that target income-qualified or low-income customers, yes.

Q. Has -- have the Companies set a goal for energy efficiency savings delivered to low-income customers, particularly?

A. No. We haven't set a specific goal. We set a program budget based off of projected participation in the programs that is utilized for cost recovery purposes as well as for, kind of, planning purposes. However, it's important to point out that we have a very broad portfolio of programs. And so while you have programs that specifically target income-qualified customers or low-income customers, we also have a broad path -- or broad set of programs that can provide meaningful cost-effective energy efficiency program that don't specifically target them.

So it's -- to create a separate target on income-qualified energy efficiency programs isn't necessarily always a wise thing.

Q. Okay. We can talk about that some more. But do you have up there the Grid Edge appendix?

A. Yes, I do.

Q. Could you turn to Figure G-2, please.

A. Do you have a page by any chance? There's tables --

Q. It's page 8.

A. Okay. Thank you.

(Witness peruses document.)

I'm there.

Q. And the figure describes DEC and DEP energy savings as a percent of prior year retail sales.

So this isn't eligible sales, is it, it's retail sales?

A. I believe that's correct.

Q. Okay. And just to get clear here, if you've got a color copy, you've got in the dark blue there's -- that represents energy efficiency savings for commercial, and light blue is residential, and then yellow is low income.

Looking at that figure, can you tell me the approximate energy savings as a percentage of sales that the Companies have achieved through low-income programs?

A. I can't tell you the exact percentage of them based off of the scale on this graph. What I would -- what I would say is that, again, this is representing -- and I believe this was put together based off -- based off of, kind of, qualifying low income as those programs that specifically are targeted to low income, or only available to customers who meet eligibility requirements for income qualification.

We do have energy efficiency programs that have a demonstrated track record of providing

cost-effective savings to those same income-qualified customers. It's just not through the programs that are only available to customers who are income-qualified.

Q. Well, based on this chart, though -- and you said at the beginning you can't tell me the percentage -- is it fair to say that -- that low-income savings demonstrated here is not the significant, and it's almost imperceivable on that graph?

A. No, that's not what my prior answer was. My prior answer was that program -- that I can't tell you the percentage achieved based off of this from programs that are specifically targeted to low income; nor can I tell you the savings that are also being realized by income-qualified customers that come through our regular programs.

Q. And we saw a similar graph in Exhibit 1 which was for the 2020 period.

But also, again, very low percentage of low-income programs designated on this chart?

MS. FENTRESS: Can I ask, you said Exhibit 1?

MS. CRALLE JONES: I'm sorry, Exhibit 1, which was the Southern Alliance for Clean Energy February '22 report.

MS. FENTRESS: Thank you.

MS. CRALLE JONES: The regional leadership and the national context.

THE WITNESS: Again, you're -- the scale of those graphs is up to 1 percent. So again, I'm talking about giving a fraction of a percentage. And based off of the scale, I can't do that off of these graphs.

Q. But relative to residential programs and commercial programs, it's very little or insignificant relative -- relative to these other two programs?

MS. FENTRESS: I'm gonna object. I think Mr. Duff has answered the questions on this graph. The graph says what it says. It's in the record.

CHAIR MITCHELL: Ms. Cralle Jones?

MS. CRALLE JONES: That's fine. We'll move on.

CHAIR MITCHELL: All right.

Q. Mr. Duff or Mr. Huber, do you know how many of the households you serve are considered low-income?

A. So I don't know the number off the top of my head. I think it would require you to give me a little bit better definition of what you mean by low income.

There are a number of definitions. I know the Low Income and Affordability Collaborative spent a great deal of time looking into the definition of affordability and really couldn't come forward with a formal recommendation; but rather, came forward with a recommendation that the eligibility for programs should be based off of 200 percent of the federal poverty guideline.

Q. So you said they didn't have a formal recommendation, but then you said it should be based on 200 percent of the federal poverty guideline?

A. They did not have a formal recommendation to establish a definition of affordability. The recommendation that they had was, for program eligibility, that they should use 200 percent of the federal poverty guideline as that threshold.

Q. But the number of customers that Duke has that meet that 200 percent guideline is data that the Companies provided and collected as part of the low-income collaborative, correct?

A. Yes. And I apologize, I don't have that number in front of me, but it was provided to the Commission in the -- I believe it was August 12th filing of the Low Income and Affordability

Collaborative final report.

Q. The next document that you have with you is -- I'll represent was Duke Energy's response to Appalachian Voices' Data Request Item 1-17.

MS. CRALLE JONES: Chair Mitchell, we'd ask that this document be marked as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 3.

CHAIR MITCHELL: All right. The document will be marked for identification as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit Number 3.

(Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 3 was marked for identification.)

MS. CRALLE JONES: And Commissioners and panel, I want to represent -- and you can see from the first page there's a narrative response and then there was an Excel sheet that was embedded in that that provided additional information. On the second page is a printout of that, and you can see that the narrative that was on that Excel page went off the page, that's what makes it difficult to read. So we have on the third page, then, taken

that same data from the Excel sheet but just reformatted it so that the narrative could be read.

Q. So with that qualification, if you would turn to the last page of that exhibit, this is a -- the document response asking about the data showing the participation rates of low-income households in the Companies' existing energy efficiency programs. And then in the response, Duke says that this is dada for the calendar year 2021 as of accounts active on July 8, 2022.

Have you seen this document before?

A. Yes, I have seen it.

Q. Okay. So just to go through, what we show here is the low-income customers are, as you testified before, those households having an income less -- equal to or less than 200 percent of the federal poverty level?

A. Yes, that's what was used to show as low-income customers.

Q. And so that total is 980,773 customers of the 3-plus million that are served are low income?

A. As the point -- as importantly said, at the point in time, because the income numbers fluctuate.

Q. Right. And the graph below that, then, helps

us know that that's about 4 percent -- I'm sorry.

Subject to check -- and you have to do math at this point because we're doing 980 of 3 million -- would you agree that that represents almost a third of Duke's customers?

A. Subject to check, I think your math is pretty good.

Q. Thank you. And of those customers, only about 4 percent participated in demand response and EE programs?

A. No, that's not what it says.

Q. Well, let's go through each of the columns. The first column is low-income plus DR/EE incremental, and then we've got an explanation of what that means.

Would you like to -- in your words, what does that number reflect?

A. So I believe that's what we were talking about earlier, which are the programs that are only offered to customers that are eligible by being at 200 percent of the federal poverty guideline or below.

Q. Correct. And then what would the last column mean, low income plus any EE program?

A. So this is what I discussed earlier when you were trying to say that it was a very low percentage.

We have a very broad portfolio of residential offerings that can provide cost-effective energy savings to these customers. And my understanding of this table is those numbers that are reflected in the final column, the 608,699, would be customers that participated in other energy efficiency programs that did not have an income qualification associated with them.

Q. Like, for example -- and it's shown in that three asterisk points that they participated in behavioral programs like My Home Energy; isn't that what MYHER stands for?

A. Yes, it is one of our -- it is one of the cost-effective programs in our portfolio.

Q. And that's considered a behavioral sort of intervention as opposed to the smaller one that would be more long-term interventions?

A. No. You're over-characterizing the amount that that is. That number represents more than just the MYHER program. It includes the MYHER program.

Q. It's the incremental -- it's that first column plus the other, correct? Any low income plus other programs?

A. So it is -- if I'm reading the bullet plus, it's basically saying that it is not -- the second --

the two asterisks is it's not including behavioral programs that are still active. The third one is that are participating in programs including the MYHER program.

So they could also have participated in one of our lighting programs, in our save energy and water programs, in a program targeting HVACs. There's a number of other programs they could have participated in beyond MYHER. That's what I was getting at, is that's not simply the behavioral program.

Q. But the number at the bottom, in terms of percentage, there is about 4 percent -- 4.21 to be exact -- of below-income customers have participated in demand response or an energy efficiency programs that resulted in material improvements to reduce energy use?

A. Those, I believe, are the programs that are the -- as I said, specifically targeted to income qualification. It does not necessarily include, which the final column does, other programs that aren't tied to an eligibility requirement associated with income.

Q. Correct. And I don't want to argue with you on that point, but we make the point that, for targeted programs, that's what we're talking about right now, is 4.21 percent participation?

A. That's -- subject to check on the math, I believe that's what the column shows, yes.

Q. So we've got about 30 percent, or more than 30 percent of Duke's customers that are low income, but only 4 percent that are benefitting from the energy savings programs; would that be correct?

A. So I believe that is correct. But I think it's also important to point out that, during the 2020 period -- I'm sorry, 2021 period, for which this data is representing, we also had a significant interruption in our programs associated with COVID where we couldn't get into customers' homes. The programs we have that collaborate with the weatherization agencies struggled to get into homes to do weatherization, so I'm not sure that your point is an accurate one.

Those programs, in particular, were impacted by the pandemic and inability to get in to do the weatherization and energy efficiency measure installation in customers' homes who were income qualified.

Q. So -- and we can look at other data from pre-COVID times, but would you agree with me that the percentage -- I mean, we have two graphs here.

The percentage of low-income customers that

are benefitting from energy efficiency savings, whether it was during COVID, post COVID or pre COVID, is small relative to the total residential program?

A. No, I disagree with the -- with what you said.

MS. FENTRESS: I would like to object. I do believe Mr. Duff has explained how this chart is set up a number of times.

CHAIR MITCHELL: Okay. Ms. Cralle Jones?

MS. CRALLE JONES: We can move on.

CHAIR MITCHELL: Let me actually -- I'm gonna overrule the objection. I'm gonna ask you to answer the question and then move on.

THE WITNESS: Okay. So what you said was that that percentage represents a low percentage of energy efficiency savings that are realized by the roughly third of the customers that you did the math on, and isn't that a low number. And that's -- my -- my answer is consistent with what I said earlier, which is that that's only the savings that were realized through those income-qualified programs.

And those, as I said also, were

specifically hard hit because you couldn't get into customers' homes during 2021. I don't know what the numbers would be in other years, but it's really more important to look at that far column, because that indicates all the customers that are within that 980,000 that actually saw energy savings by participating in one of our other programs as well as the targeted programs.

Q. Let's move on. Back to your testimony. On page 31 you were talking about these enablers now that are necessary for the Carbon Plan to work. And at the bottom of that page now we're targeting expanded low-income programs. And on line 14, you address the question that's -- and I'll start with line 10:

"Many intervenors, including the Public Staff, recommended that the enablers identified in the Carbon Plan Appendix G should be approved in a separate docket or the mechanism. That the Companies do not disagree, but because of the complexity, scope, and goals of energy transition as achieved through the Carbon Plan," and this is where I want to focus, "the Companies believe there is value in the Commission acknowledging and affirming in its order in this proceeding that these identified enablers should be

adopted in the appropriate forum so that the Companies' work can be done," correct?

A. That's what it says, yes.

Q. And one of the ways that Duke seeks to expand low-income programs is by expanding eligibility to 300 percent of federal poverty guidelines; is that correct?

A. It was an identified enabler, yes.

Q. Okay. Was that a recommendation that was made by the Low Income and Affordability Collaborative?

A. No, it was not. The Low Income and Affordability Collaborative was focused on trying to identify ways to improve existing programs and bring new programs forward. It's important to note that the Companies actually done both in terms of bringing forward the DEP weatherization program, which was one of the formal proposals out of the Low Income and Affordability Collaborative, and it was filed in June. And it also developed a high energy usage pilot, through extensive stakeholder engagement and then vetting with the collaborative, that also was one of the proposals of the Low Income and Affordability Collaborative.

This identified enabler was put out as

something that could allow for more energy efficiency savings to be achieved in general. It's important to note that generally the income-qualified energy efficiency programs are not cost-effective. And so we wanted to identify it as an enabler, because it would allow for more non-cost-effective energy efficiency to be performed.

And hence, it's a balancing issue that the Commission needs to understand, because the net benefits often associated with low-income programs are not positive, meaning the net system savings are lower than the cost to achieve the program.

So we thought it was an important one to identify. We believe increasing the number of customers that could have, basically, free efficiency savings done for them would create more savings and help achieve the Carbon Plan's goals, but also wanted to recognize that it was identified not as an improvement of the existing low-income programs, but as something that the Commission could do and stakeholders could do with vetting with the Company to allow for more energy efficiency to help the Company meet its aggressive yet achievable assumptions that were used in the Carbon Plan.

Q. So my question was, was that a recommendation of the low-income collaborative, you said no, and that's what I needed.

A. My apologies.

Q. Okay. So now that you gave us your conversation about why you did that, did the Companies analyze -- have they analyzed monthly energy use for residential customers to determine an average kilowatt-hours-per-square-foot of use?

A. I believe that was done as part of the Low Income and Affordability Collaborative work subteam B, yes.

Q. And was that also done by income level?

A. I believe so, but I'm not positive on that one.

Q. Is there any data that you're aware of that you've shared in this proceeding or elsewhere to support that energy use per square foot by households above the 200 percent federal guidelines, meaning the 300 percent, is -- their use is higher than the average North Carolina customer?

A. I am -- there may be analysis, I'm not aware of it.

Q. Okay. And we've talked some about the

low-income collaborative report that was filed in a separate docket.

MS. CRALLE JONES: Chair Mitchell, that report is a huge report. It's 300 pages -- no, it's 450 pages, nine appendices. It's huge. What I would like to offer to the Commission and the panel is excerpts from that filing, if I may. It would be -- if we could pass that out and I'll go through. What I've included in this exhibit is the table of contents from that report, a list of all the appendices from that report, the title page. And it was filed on August 12th immediately prior to the testimony filed in this case.

It includes the recommendations of Duke Energy and Public Staff in that docket. And then it includes the analytics that we were just talking about, some of those pages. So in lieu of having to have the Commission dig through that report, I would offer these excerpts for discussion with the panel today as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 4.

CHAIR MITCHELL: All right. I don't -- I do not believe that has been passed out to us.

MS. CRALLE JONES: I'm sorry, I should

have.

CHAIR MITCHELL: Do you-all have it, Duke? Okay. All right. The document will be marked for identification as Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 4.

(Appalachian Voices Grid Edge Panel Direct Cross Examination Exhibit 4 was marked for identification.)

Q. Mr. Duff, did you participate in any of the LIAC joint collaborative sessions?

A. Yes, I did. I presented, actually.

Q. Are you familiar with the LIAC report?

A. I'll be honest, I have not read every page, but yes, I'm familiar with the report.

Q. And if you would, just walk with me through what we have here as Exhibit 4. The first couple of pages provides the table of contents for the report, the next page provides a table of contents of the appendices. And under that, that includes Exhibit F, which is the January 26th joint collaborative meeting breakout sessions. And I think that might have been one of the sessions that you participated in.

A. I participated in some of the breakout sessions, yes.

Q. And then Appendix C is the analytics. The next page there shows the final report and recommendations. It's the title page of the report. And then on pages 84 and 85, we've got the recommendations that the Company and Public Staff made to the Commission in that report.

Do you see where I am on that page?

A. Yes, I do.

Q. All right. And would you please read that first section beginning "as a result of," and read to the end of that first bullet point.

A. "As a result of numerous discussions and work provided throughout the affordability collaborative, Duke Energy and the Public Staff support the following recommendations for the Commission's consideration. The Commission should consider FPG at or below 200 percent when determining eligibility for programs to address affordability. As discussed in Section 4, this recommendation aligns with the majority of income-qualified programs identified in subteam B's research and analytics information completed for the LIAC."

Q. And that was the Company's recommendation at that point filed on October -- on August 12th, correct?

A. Yes.

Q. All right. And then on August 19th, when your testimony is filed, then your recommendation is you go to 300 percent of the federal poverty guidelines?

A. So I think you're blending different things. The Low Income and Affordability Collaborative was focused on working through the existing and potentially new programs. The Carbon Plan work which started earlier in the year and was -- I provided my testimony supporting, is really more related to what could the Company do and get approval from the Commission to do to allow for more energy efficiency to be achieved.

And so increasing that threshold would allow for more energy efficiency to be achieved than otherwise wouldn't be cost-effective for a broader swath of customers. It was not -- the Carbon Plan recommendation was not tied to the Low Income Affordability Collaborative, it was put forward as an identified way for the Commission to consider -- not necessarily approve, but for it to consider it as a means for the Company to achieve more efficiency.

As I said earlier, because it's not cost-effective, the Commission would need to weigh that

and understand the potential impacts it could have on long-term customer bills since the benefits do not exceed the cost generally for income-qualified programs.

MS. CRESS: Chair Mitchell, if I may, I'm gonna object to this line of questioning. This is a report that's been filed in a different docket. It is pending before the Commission. Intervenors have not had an opportunity to comment on this report, and Ms. Cralle Jones has not provided the entire report, I understand because it's lengthy.

The Commission can certainly take judicial notice of the fact that the report has been filed in a different docket, but this is something that is open and pending before the Commission in a different docket and intervenors have not had a chance to be heard on the report. So for that reason, I would object to this line of questioning.

MS. CRALLE JONES: I think it is -- in the testimony here, they have asked for targets that are different than have been sought in this low-income collaborative that has been worked on

for months. And in his testimony, we've talked about how targeting expanded low-income programs is important, and I would like to have a chance to go through these limited analytics just to show how focusing on low income within the current definition would target both energy load and energy peak, which we've talked about constantly in this proceeding as being key to the Carbon Plan.

CHAIR MITCHELL: All right. I'm gonna overrule the objection. Go ahead.

MS. FENTRESS: Madam Chair, if I may. Duke Energy is willing to stipulate that the Low Income Affordability Collaborative report that is filed and pending before this Commission says what it says, if that helps us move on.

CHAIR MITCHELL: Okay.

MS. CRALLE JONES: I appreciate that. I would like to do two questions.

CHAIR MITCHELL: Okay.

MS. CRALLE JONES: Highlight two of the pieces here.

CHAIR MITCHELL: All right. Move ahead.

Q. So if you'll go to the first graph that's in that exhibit, average monthly usage per square foot by

income for housing type. The bars in yellow are the LIEAP CIP customers.

First of all, do you know what that stands for?

A. It's low -- I don't know the --

Q. I think it's the low-income energy assistant program or crisis intervention program customers. So those are folks who are most in need.

A. Yeah.

Q. Does this graph clearly show that those folks have a higher monthly usage per square foot than any other customer served by?

A. Yes. Based off of this graph, I think your statement is correct.

Q. And then real quickly to the next one, it's actually keeping my promises to the Commission. Let's go to the one that says median total monthly bills on page 119 at the bottom.

A. I've got it.

Q. Those customers, the LIEAP CIP customers, face a significantly higher total burden, particularly in winter.

Is that accurate statement based upon this graph?

A. Without even interpreting the graph, I can say that that's what the bullet says, yes.

Q. And haven't we talked about how, both for DEC and DEP, what is critical at this point in time is planning for winter peak?

A. So I think it's important that you would plan for the overall load, but I think with respect to -- based off of talking to the modeling team, I believe winter peak is the source for resource planning.

Q. Correct. So if we can lower the peaks in the winter, that will affect overall planning, correct?

A. It could.

Q. Okay. And now if you'll go to the last chart in that section, it is peak load -- peak day load shape by season and income segmentation.

Doesn't this graph, especially if you look on the winter both for DEC and DEP, that if you target those customers, that -- the LIEAP CIP customers who are most struggling with affordability, then you also target that excessive energy use or that higher energy use in the winter?

A. You know, I think it's a little bit of a broad interpretation you're asking me to make. I'm looking at four graphs. I will agree that the LIEAP

CIP line is the highest bar on the DEC and DEP winter graphs, if that's what you'd like.

Q. And the 300 percent of income would be that lowest bar, lowest use?

A. So I think that's important on all these to point out. Again, I think you're making an oversimplification because this -- the bar is greater than 200 percent, meaning it includes everybody. The 200 to 300 percent was not specifically carved out in these, so I can't answer your question, because that 200 percent represents everybody above 200 percent, not just 200 to 300 percent.

Q. But there's not a doubt that the LIEAP CIP customers have a higher energy usage and a higher energy peak time.

So wouldn't it be a reasonable step to target energy efficiency programs towards these customers that are the ones most struggling with affordability?

A. So I -- first I would say, on all the charts, it's above 200 percent. So that same inaccuracy is present. I can't accurately answer the 200 to 300 percent because that segment isn't carved out. You have everybody above 300 percent also included in these graphs. So first I want to be clear, I can't answer

that.

But I will say that the Company doesn't disagree that it's important to target these customers below 200 percent of the federal poverty guideline, and that's why it's recently filed a new pilot and a new weatherization program for DEP that specifically target that group of customers.

Q. So we can agree that targeting these customers who most struggle to afford their bills is an efficient way to reduce load and address energy peak?

A. I would be careful on saying efficient if you're defining efficient as cost-effective. I just don't want overgeneralizations being made. It is a way to achieve energy savings and peak-demand reductions to benefit the utility system, but it may or may not be cost-effective.

Q. And one last question, and may end up having to talk with another panel, is, are energy efficiency programs required to be cost-effective under current regulatory provisions?

A. So the Commission has the latitude and has done so in the past when the Company has asked for approval of programs that are targeting low-income customers that are not cost-effective. That's where I

said it's really important to work with the Commission on that, because they need to understand that, in general, non-cost-effective programs will likely provide long-term upward pressure on bills because the benefits don't exceed the cost.

Q. And when you analyze the benefits, does that include energy benefits as well as non-energy-related benefits?

A. For the purposes of cost-effectiveness, while we can report non-energy benefits, they're not factored into the cost-effectiveness tests that are used to determine cost-effectiveness for the purposes of program approval.

Q. All right. No further questions. Thank you.

CHAIR MITCHELL: All right. CIGFUR?

MS. CRESS: Thank you, Chair Mitchell.

CROSS EXAMINATION BY MS. CRESS:

Q. Good morning, Mr. Huber, good morning, Mr. Duff. Christina Cress here on behalf of CIGFUR.

MS. CRESS: First I'd start by asking Chair Mitchell if the Commission could take judicial notice of the LIAC report filed in the other dockets in its entirety so that the Commission has the full context for the excerpts

that were brought up in Ms. Cralle Jones' cross examination.

MS. FENTRESS: We have no objection to that.

CHAIR MITCHELL: Okay. The Commission will take judicial notice of the -- what we are referring to as the LIAC final report that was filed on August 12, 2022, in Dockets Numbers E-7, Sub 1213; E-7, Sub 1214; E-7, Sub 1187; E-2, Sub 1219; and E-2, Sub 1193.

MS. CRESS: Thank you, Chair Mitchell.

MS. CRALLE JONES: Excuse me. One clean-up matter. Do I need at this point to ask that these exhibits be moved into the record or are we saving that for the --

CHAIR MITCHELL: We'll save that for the end of the panel.

MS. CRALLE JONES: Thank you.

Q. Mr. Duff, you testified that, on August 12th, the LIAC report that was just discussed was filed with the Commission and it contains some program recommendations; is that right?

A. (Tim Duff) It contained a number of recommendations, yes.

Q. And just to be clear, the Commission has not ruled on that report?

A. Not to my knowledge, no.

Q. And, in fact, intervenors haven't even had an opportunity to provide comments on that report?

A. No. Stakeholders were engaged in the preparation of, but no, they have not filed comments, to my knowledge.

Q. That report did not represent a consensus position of the stakeholders; is that fair to say?

A. That's correct.

Q. I'd like to point you now to your direct testimony filed in this docket.

Is it fair to say that you are the person I should be addressing questions about customers' self-generation to, or would that be Mr. Huber?

A. I think that's Mr. Huber, but if I can lend anything, I will.

Q. Excellent. Mr. Huber, I'd like to start by introducing the Companies' response to CIGFUR Data Request 4-11.

MS. CRESS: And with the Chair's permission, I will request that this document be marked for identification as CIGFUR II and III Grid

Edge Panel Direct Cross Examination Exhibit Number 1.

Q. And, in fact, Mr. Duff, you are the one who appears to have responded to this data request, so I'm gonna ask once again if I should direct this question to you.

CHAIR MITCHELL: All right. Let me -- I will mark the document, please. The document will be marked for identification as CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit 1.

MS. CRESS: Thank you, Chair Mitchell.

(CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit Number 1 was marked for identification.)

THE WITNESS: I did respond to this, and I would be glad to answer the question on response.

Q. Great. Thank you. Can you help us understand what it means to say that Duke does not believe there was an enabler associated with eliminating or altering the 1-megawatt net metering cap?

A. Sure. So in our stakeholder engagements around the Carbon Plan, as well as in Appendix G where we identified potential enablers to achieve the level

of Grid Edge and Customer Programs in there, we did not identify an enabler associated with eliminating or altering the net metering cap.

Q. So what enablers would be needed, hypothetically, in order to alter or eliminate that net metering cap?

A. So again, I don't -- I can't speak to the enablers required to eliminate the cap. My guess is that would require Commission approval. But what this was talking about was what the Company had identified as enablers to achieve what the assumptions were in the Carbon Plan. But if you're asking about what would have to occur to eliminate that cap or alter it, that's probably better directed to witness Huber.

Q. Witness Huber, then, I will ask you to answer the question, please.

A. (Lon Huber) Can you restate the question? I want to make sure I'm hitting right on it.

Q. What enablers would be necessary in order to alter or eliminate the 1-megawatt net metering cap?

A. Yeah. So I can speak to maybe some of the policy in tariff-related enablers, but to the extent that there's technical grid enablers, I can't speak to that.

But what we put in the comprehensive rate design report that we filed in front of the Commission is the fact that the Commission could potentially lift that cap. So it could be a policy and tariff change. But it would have to be done in conjunction with other rate design modifications to ensure proper cost recovery and alignment to -- to cost to serve.

Q. Thank you. Has Duke received feedback in at least one stakeholder process over the past year that increasing or eliminating the 1-megawatt net energy metering cap would increase the penetration of on-site solar for large industrial customers?

A. Yes.

Q. And so just to be clear, is Duke's position that regulatory approval would be necessary to alter or eliminate that cap?

MS. FENTRESS: I'm gonna object. Mr. Huber is not an attorney. That appears to be a legal question.

MS. CRESS: Withdrawn.

Q. Moving on, and this line of questions is for either or both of you.

Your testimony addresses the Companies' demand-response programs generally and specifically as

part of the Carbon Plan; is that right?

A. (Tim Duff) I think that's fair to say.

MS. CRESS: I'd like to introduce the Companies response to CIGFUR Data Request 1-26, and with the Chair's permission, I'll ask that it's marked for identification as CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit Number 2.

CHAIR MITCHELL: All right. The document will be marked for identification purposes as CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit Number 2.

MS. CRESS: Thank you, Chair Mitchell.

(CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit Number 2 was marked for identification.)

Q. Gentlemen, let me know when you're ready.

A. (Tim Duff) I've got it.

Q. A new emergency interruptible program was not assumed as part of the demand-response suite in the Carbon Plan; is that right?

A. That's correct.

Q. And the Companies have engaged with stakeholders regarding new demand-response programs in

multiple different stakeholder processes over the last year, year and a half, including CIGFUR; is that correct?

A. To my understanding, yes.

Q. And as part of that engagement with CIGFUR, did CIGFUR provide feedback in at least one of those stakeholder processes that certain member companies are quite interested in emergency interruptible demand-response programs?

A. Yes, I believe that's a fair statement.

Q. And also as part of that engagement with CIGFUR, has CIGFUR shared the fact that such companies participate in an emergency demand-response program in other jurisdictions?

A. I don't recall that, but subject to check with the people that were in that meeting, yes, I would say I agree.

Q. Mr. Huber, I'll direct the question to you, then.

A. (Lon Huber) I believe I recall some discussion on that, yes.

Q. And in those other jurisdictions where CIGFUR member companies participate in these kind of programs, they show up when their load is called and they shed

their load pursuant to the terms of the program; is that fair to say?

A. (Tim Duff) I can't speak of customer participation in other state programs, but subject to check, I'll accept -- I'll accept what you're saying.

Q. Can you help us understand why a new emergency interruptible program was not modeled as a dispatchable resource for planning purposes in the Carbon Plan?

A. So the -- I can't speak to the exact reason the modeling team did not include it. What I can say is, at the time the Carbon Plan was being prepared, we didn't have enough granularity on that type of a program.

The Company, as you said, has been working with CIGFUR and other parties to develop a type of program that would be similar to the recommendations of CIGFUR. It's important to note, though, that that program has to be designed around North Carolina and our cost-effectiveness screens, as well as our rates that are used to develop it. And we actually will -- believe that we will be presenting -- well, it's on our agenda for our collaborative meeting to bring forward that program design to share with the collaborative,

and then the Company plans on filing it.

But with respect to the fact that it's -- it was not specifically included in the Carbon Plan, my guess is because we didn't have enough detail or understanding of what it was to include it in the Carbon Plan.

Q. Thank you. One last line of questioning and then I'm done. I'd like to ask about electric vehicle managed charging rate design.

Is that more appropriate to direct to you, Mr. Huber?

A. (Lon Huber) Yes.

MS. CRESS: And I'd like to introduce one final exhibit. And this is the Companies' response to AGO Data Request 4-15. And with the Chair's permission, I'll request that it's marked for identification as CIGFUR II and III Grid Edge Panel Direct Cross Examination Number 3.

CHAIR MITCHELL: All right. The document will be marked for identification as CIGFUR II and III Grid Edge Panel Direct Cross Examination Exhibit Number 3.

(CIGFUR II and III Grid Edge Panel Direct Cross Examination Number 3 was

marked for identification.)

MS. CRESS: And just anticipating a possible objection by Ms. Fentress, I just want to let you know that I did not include the embedded attachments, simply because that is germane to a different subpart of this data request that will not be relevant to my line of questioning.

MS. FENTRESS: I don't object at this time.

CHAIR MITCHELL: I'm glad to learn that Ms. Fentress doesn't object. All right. Go ahead.

MS. CRESS: All right. Thank you.

Q. Mr. Huber, according to the response to this data request, the Companies did not consider managed charging programs and vehicle-to-grid capabilities as part of EV load forecast in the Carbon Plan; is that right?

A. Honestly, I'm -- I am not exactly sure. I did not respond to this. This is more -- seemed to be more of a modeling question about net load forecast and determining that net load forecast.

MS. CRESS: Would counsel for Duke object to postponing this line of questioning for the rebuttal examination of the Modeling Panel?

MS. FENTRESS: We do not object.

MS. CRESS: Then I will save this line of questioning.

MS. FENTRESS: And we will also -- I'm sorry. We will also stipulate that the answer does say managed charging programs and V2G capabilities were not considered as part of the EV load forecast. But as Ms. Cress notes, Mr. Kalemba, in particular, testified as to the modeling, and the question would probably -- or any questions beyond that would probably be best to him.

MS. CRESS: That's fine. Happy to explore this with them. Thank you. Nothing further for this panel.

CHAIR MITCHELL: All right. Next up we've got NC WARN. We will break for our morning break at 10:30.

CROSS EXAMINATION BY MR. QUINN:

Q. Good morning, gentlemen. My name is Matthew Quinn. I am the lawyer for NC WARN and Charlotte-Mecklenburg NAACP. I hope you're doing well this morning. Appreciate you being with me.

We've spoken a lot during the course of this hearing about Duke's promise to shrink the challenge.

And Ms. Cralle Jones talked to you earlier about a section of your direct testimony that I also wanted to point out to you. She's already done it. But during your direct testimony on page 5, you characterize Duke's promise to shrink the challenge as being a first pillar of energy transition in the Carbon Plan process.

I think I got that right. Is that a fair characterization that --

A. (Lon Huber) Yeah, that's a fair characterization.

Q. And the words that stand out to me there the most are the words "first pillar."

What do you mean when you say that the promise to shrink the challenge is the first pillar? What does that mean?

A. (Tim Duff) So I'll let Mr. Huber add anything to this, since it was really a question in testimony to him. But I would say that we -- we prioritized identifying resources to shrink the challenge or reduce the necessary more traditional supply-side investment associated with reaching the targets of the Carbon Plan.

Q. And I would guess that y'all have both read most or all of Duke's proposed Carbon Plan; is that

fair to say?

A. I'll be honest, really, my focus was on the section that I was responsible for.

Q. Okay. I'm surprised by that, but okay. Well, fair enough.

I mean, is it fair, though, to say that, consistently throughout the Carbon Plan, Duke places the promise of shrinking the challenge as a first priority? That's a pretty consistent theme throughout the Carbon Plan, right?

A. Subject to check, I'll say that's fair. I know in our section it was.

Q. And it would be difficult, I would think, for Duke -- and let me know if you disagree.

It would be difficult for Duke to meet its carbon emission reduction goals without shrinking the challenge, right?

A. We think, in order to achieve all of, kind of, the goals of affordability, executability -- I'm gonna freeze up and forget the other -- reliability, and meeting the targets, those were, kind of, the four things. And so I think we definitely identified that shrinking the challenge through Grid Edge and Customer Programs helps us achieve those four goals and is an

important requirement.

Q. Okay. Very good. Now, as part of this promise to shrink the challenge, Duke has a net energy metering program, correct?

A. I'm gonna say yes, but then I'll turn over to witness Huber.

A. (Lon Huber) I would say Duke has a net metering program. And it -- from my understanding with what I heard from the modeling team, the forecast that -- the load forecast that they used assumed adoption from that net metering program for the Carbon Plan.

Q. Okay. And net energy metering is an important part of Duke's attempt to meet its carbon emission reduction goals as required by House Bill 951; is that a fair statement? I'm not trying to be controversial, but, I mean, is that a fair statement?

A. I mean, it's hard by -- you know, when you say "important," because it's a bit subjective. I would say it is a component. I would say rooftop solar is a component to meeting the Carbon Plan.

Q. And frequently individuals that have rooftop solar on their roof, they also participate in Duke's net energy metering program?

A. Correct.

Q. Okay. Now, my understanding is that there is a separate docket in which Duke has proposed a new net energy metering tariff, right?

A. Yeah. Duke has filed for a new program, Smart Saver Solar Program, and it was broadly supported through, you know, variety of different solar -- solar companies, industry lobbies, environmental groups, and so forth. And then there's a companion piece called the Smart Solar Saver Program as well.

Q. Okay. So you just mentioned two dockets.

I mean, so first of all there's the Sub E-100 -- I'm sorry, the E-100, Sub 180 docket which is the tariff, right?

A. Subject to check on those numbers, yes.

Q. Okay. And then separately there is the smart saver incentives docket, correct?

A. Correct.

Q. And by the way, I should have said in the beginning, my intent is not to go through all the minutia of these different dockets. I'm trying to be high level because I know they're part of a separate docket. Okay?

A. Okay.

Q. Okay. So, you know, well, first of all, you mentioned the broad consensus. So there's one thing I just want to address at the front end.

Specifically with respect to the smart saver docket, you're aware I'm sure that the Public Staff has not supported that program, correct?

A. I am aware, yes.

Q. Okay. Very good.

CHAIR MITCHELL: All right. Mr. Quinn, let's pause there. We'll take our morning break come back 10:45. Let's go off the record, please.

(At this time, a recess was taken from 10:30 a.m. to 10:45 a.m.)

CHAIR MITCHELL: All right. Let's go back on the record, please. Mr. Quinn, you may continue.

MR. QUINN: Thank you, Chair Mitchell.

Q. All right. So where were we at? So what I was trying to do is start a process of comparing Duke's promise to shrink the challenge to its net -- actual net energy metering proposals. And we were talking about the two proposals that Duke has made in separate dockets.

Are you with me so far?

A. (Lon Huber) Yes.
Q. Okay. Good. So we have in the one docket, the smart saver docket, there's been an incentive program that has not met support from very material participants; is that fair to say?
A. I would characterize it as one very important participant.
Q. Okay. The Public Staff?
A. Yes.
Q. Okay. Very good. And then there's a separate docket, which I will just call the tariff docket, which is E-100, Sub 180, correct?
A. Take your word for it, yes.
Q. I'm really just giving the docket number for the record more than anything, and to show that I got it memorized.
A. That's impressive.
Q. Not really. Okay.
So in the tariff docket, Duke has proposed a number of changes to its net energy metering tariff, correct?
A. We are -- we are proposing a number of changes, yes.
Q. So among other changes, Duke is proposing a

new minimum monthly bill upon net energy metering customers, right?

A. That is one of the changes, correct.

Q. Okay. And this new minimum monthly bill, it's a charge that's gonna apply -- if the tariff were to be approved, a charge which is going to be -- which is going to apply to net energy metering customers that does not exist under the present landscape, correct?

A. Well, it's a little bit nuanced. So as a -- as a mechanism that is, you know, a part of the tariff, yes, it's new; but as a customer that is -- that would potentially be on the tariff, they might never see that charge. So there's a little bit of a nuance there of some customers that go solar may never see that charge.

Q. Yeah. Mr. Huber, I'm a little surprised to hear that.

Would you agree with me that the average savings of a net energy metering customer, even under Duke's math, is going to go down under the new tariff? Would you agree with me on that?

A. So if you're looking on average, and again, there's -- if a customer does not respond to the price signals, which we've set to critical peak pricing and timed used price signals, they do not respond to those

price signals, they do not shape there system size any differently to respond to the new price signals. And so if they retain historical average PV system size, average customer, average home, average load, then I would agree with you the compensation would be -- would be reduced.

Q. Okay. So just to try to shorten that just a little bit, Duke understands that, under its new net energy metering proposal, the average savings for net energy metering customers is gonna go down; would you agree with me on that?

A. So again, this is where the two dockets are important to see, you know, how they all balance out, right? Because you've got an incentive. You also have price signals that now customers can respond to. And so there's nuances there. But, in general, for the rate design side -- and again, we were -- you know, this is all responding to statute, right? The rate design side is now aligned to cost to serve. It's directly linked to that.

And so in doing so for those average customers with all the caveats I mentioned, there will be a reduction in compensation if you just look at that tariff in isolation.

MR. QUINN: Okay. At this time, if I may, I'd like to pass out a cross examination exhibit, which I'll pass it out and then identify it.

CHAIR MITCHELL: All right. Somebody help Mr. Quinn pass this exhibit out so we can get to work identifying it.

(Pause.)

CHAIR MITCHELL: All right. Document's going to be marked for cross examination purposes as NC WARN Grid Edge Panel Direct Cross Examination Exhibit 1.

(NC WARN Grid Edge Panel Direct Cross Examination Exhibit 1 was marked for identification.)

Q. Mr. Huber, were you involved at all in Duke's responses to data requests in the net energy metering tariff docket?

A. I'm sure I have had a role in some of the discovery requests.

Q. Okay. Have you seen -- what I've placed in front of you, Exhibit 1, is Duke's response to NC WARN's Data Request Number 4-4 in the net energy metering tariff docket.

Does that appear to be correct, sir?

A. That appears to be what it is, yes.

Q. Okay. And in this data request -- and just for purposes of efficiency I'm gonna try to summarize it, and if I summarize it inaccurately, certainly let me know.

But in gist, what we asked in this data request is for work papers supporting the Companies' revenue reduction estimates under both the current net energy metering tariff and the proposed tariff.

Does that appear to be correct, Mr. Huber?

A. Yeah. I mean, I'm going to admit, I have limitations on what this is getting at, but --

MS. FENTRESS: I'm gonna object. The data request does not identify who responded to it. I don't know why that is, but it is in another docket that is pending before the Commission. To the extent this is helpful, we will stipulate to what we have filed in that docket. But I would object to continuing to ask Mr. Huber about a data request response that he is not necessarily familiar with.

MR. QUINN: I'm gonna be high level, and I'm gonna get off this exhibit quite quickly. But

I think -- and Mr. Huber might be able to correct me. I think the high-level questions I'm gonna ask, he's gonna have familiarity with based on his deep involvement with the net energy metering.

CHAIR MITCHELL: I'm gonna overrule the objection recognizing, though, that Mr. Huber didn't prepare this response. So you can proceed.

MR. QUINN: Very good.

Q. So, Mr. Huber, if you could look at the Excel spreadsheet, which is the second page of this exhibit. And at the top right-hand corner you see RS current savings.

Do you know what that refers to?

A. I can only make an assumption, and my assumption is it could -- it could be a modeling of some system size on the current RS -- some PV system size on the current RS, and some -- and the financial savings. But again, it is a guess.

Q. All right. Are you familiar with what the RS tariff is?

A. Yes.

Q. Okay. And that is -- that is one of DEC's retail tariffs which has an NEM component to it, correct?

A. It's one of our standard residential rates, yes, and then there is a net metering rider that stipulates everything else.

Q. Rider is the word that I could not come up with that I was looking for. Okay.

And you say it says RS current savings, $909.17, right?

A. That's what it lists here, yes.

Q. Does that sound correct to you under the current landscape, that's the -- the RS current savings; does that sound about correct?

A. That's a tough one.

MS. FENTRESS: I'm gonna object. He has indicated he didn't know the answer to the previous question about what RS stands for, and he did not -- was not the preparer of this response.

MR. QUINN: If I may have the Commission's indulgence, I'll ask one more question about it and I will move on.

CHAIR MITCHELL: All right. Ask your next question.

MR. QUINN: Very good. Thank you.

Q. Mr. Huber, in the box in the top right-hand corner, if you were to assume hypothetically that what

this box is saying is that, under the current RS current -- under the current RS schedule, the savings for net energy metering customers is $909.17, but under the proposed tariff, it drops down to $643.11, does that sound correct to you based upon your deep involvement with Duke's net energy metering program?

A. So again, it just depends on the system size that was modeled. I'm not sure if this is average or if this was an oversized system. And so I'm just -- I have some limitations of what I can say. And, you know, again, I think as I -- as I stated before, if you hold all these things equal, customer doesn't respond to any of the new price signals, they keep the same system size or they oversize it, there would be a decrease in compensation if you just look at the tariff in isolation.

Q. All right. Thank you. That gets to, kind of, the nut of what I was looking at. So then let me ask you this, then.

So on the one hand we have Duke's promise to shrink the challenge, right? Okay? And on the other hand we have net energy metering, okay? And net energy -- was that a yes?

A. Yes.

Q. Okay. And net energy metering is an important part of shrinking the challenge, correct?

A. I know exactly where you're going, and I can speed it up if you just get to the punch line. But as I said before, PVs are -- rooftop solar is a component to the Carbon Plan.

Q. Okay. And so on the one hand we have net energy metering, which is an important part of shrinking the challenge, and we have NEM savings going down, and on the other hand we have a promise to shrink the challenge; is that right?

A. So let me just lay some context, because I think it will help speed this whole thing up. We took a holistic approach to this issue, and context is important. You have statutory requirements of 589, 951 to align solar to -- rooftop solar transaction to cost to serve. So instead of doing what a lot of other, say, utilities have done in the country where they just say, you know what, we're not gonna talk to stakeholders, or maybe just a few and just, sort of, check off the box, we'll just put a big demand charge or big fixed charge and call it a day, there's our reform.

Instead of doing that, we got all the

stakeholders into a room, we had honest frank discussions, transparent exchanges of data, said how can we make this work. How can we meet the obligations under the statute in a way that's the least impactful mechanisms for the industry?

So the solar industry might have a hard time with demand charges, but maybe they can work with the minimum bill. And if you structure them correctly, they get to the same outcome anyway.

So we worked with stakeholders, and you can see the outcome of this with having the Solar Energy Industries Association on board: Vote Solar, NCSEA. Major -- you know, local solar installers recently. So major parties signing on to this.

And it shows that we came up with something that, again, has the least impact. In fact, sets up the rooftop solar industry to be a sustainable and, in the long run, vibrant part of the energy ecosystem here in North Carolina.

And so we can't have, you know, shrink of challenge at no matter the cost. There's always boundaries, right, which Mr. Duff mentioned the core tenets of the approach on 951.

So that is the context of what we -- we did

with stakeholders to put something that is pretty innovative and I would say strikes that right balance of making sure we have a sustainable growing solar industry in the long run with the statutory challenges that were put in front of us.

Q. And I'm sure you would -- and I'm sure you understand we're never gonna agree on striking the right balance and whether that was achieved. But let me just ask a more, kind of, basic question. You kind of hit on the consensus issue. Okay.

You understand there are a lot of parties to the net energy metering tariff docket who did not -- were not part of that consensus, correct?

MS. FENTRESS: Again, I object. This is a pending docket in another docket, and the number of parties that were involved is probably available on the Commission's website.

MR. QUINN: In fairness, I think the witness opened the door to that issue.

CHAIR MITCHELL: I will allow the question, but let's move on. Stick to --

Q. Okay. So then let me try to just be -- very quickly respond to that -- or not respond to that, ask you a question about that, and then we'll move along.

So you would agree, I'm sure, that there were a number of parties to the net energy metering tariff docket that were not part of that consensus, correct?

A. So here's the thing. I would honestly need to look, because I would need to see who's intervened, who hasn't. I would just, again, state that the parties that signed on were significant major parties, parties representing the entire solar industry. Sun -- you know, and solar -- you know major solar installers.

Q. Let me -- Mr. Huber, I'm, kind of, winding down here, so let me just ask you this.

If it's important, as Duke says it is, to shrink the challenge, Mr. Huber, is it a good thing or is it a bad thing to be taking an important part of the Grid Edge Program, net energy metering, and reducing the savings of net energy metering customers?

A. Okay. So let me just take a step back, because that has a lot of subjectivity to it. A good thing or a bad thing. We could get into philosophy and so forth. So let me maybe take a step back and think holistically, what did we do?

We are proposing, right -- and so this is pending -- proposing to get more accurate price signals to solar adopters.

MR. QUINN: Your Honor, I don't think this answer is responsive to my question.

CHAIR MITCHELL: Let's let him answer the question.

THE WITNESS: More accurate pricing to solar adopters. Encourage new forms of technology coupling. So instead of just solar, encouraging dispatchable resources in the customer's home. That's all part of this reform.

And so to me, aligning the price signals so that we do not have a subsidy in cost of serve, setting this new framework up with accurate signals that align to the net peaks and everything like that, that is long term and a good thing. It is setting the industry up for success and creating economic viability that does not burden nonparticipants.

So all that is positive. Customers now have -- well, I would say, if approved by the Commission, customers would have the opportunity to go solar, to respond to new price signals that give them additional ways to save, and then if smart savers approve, to then further couple new technology to the entire transactions to bring

further savings.

So all that, to me, is a positive long-run policy that will take us, with tweaks, to 2050. The current net metering program, as structured -- and this is why you see so many fights in other states -- it's not scalable financially. That's why there are so many fights. And that's why states that have had a lot of rooftop solar have either reformed it or in the process of reforming it, because it does not scale.

And so if we want long-term successful policies that reduce carbon that do not bring undue subsidization, then this -- the net reforms we've put forward again with state -- you know, broad stakeholder support are a positive thing.

Q. And, you know, Mr. Huber, I appreciate that, but I do just want to get back to mention, I think you made earlier.

I mean, under Duke's proposal, the savings of these net energy metering customers are going down, right?

MS. FENTRESS: I'm gonna object. I believe that question has been asked and answered. And I also believe we have strayed far from Docket

E-100, Sub 175 into Docket Number E-100, Sub 180.

CHAIR MITCHELL: I'll sustain the objection.

MR. QUINN: I'm done. Thank you very much.

CHAIR MITCHELL: All right. Next up we have got Mr. Rouse.

CROSS EXAMINATION BY MR. ROUSE:

Q. Good morning. How are -- just glad to be here. And I'm the non-lawyer on the panel, so bear with me. And good morning to the Commissioners. And it's great to be talking about shrinking the challenge and the great work that you guys are doing. Important work that you guys are doing over there. I'd like to, kind of, take a holistic point of view on this, and I'm gonna talk about it from the framework of the main goals of the Carbon Plan. Carbon reductions, affordability, reliability, and executability. Because I think you can view what you're doing in terms of that main framework.

And to me, what tells a story, and what I'd like you to do is turn in your testimony to, I think, page 19 and 20, which are two graphs, Figures 2 and 3, and let -- if you don't mind, beg my indulgence, I live

in Asheville, so we'll talk about depth as -- so Figure 3.

MR. ROUSE: And for people who don't have that right in front of them, I'll tell you that that shows the usage per customer and what is expected --

MS. FENTRESS: Madam Chair, I believe the witnesses are available for cross examination, if they want to address what this may show in their testimony.

MR. ROUSE: Trying to set the stage.

CHAIR MITCHELL: Just get to your questions, Mr. Rouse.

Q. So could you tell me what that graph shows?

A. (Tim Duff) Sure. The graph was actually put in in response to concerns about how the utilities factored in utility energy efficiency program roll-off. But what the graph is showing is that what the load forecast is expected to do when you factor in the utility energy efficiency as well as with and without EVs.

So it's showing the impact or increase that the adoption of EVs is expected to have on the load forecast. And when I say "load forecast," this graph

is specifically showing usage per customer.

Q. And is that usage per residential customer or is it all customers, so it would include industrial customers and commercial customers in that mix?

A. I believe it's that -- it's the latter of those two.

Q. Okay. Well, let's just assume that it does.

And so do you think that, when you were looking at residential, commercial, and industrial as separate classes, that they would all show the same trend, more, less?

A. So -- so again, I probably -- I think looking at the scale now, I doubt it's representing industrial customers. It's probably on the residential side. The table doesn't specify, but I do think that, if your question is do we anticipate electric vehicle adoption impacting all classes of customers, I would say yes.

Q. Okay. Now, looking just at the bottom line, it shows a gradual decline in usage per customer; is that correct?

A. I mean, it seems pretty consistent to me, but it goes down over time, yes.

Q. And this usage per customer, just to confirm, is after the Companies' energy efficiency programs?

A. Yes.

Q. Okay. Is it also after additional electrification of end uses? For example, people converting from gas and oil to electric heat?

A. So my understanding is that's factored into the base load forecast, but I'd have to confirm that. I believe this is just isolating the impact of the incremental electric vehicle adoption.

Q. Right. But you're showing -- you're showing the usage --

A. Correct.

Q. -- before electric vehicle adoption and then after, correct?

A. I believe that's what it's showing.

Q. Right. So this would factor into -- the other aspects of the forecast would factor into the before?

A. The -- whatever's in the base forecast, yes.

Q. So -- so there's electrification in here, but this is obviously before the changes in the Inflation Reduction Act that might change the pattern of electrification and electric vehicle adoption?

A. You'd probably be better served asking the modeling team that. Based off the timing of when this

was prepared, I think that's accurate. But I believe the question would be more appropriate for the modeling team.

Q. But this is your exhibit; is that correct?

A. Correct. It was included for the purposes of discussing utility efficiency programs roll-off.

Q. And what you show is that, with the electric vehicle forecast that you have, that actually usage per customer by 2037 will still be lower than it is in 2023; is that correct?

A. Yes. When you look at them, it's designed to show that the adoption of electric vehicles, while increasing the usage per customer, does not offset the general decline in usage.

Q. And that general decline in usage per customer, how much of that is due to the trends of increased efficiency in the economy versus the Company electric efficiency programs?

A. I don't have the necessary detail. I speak with respect to understanding of the utility efficiency programs. You'd have to talk to the modeling folks to understand the naturally occurring efficiency.

Q. Okay. I'm wondering if I -- okay. If you turn on this testimony a few pages forward to -- I

think it's page 26, Table 1, what we have here is 2025, 2030, 2040.

And you have that top line, is that -- that's the -- that's -- that is -- that top line is the IRP base case that's consistent with the previous graph we were looking at; is that correct?

A. I -- I think that the graph that we're looking at previously is the Carbon Plan. The top line here is the IRP. And this only isolates utility energy efficiency programs.

Q. So this has not been updated for the Carbon Plan? This graph has not been updated for the Carbon Plan?

A. This table is not intended to show what was included in the Carbon Plan. This table is intended to show -- one of these cases was included in the Carbon Plan, but these are other points of reference with respect to the magnitude of the utility energy efficiency portfolio.

Q. Okay. Since you -- I guess I'll ask you a question about the IRP table because it's conceptual. It's in your -- it's in your testimony that was filed. The 2040 cumulative reduction versus 2022 total retail sales column shows a 2.9 percent reduction in total

energy use.

Is -- could you explain what that number means?

A. So that -- so that's showing what the cumulative reduction associated with the utility energy efficiency portfolio programs would be. But when you look out to 2040, there is a significant amount of utility efficiency that has rolled off. So while there's cumulative savings that were provided previously, those are now reflected in the natural-occurring piece of the load forecast.

My testimony earlier went into it -- into detail explaining how roll-off works. If you look at page 22, it discusses that roll-off.

Q. And is it -- is it right to say that what you're saying with this is that in 2040, if we had done nothing, we would only be a little bit higher, 3 percent higher in the usage forecast? I mean --

MS. FENTRESS: I'm going to object. I don't understand who "we" is referring to in that question.

Q. The IRP and the -- I mean, the implications of this table. I'm not -- I'm not totally understanding, and maybe you could just explain how

it's only 2.9 percent.

CHAIR MITCHELL: Mr. Rouse, I'm gonna sustain the objection. Mr. Rouse, if you could just restate your question clearly so that the witnesses understand what you're asking so they may respond.

Q. Let me say it another way. In 2030, that same column is 4.6 percent, and then in 2040, it's 2.9 percent.

A. That's what the table says, yes.

Q. Okay. Why does it go down?

A. Because of utility EE roll-off and how it's treated in the load forecast.

Q. Right. But I shouldn't -- should I interpret this, then, that decline to mean that, if we didn't have your efficiency programs, that this amount would go away, but that the other -- that this amount would go away?

A. I think you're confused in how you're answering the question -- or asking the question. What it's -- what it's showing is that the utility efficiency programs are essentially pulling forward participation and getting the achievement, kind of, on a projected basis. And so there will be utility energy

efficiency savings that occur in the 2020s that will -- the program will no longer take credit for because they are not part of the UEE forecast and the recognized measure of life.

A device is no longer usable, it rolls off, and that now naturally occurring is factored into the load forecast that's naturally occurring. But the utility efficiency programs have still delivered significant benefits, and that's why you see the numbers being higher earlier. You're getting confused by utility roll-off, I believe.

Q. Well, no, I think you just answered my question in a way. And so let me ask this about your response.

You said that the utility programs are bringing forward things which would be happening otherwise, just later; is that what you mean by bringing forward?

A. Not necessarily.

Q. Okay. Tell --

A. So a great -- a great example would be all of the participation in traditional A-line lighting. So if you think about A-line lighting, you know, we went through CFLs that were used initially as an efficient

alternative for lighting, we then -- we then transitioned to LEDs. They all provided savings.

Since -- in large part because utility programs have been getting such high adoption of customers taking part of LEDs, the market has transformed. So in the A-line segment of the lighting market, today we no longer provide incentives, because the A-lines have taken on, kind of, the default standard. However, that doesn't diminish the savings that were achieved from those programs earlier.

And so that's -- that's, I think, the fundamental problem with what you're saying, is you're not understanding that we are delivering value, it's just how it's being reflected in the forecast.

Q. Okay. And so what you're saying is that -- you mentioned market transformation, that these programs help to make market transformation happen; is that is that what you're saying?

A. They definitely are a contributing factor to market transformation.

Q. And that's a benefit, obviously, to shrinking the challenge?

A. Yes.

Q. Okay. So you would -- would you agree that

from -- and I want to move on a little bit to the whole affordability question -- that when we looked on page 20, I think, it's the graph, Figure 3, the decline in usage per customer with and without EV impacts, that that's good news, that that represents an improvement in affordability?

A. So I -- I think you're overstating what this -- what this table shows. This table is designed to show what the impact on usage per customer, electric vehicles -- the incremental electric vehicle adoption has had. So I don't think this specifically deals with affordability in any sense of the imagination.

Q. So -- but would you agree that, if somebody's electric bill -- electric usage is lower, that they're gonna have a more affordable bill?

A. So --

Q. No, it's a yes-or-no question.

A. I disagree with that statement. There are multiple variabilities that factor into a customer's bill.

Q. And one of them is the amount of kilowatt hours that they use?

A. That's correct.

Q. And if that's lower, then their bill will be

lower?

A. No, not necessarily.

MS. FENTRESS: I believe Mr. Duff answered that question previously.

MR. ROUSE: Okay. Well, I'll move on.

Q. Okay. So let me just check here.

Would you say that -- that your programs are designed to reduce usage per customer?

MS. FENTRESS: Objection. I'm gonna ask which programs.

Q. Just in general, the energy efficiency programs that are the shrinking the challenge.

A. So to answer your question, I think it's important to say that they're targeting to reduce usage in energy consumption, but I don't know if the direct target is usage per customer. And I think I can explain a little bit more, because I think you struggled with my last answer. And I hate to take up the room's time, but I see -- I saw a little bit of confusion.

If you think about a time-of-use rate a customer is on, if they're on a time-of-use rate and they reduce their total usage but they have usage in a higher period -- rate period, they could still see a

total bill increase. And so I think it's important for me to explain so you understand that it is reliant on multiple variables, not just usage.

Q. Okay. I do understand that. And I'm just speaking really in high-level terms, because this graph was at the beginning of your -- of your testimony. The -- I've got a few more questions here.

One of the things -- I think it was brought up in some of the earlier testimony is that there's a certain set of programs that you have that contribute both to affordability and reliability. Would you -- I think the App Voices discussion brought that out.

A. So we believe that our cost-effective portfolio of energy efficiency and demand-response programs help customers manage their usage and potentially reduce their bills. So all of our programs we think help with affordability. I think the App Voices' attorney, I don't want to speak for her, but her questioning seemed to be targeting the income-qualified programs.

Q. But that's part of your -- your overall programs in an area where affordability is even more important; would you agree with that, for the customer?

A. That's -- I think I would agree to that, yes.

Q. Yeah. I'd like to hear more about your programs -- well, let me preface by -- I think came up also earlier in the testimony that the winter-peaking period of time is a critical period of time.

Would you agree that, in terms of -- in fact, I'll just mention App Voices Exhibit 4 as an example, on the last page of that exhibit. And she shows the load shapes by the winter -- the winter hours. And at -- one of the things that it shows is very high level of demand in the early morning hours and then a subsequent rebound in the -- in the late hours.

We had testimony also on reliability as it affects polar vortex-type situations where we have extreme cold, and that that is one of the things that a future system needs to be able to handle.

Would that be -- you're -- am I stating that correctly?

A. I don't want to speak for the system planning people. My testimony really focuses on our Grid Edge and Customer Programs. I don't feel comfortable answering that question.

Q. Okay. So my question really comes -- and it's just based on some of my work -- having to do with the programs that you have where you run into people

who -- who have electric space heat.

Would you agree that electric resistance heat is an extreme contributor to this issue of high peaks in the winter mornings and in the afternoons?

A. Yes. Electric space heating is a driver of winter-peak usage. I think the Company has worked with stakeholders and worked to acknowledge that in its recently filed high energy usage pilot that is waiting action from the Commission, is really targeting to a high extent those customers with winter -- with electric space heating.

Q. And what -- what -- what are some of the provisions of that that you think are most salient, of that proposal?

A. It provides attractive incentives to reduce or cover the cost associated with customers adopting efficiency measures beyond just the electric space heating appliance, but also including insulation and other air sealing.

It is -- one of the interesting things that we did with the pilot, and was largely based by a lot of input through stakeholders, was to recognize that we might have a better ability to get system savings as well as participation if we utilize high energy usage

as a means to target, as opposed to our traditional programs which were much more focused just on the income qualification level.

Q. Okay. And those -- well -- and as I understand it, correct me if I'm wrong, one of the parts of that application is to expand that program from DEC to DEP; is that correct?

A. No, you're mistaken.

Q. Okay.

A. I think you're referring to the weatherization program, in general. What I was referring to was the high energy use pilot, which is being -- which we're proposing to test out in a limited number of communities to see if, in fact, a lot of the thoughts and hypotheses that underlie those assumptions are correct.

Q. Right. But in the weatherization program, part of what you're doing is to expand some of the capabilities from DEC to DEP?

A. Yes. We have offered a weatherization program in DEC for quite some time that works to partner with the local weatherization agencies. And have seen some barriers to that program success, but have tried to actually modify the proposed DEP

weatherization program to offer similar measures and options for customers while trying to address some of the barriers that have impacted the DEC weatherization program.

Q. Okay. And some other programs that might assist in this whole reliability issue, just wondering if you had considered programs that involve thermal storage of -- and in both -- for both water heating and heating. In other words, programs that allow people to store heat in their homes in the middle of the day, for example, in the wintertime, so that they can turn their thermostat down at night and it won't have quite that bump in the afternoon with demand.

A. So I can say that we have a very active energy efficiency and demand-side management collaborative, and those topics have definitely been discussed a great deal.

Q. Okay. And I think actually the CIGFUR counsel and you discussed some of the other options, including interruptible loads and that sort of thing that are reliability issues, so I'll just skip over those.

Now, in the Carbon Plan, we've heard a lot of testimony from -- in this hearing. We've heard a lot

of testimony about the cost of various supply-side alternatives. Nuclear has a cost, solar has a cost, it all goes --

MS. FENTRESS: Objection. This is testimony.

CHAIR MITCHELL: All right. Mr. Rouse.

MR. ROUSE: I'm sorry, I didn't understand the question.

CHAIR MITCHELL: She's objected arguing that you're testifying. Just get to your question, please, sir.

Q. Yeah. It's -- so my question is -- and I can point you to the -- but we got some present value of revenue requirements numbers for the different Carbon Plan alternatives, and I just want to know if the cost of the DSM programs are in that number or not.

A. So I did not prepare the revenue requirement numbers, but I believe you're talking about the modeling team.

Q. The modeling -- yeah, the modeling forecast.

A. So I cannot speak specifically to what was included in those. I think they were PVRRs, as I was listening yesterday. But I can't tell you what was -- how those were calculated, because I didn't -- I wasn't

1 involved in the calculation.
2 Q. Okay. Do you have -- do you have a number
3 that is your cost -- the cost of the -- of this front?
4 I mean, do you have a number that's available? I don't
5 recall seeing it in any of the exhibits. It may be
6 there or not, I just didn't see it.
7 A. So the cost associated with the Grid Edge and
8 Customer Programs area is gonna cover a number of
9 different areas, but we do have estimated cost. For
10 example, on the energy efficiency component, it was
11 modeled assuming an assumed cost that was based off of
12 a market potential study and then escalated.
13 But I can't -- I can't tell you how that was
14 factored in, because there's a multitude of different
15 components, including something like a rate design,
16 which is not specifically having -- like, it's not
17 comparable to an asset.
18 Q. Sure. Sure. Have you prepared cost
19 estimates for sensitivities that involved higher
20 ambition in your energy efficiency programs as part of
21 the Carbon Plan, either as an alternative or a
22 scenario?
23 A. My understanding is that -- and we did
24 provide a sensitivity associated with a 1 percent of

total load sensitivity. I don't know what level of detail was actually utilized from that. Again, I didn't perform the modeling. But our group did provide a 1 percent total eligible load sensitivity to the modeling group.

Q. And -- but you don't know -- I mean, do you know what that cost was for that 1 percent?

A. Not off the top of my head, no.

A. (Lon Huber) I will just say, if you look at our current programs -- and we're not talking about potential futures, but the current ones produce the net benefits. So I want to be clear, and I know you're focusing on cost, but there are net benefits with our programs.

Q. Right. To the system, yeah. And one of the things you say in your testimony, and I need to -- there we go. I think it's on page 18. Is -- has to do with the Companies' modeling of energy efficiency programs. And I think it starts on page 17 and it goes on for a while. Let's see. And I think it's line 4, starting with "however," through the end of -- or through the middle of line 8.

Could you read that?

A. (Tim Duff) "However, as discussed in the

Modeling and Near-Term Action Panel's testimony, the Companies believe modeling resource -- a resource that is almost entirely dependent on a customer -- on customer preferences and participation using an optimization model is problematic because the model does not account for customer adoption constraints."

Q. And so you would -- so in reading that, you would characterize customer adoption as a constraint or limitation on -- can you tell me a little bit more about that? Just what -- tell me about the problem with customer adoption.

A. Well, first I'd like to say that the modeling and how it was treated is based off of what we were told from the Modeling and Near-Term Action Panel, which I believe was up here yesterday. But what I can say is that we always look at customer adoption as something that's factored into the achievable potential which comes out of a third-party-prepared market potential study.

So you're -- essentially, you're looking at what are the market barriers that stop customers from participating. I can give you a great example.

Q. Yeah.

A. So if you think about back when we were doing

CFLs, there was a -- even though they were cost-effective, they provided a lot of efficiency savings, we heard loud and clear from our customers that some of them would not adopt regardless of what incentive was provided because they didn't care for the quality of the light. They thought that it was white or blue. That's a market barrier to participation that is completely independent of the Companies' incentives and ability to control.

And so it's a great example of yes, we are concerned about the variability in customer adoption. And a whole bunch of things such as general economic conditions, inflation, workforce availability, supply chain, they all can impact customer participation and adoption of energy efficiency measures.

Q. And so just in terms of -- I mean, this kind of gets into the executability part of the problem, would you agree, that it's hard to execute because it's hard to get customers on board? Is that what you're saying?

A. It is a known variable and barrier that the Company designs around and has assessed as part of developing what it thinks is a reasonable and -- a reasonable and aggressive assumption for energy

efficiency in the Carbon Plan.

Q. Okay. And so following on from that, and sort of leading up to my next question, have you studied the implications of the Inflation Reduction Act for customer -- customers engaging in energy efficiency efforts on their own?

A. So we have not performed any detailed studies regarding how we think the IRA will impact energy efficiency programs. Frankly, it's still too new. A lot of the specific directives on how those monies will be spent and allocated have not come out yet. We do recognize that it will have some level of impact, but it's not necessarily known what that impact will be.

And I think, just assuming that there are additional funds out there because of the IRA, to assume that that somehow is going to lead to necessarily much more accelerated adoption of utility programs, I think we learned from the ERA stimulus dollars that came out, particularly around low income, that it actually provided a barrier to our DEC weatherization program, and we saw lower-than-projected participation after those ERA funds became available.

Q. So you're saying, basically, you haven't, but you're going to be looking into that and trying to --

A. Yes. We -- as I said, we engage regularly with stakeholders who are also aware of the -- of the IRA, as well as talk to other utilities and other industry experts to try and ascertain the potential impacts that the IRA could have on future efficiency programs. It's important to focus, though, that we're looking at utility efficiency, not -- with respect to our programs. There could also be a naturally occurring energy efficiency impact as well.

Q. Right. So you would think that the IRA could, if it works as designed, and you realize there could be some issues with that, cause the naturally occurring energy efficiency to speed up?

A. I believe the intent of the IRA is to increase energy efficiency adoption. How it's actually implemented, how it impacts utility programs as well as naturally occurring, it's too early for me to try and estimate that.

Q. Well, do you think, though, that there's an opportunity, subject to investigation, for the Company to move towards leveraging and promoting the provisions of the IRA as a way to increase the adoption both for your own programs and just for generally -- I mean, it might actually be -- I guess what I'm saying is a --

remove a barrier that you were talking about.

A. So I think I can assure you that the Company is working and will continue to work to understand the implications of the IRA. I think it's important to note that there could actually be a negative effect on the net savings that are realized through the Companies' programs because of the IRA. We're not sure of that. But again, we have had -- we have seen experience where we've actually seen reductions because of federal funding availability.

So again, it would be premature for me to speculate, but I don't want to lead you to believe that it's always going to be positive. It could be negative.

Q. Explain to -- let me just ask if I'm hearing this correctly, what you're saying.

That what could happen is that -- that the programs of the Company would not be as beneficial or as -- selected as much because people are doing it on their own because of the provisions of the IRA, people are doing things on their own; is that what you're saying?

CHAIR MITCHELL: Mr. Rouse, just making sure you're asking questions.

MR. ROUSE: Yeah.

THE WITNESS: What I'm saying is that how the IRA is ultimately implemented could have a variety of different outcomes. And I can't, at this time, assess what it's going to be. It could increase both utility program EE and naturally occurring. It could decrease one, it could decrease the other. We don't know how successful it will be because it hasn't been actually put into directives yet.

And so I think really this line of questioning is causing me to speculate on something that I can't.

Q. Okay. Well, that's my -- the end of my questions.

CHAIR MITCHELL: All right. EJCAN?

CROSS EXAMINATION BY MR. BLUMENTHAL:

Q. Morning. Ethan Blumenthal on behalf of Environment Justice Community Action Network, the Down East Coal Ash Environment and Social Justice Coalition, the Redtailed Hawk Collective, and the Robeson County Cooperative for Sustainable Development. Thank you for being here today. Sorry, bit of a mouthful there.

I have a number of questions for you-all that

wasn't immediately apparent to me sometimes who was answering or addressing each part of the testimony, so if you will direct me to who is best to answer that, I'd appreciate it. Let's jump right off.

On page 9 of y'all's testimony, it describes the three-prong approach that the Companies took to this challenge, labeling them as shrinking the challenge, adding carbon-free resources, and ensuring reliability; is that accurate?

A. (Lon Huber) Yes.

Q. And y'all identify Grid Edge Program specifically as shrinking the challenge, correct?

A. Correct.

Q. We've spent a good bit of time in this room already discussing Grid Edge Programs, as far as carbon-free resources and not being on the supply side, so I'll leave that to the side there.

As to reliability, did the Companies analyze the Grid Edge Program's ability to contribute to reliability concerns on Duke's system?

A. I mean -- so, I mean -- so the Company did, and through a variety of different ways. So -- and I don't -- I'm not the expert with them, that's the modeling team, but I can try to give you a high level

from my understanding.

You have load-modifying resources, so that gets taken out from the load forecast. That will give you a shape left over that the supply side has to cover. A lot of those resources will reduce peak demand, right? And so to the extent it reduces peak demand, it shapes load a certain way, that could help with the effective load-carrying capability or loss-of-load probability studies. Again, I'm not the modeler.

Then you have more demand-response devices. So these could be mechanical devices that are viewed as a selectable resource, and so you can call on them and then they will curtail load. And so those are, sort of, two major categories.

And then you would have, I would say, you know, rate design, which you can't fit into that bucket of load modifying. But rate designs, time-of-use rates, you know, critical-peak pricing, peak-time rebates, that type of thing.

So all of those are factored in, and it leaves the modeling team with a load shape typically and then some resources that they can select to help them make sure that the system is reliable.

Q. Okay. Thank you. And I do realize that of course we have other panels addressing all sorts of parts of these, touch on a lot of this, I appreciate that.

Within that, again, recognizing the other panels, are you aware if the Companies gave the Grid Edge Program's effect on reliability a value, a number, some sort of weighted -- I guess weight when valuing how they impact the system, particularly -- you know, as we've seen, there are a lot of system costs proposed in the Carbon Plan; how are the Grid Edge Programs viewed within that?

A. So, typically, we have our cost-effectiveness, you know, modeling that we do, you know, to get the, you know, net savings and different valuations. That will look at how one particular measure lines up to coincident peak. And then it can tell us a value of that. One of the enablers that we proposed in the testimony here is to sync up the resources -- the cost of the resources that these Grid Edge resources are offsetting, but that is an enabler, that is not under our current rules.

So we are looking at how Grid Edge today and the current cost-effectiveness setup, we are looking at

how Grid Edge resources offset, sort of, the pre-951, pre-Carbon Plan resources, so hopefully that gets you somewhere there.

Q. Yeah, I appreciate it. I think that covers that. We'll move on.

In a number of different locations, prominently on page 12 in your testimony, referred to the 1 percent target as a floor. On page 12, I believe -- I'm not quite sure lines, just give me a second. Line's 17, 18, and 19 refer to as a floor or a minimum amount of annual utility program energy efficiency savings.

So considering this 1 percent as a floor, did Duke Energy investigate what a ceiling or a maximum amount of energy efficiency savings could be achieved in order to shrink the challenge?

A. (Tim Duff) So -- excuse me. The 1 percent of eligible load was used as a floor that would be aggressive and achievable. And because of the constructive regulatory construct that we operate under, we don't have a ceiling, nor do we think trying to put a ceiling on efficiency is the appropriate path.

But from a -- the Carbon Plan team wanted an aggressive but achievable assumption, and so the

1 percent floor was put in to add that aggressiveness beyond what the current base IRP energy efficiency forecast is.

Q. Okay. So in some ways, would you describe the floor as the ceiling for the purposes of this?

A. No, not at all.

Q. Not at all. Okay. So there hadn't -- so from -- would there -- to be more specific, from a ceiling perspective, were there any investigations, from a technological perspective, what the most amount of energy efficiency could be implemented in a cost-effective manner considering technological constraints?

A. So that specific analysis wasn't done, but what the underlying data that was used is based off of the market potential study --

Q. Okay.

A. -- and is -- was used basically to make sure that there was achievable potential out there. As we get into the out years of the plan, we recognize that it's actually higher than what that MPS had put out as achievable potential.

However, we've identified things -- enablers -- that could help us get to that higher

level, which is, again, why we call it achievable and aggressive.

Q. One final question on that point -- on this point here. So if -- understanding that the 1 percent is labeled by this testimony as aggressive and achievable, if there were to be a ceiling -- let me scratch that. Let me rephrase that. Sorry.

Could there not be a window of reasonableness for achievable targets beyond that 1 percent identified in the Companies' Carbon Plan?

A. Like I said, the Company does not view it as a cap on the window. So what we'd like to do is get as much cost-effective energy efficiency as possible and do it as soon as possible. But since it's being put into a planning model, to be overly aggressive would potentially cause you to understate -- understate the needs of the system.

Q. I appreciate that. I would just -- then I'll phrase it a slightly different way.

Would you agree that there could be a window -- from a planning perspective, a window of numbers that would be reasonable for the Commission to use for what could be achieved? Not strictly 1 percent as it's proposed, but perhaps a range of numbers?

A. Well, I think that's exactly what the Company did, because they put in a floor. So anything above 1 percent would be -- would essentially be that window. We're just saying that the 1 percent of eligible load is the aggressive yet achievable floor for that window, or bottom of the window.

Q. So just to ensure I understood that right, you're saying, since the 1 percent is a floor, anything above that could be reasonable?

A. That's not what I said. I said that it could be -- we would hope to do more than that, but from a modeling assumption, the 1 percent was deemed to be both aggressive and achievable and be appropriate for the modeling team to basically include as a reduction in load in the assumed Carbon Plan.

Q. Okay. Appreciate that. Thank you. Let's move on. I believe -- page 13, between lines 5 and 15 in your testimony. I believe you described that it would only be appropriate to include loads that are eligible to participate in existing energy efficiency programs.

I believe I added the word "existing," but would that accurately depict your testimony?

A. With you -- it's not including, because new

1 programs also are not necessarily able to be offered or
2 participated in by all programs. Essentially, what the
3 Company is saying is, is to assume a percentage of
4 savings from customers that are not participating in
5 our programs only inflates the amount of efficiency
6 that we've already modeled around achievable for each
7 customer that is participating.
8 So to inflate that number is, again, gonna
9 cause an overstatement, which is why we felt it was
10 appropriate to use the 1 percent of eligible or
11 available load as the modeling assumption.
12 Q. Okay. I appreciate that. Moving on to page
13 20 to 21 in reference, again, to what we were just
14 discussing, there at the bottom of 20 on to 21 it
15 discusses that the energy saving impacts resulting from
16 new customer participation in utility-sponsored energy
17 efficiency programs are shown in the utility program
18 energy efficiency forecast.
19 So comparing that statement with the
20 Companies' position that loads only for eligible
21 existing programs are included in the 1 percent, how do
22 these two statements line up?
23 A. So -- and again I apologize, I don't want to
24 slow us down, I didn't get the reference to my

testimony, but I think I understand your question. So what the Company is saying is that we believe it's important to try and design programs and features that get more customers to decide to participate in our programs.

And so we'll work towards that, and that obviously will help reach the 1 percent of eligible load assumption. But one's a modeling assumption; one's a reality of how we're operating our programs.

Q. So I guess could you explain to me how the UEE, the utility program energy efficiency forecast, was used in developing the 1 percent target?

A. The UEE forecast is the 1 percent.

Q. It is the 1 percent target. So you state that new customer participation is included in that, though back on page 13 you said it's only eligible existing programs. So which new --

MS. FENTRESS: Objection. Can Mr. Duff please finish his answer. And also if you could direct him to where you are and give him time to get there.

Q. Page 20 to 21.

CHAIR MITCHELL: All right. Let me sustain the objection. Just let him -- do your

best to direct him to the testimony and then let him answer so that y'all aren't speaking over one another for the --

THE WITNESS: So -- so when you're reading new customer participation, that means a customer that hasn't participated. It doesn't necessarily mean an eligible customer.

Q. Okay.

A. So when we -- the statutes in North Carolina talk about new utility efficiency. And so when we say "new," it's -- it could be a customer that had participated in the past. It's not about eligibility. It's about -- it would be new participation in year 2025.

So again, I think you're mixing apples and oranges. I appreciate you pointing me to the point of the testimony, because that helped me clarify.

Q. Of course. I appreciate the clarification. Moving pages -- generally we discussed a little bit here pages 31 to 33 where you discussed the enablers that have been discussed a number of times. I don't think I need to list them for you. I believe you'd be familiar with those.

As these are described as necessary in order

for the Companies to reach the 1 percent, were these included in that determination? Or how were they included in that determination?

A. No. So when we -- when we provided the 1 percent of eligible load, that was based off of taking what we had known in the IRP, which again is based off a combination of the five-year forecast and then the market potential study using up achievable potential, we recognize that we were increasing beyond that. In order to do that, you're going to have to remove some of the barriers that limit what's achievable.

And so the Company worked with stakeholders, part of the Carbon Plan stakeholder groups, and then subsequently took it to the energy efficiency collaborate to talk about things. We were trying to think of broad ideas that could help create more energy efficiency savings to make that 1 percent over the entire Carbon Plan footprint achievable.

Q. I appreciate that. I think that answers that line of questioning. Thank you. Let's move on to on page 40 of the testimony, where your testimony describes two significant potential pathways to expand the pool for savings. One of those being offering

portfolio of energy efficiency programs to wholesale customers, also expanding the amount of nonresidential customers there.

With those two, I was wondering, what role do low-income programs play in, quote, expanding the pool for savings?

A. So the -- those low-income customers are currently eligible to participate --

Q. Okay.

A. -- if they meet the income qualification. Right now we don't offer our retail programs to wholesale customers. And it wasn't a formal enabler that was identified, but it was something that was discussed in -- as, kind of, a broad idea that could increase the amount of efficiency and associated carbon reductions that would come from the utility programs.

And then, obviously, as I got into earlier, developing new programs, modifying the process, and being cognizant of nonresidential customer needs to try and attract them to participate. Obviously, if we're increasing the load that's eligible to participate, that should increase the opportunity for savings.

Q. Specifically just within the opportunities to expand -- and I get the difference between existing and

eligible customers -- one of the enablers you describe is expanding the definition of income qualified. Would that expand the pool of potential savings since they are not eligible as of --

A. So -- so what it would do is it would expand the pool of customers that are explicitly eligible for income-qualified programs. It does not expand the pool of residential customers, because as we discussed in the exhibit, 62 percent of customers that are identified as income-qualified or below 200 percent of the federal poverty guideline have actually participated in a targeted low-income program or another energy efficiency demand-response program.

So it's expanding the amount of customers for that targeted income-qualified programs where, essentially, we're offering no-cost efficiency upgrades.

Q. Okay. I think we touched on this a little bit in your last testimony, but if you wouldn't mind just addressing specifically when it comes to these low-income customers -- and I know you mentioned a lot of times these are not cost-effective programs when it comes to low income -- have you looked at generally what increased funding for the weatherization

assistance program and low-income home energy assistance program, as proposed under the Inflation Reduction Act, would mean for these programs -- adoption rates? Sorry.

A. So we haven't made any firm conclusions. We are aware that there is additional funding available. However, as I mentioned, just because there's funding available doesn't necessarily mean that it's going to increase our weatherization programs which work collaboratively with the weatherization agencies.

When the ERA monies were available, we actually saw a reduction because, essentially, the agencies weren't able to spend all the money they had, they didn't have enough workforce, and so they were trying to spend the federal funds first. And our programs, which would work cooperatively with them, they weren't able to be leveraged.

So it's hard to say that just additional funding creates more weatherization, but there is more funding available; you're correct.

Q. Okay. I'd like to jump back to the wholesale customer point, specifically, I believe, at the end of page 38 on to 39. That's -- that is where you offer an explanation of why the proposed increase -- or

including wholesale customers is not included in this 1 percent target.

I believe you explain that as because of the complexity of contract negotiations and the need for subsequent FERC approval; is that correct?

A. So yes, that's what my testimony says. But I believe the Company also filed a legal brief on that on September 9th. But yes, it was not included as a formal identifier in -- a formal enabler in the final Carbon Plan.

Q. Gotcha. And just briefly -- and I understand that there have been other filings on this -- to the best of your knowledge, considering the acknowledged potential interest of the wholesale customers -- I believe that's page 39, lines 4 through 6 -- considering that acknowledged interest, do you have any reason to believe that you would not be able to come to agreement with wholesale customers?

A. Again, I am not part of those negotiations currently, and I think it would be over my head to speculate on what can be agreed to. I think we do believe that there is an opportunity to help by providing our energy efficiency programs to wholesale customers, but what value is placed on that, the

ability to negotiate that and then get subsequent FERC approvals is why we really didn't deal with it in detail.

Q. Okay. Again, I think we've touched a little bit, but back with the Inflation Reduction Act, I assume there haven't been any accounting for incentives for publicly owned utilities to invest in renewables and energy efficiency programs?

A. That would be beyond what I would know regarding what the -- what public utilities are doing. I tend to focus on Duke programs.

Q. Of course. Of course. But to the extent that, from a Carbon Plan compliance perspective, a wholesale customer chooses to invest in renewable energy on their own --

MS. FENTRESS: Objection. Mr. Duff has already testified that he is not involved in the wholesale discussions. He's given an explanation in his testimony and had indicated that that's about as far as he can go, from a knowledge standpoint, with respect to any discussions with wholesale customers.

MR. BLUMENTHAL: I'm only strictly asking from a cost perspective, from a compliance

of the Carbon Plan, not what any of these wholesale customers may or may not actually, in fact, be doing.

MS. FENTRESS: And I don't believe -- sorry.

CHAIR MITCHELL: Go ahead.

MS. FENTRESS: I don't believe that Mr. Duff would be the witness to answer any kind of cost questions with respect to wholesale customers. That is not in any way his area of exercise.

CHAIR MITCHELL: All right. I'm gonna overrule the objection. I'm gonna allow you to ask your question. If you can't answer the question, defer the question to the person you believe is better suited to answer the question.

Q. Thank you. So from a cost -- Carbon Plan compliance perspective, if a wholesale customer chooses to invest in renewable energy from their own volition, would that be -- would that be a low-cost option for Duke Energy to achieve compliance with the Carbon Plan?

A. I can't -- I can't answer that question. I can't speak for what another customer's cost would be.

Q. Specifically from Duke Energy's costs of complying with the Carbon Plan.

MS. FENTRESS: Objection. Asked and answered.

MR. BLUMENTHAL: I believe I was asking about Duke Energy's costs and not another utility's costs on that.

MS. FENTRESS: I believe you were discussing the wholesale cost.

MR. BLUMENTHAL: I was saying, if a wholesale customer chose to make that investment, what would the cost to Duke Energy be. Cost impacts to Duke Energy's system.

CHAIR MITCHELL: All right. Restate the question as you just -- I'm gonna overrule the objection one more time. If you restate the question, answer it if you can, and then let's move on.

MR. BLUMENTHAL: Yeah, of course.

Q. So from -- if a wholesale customer chooses to voluntarily invest in renewable energy systems or energy efficiency systems, from a perspective to Duke Energy's cost of compliance -- strictly Duke Energy's cost of compliance -- with the Carbon Plan's mandates, how would that investment affect Duke Energy's cost of compliance?

A. I should have just said this earlier. I don't know.

THE WITNESS: And I apologize, Chair Mitchell, I'm gonna say I think the modeling team could talk about the impact of wholesale, but I really don't know who the appropriate witness is.

Q. Yes. Thank you. We'll move right on. Specifically -- and I know we don't know the specifics of the Inflation Reduction Act, but on page 45 and 46, you discuss the clean energy connection proposal, which is -- would just, kind of, as a base question.

Would the Companies consider designing a community solar proposal that is eligible for the federal guidelines under the Inflation Reduction Act that could be run alongside the clean energy connector proposal as has been similarly proposed in North Carolina before?

A. (Lon Huber) I'm just gonna say broadly, we're open to all ideas with this, and that's why we've had a series of stakeholder meetings including -- you know, open to public. So we're open to any ideas to advance community solar.

Q. Appreciate that. Just a couple more questions for y'all here. On page 47, discuss -- of

the testimony you discussed the need for new regulatory approaches to expedite pilot programs. In particular, there is a Department of Energy study mentioned. And the quote for the need -- or the collaborative regulatory processes will spur innovation needed to meet the clean energy goals.

Could you speak a minute, what collaborative regulatory processes the Companies are proposing for the future implementation of these pilot programs?

A. So what we've attempted to do is have a sort of a call-out here of saying, hey, this is an idea that could help us with the Carbon Plan, we're open to ideas. You know, Commissioners, if you have ideas on it, maybe there's ways that you think we can be more efficient at filing pilot programs, we're open.

But I wanted to put this out there for a reason because, you know, in my experience in other states, especially coming together collaboratively and then having quick turnarounds on filings, as long as they meet certain guidelines and guardrails, I think it would be really beneficial when we're in the space of customer and innovation.

And so, you know, again, wanted to put this out there that the whole net metering reform

discussion, we approach that -- we didn't have any specific policy in mind. We came open minded, we all got -- you know, got into a room and just, you know, whiteboard it out. What could -- how can we do this, right? And so that's the type of thing here we want to work with stakeholders. Let's determine -- if the Commission is interested, of course.

If the Commission shows interest, we'll get with stakeholders and we'll figure out how to set this up with the right guardrails and parameters so that we can have a positive regulatory structure around filings related to customer programs. So, you know, think rate -- new rate designs or bundling rate designs with new technology and rapidly learn what customers like, be able to pivot quickly.

Q. Appreciate that. Thank you. One, kind of, final line of questioning for y'all here. You state in your testimony, subject to check, success of the programs and the magnitude of the resulting energy savings will ultimately depend on the customers electing to participate.

I'd like to discuss, on page 29 of your testimony, I believe it discusses that while Companies continually look for ways to enhance behavioral

programs, Duke did not increase the amount of behavioral-based program savings in the Carbon Plan as compared to the 2020 IRP.

Could you talk a little bit about the decision not to increase behavioral-based savings?

A. (Tim Duff) Sure. So when we put together the IRP, it was something that -- and in our energy efficiency collaborative, it's been pointed out that a very high percentage of our annual energy efficiency savings are coming from behavioral programs. And so we wanted to say that, for the purposes of modeling that assumption, we would maintain the level that was in the IRP.

That doesn't mean to say we're not going to continue to innovate that program and help it to continue to educate, empower, and enable customers to become more energy efficient, but we wanted to be responsive to what we'd heard in the past, which was you're not putting in enough physical measures. And so the Company felt that that was actually a responsible and responsive modeling assumption.

Q. Okay. I'd like to go back just quickly to the "continually looking for ways to enhance behavioral programs" statement.

In what ways does Duke undertake to continually enhance these behavioral programs?

A. So we're continuing to learn about AMI and the data and how it can be presented to customers to inform them, educate them, let them know of opportunities, as well as try and make the savings align better with peaks. We have a whole new toolbox based off of interval data that's available to us to continue to try and target that program as well as make it more effective and provide more meaningful savings to customers.

Q. Is there a role for public feedback within this, or is there a mechanism for public feedback within these continually -- continuous methods of advancement?

A. So we -- as I said, we discuss this regularly in our EE/DSM collaborative. It's been discussed in EE/DSM rider proceedings, and we regularly do customer feedback groups to try and understand the program. So as well as, finally, as part of the third-party measurement and verification process that is performed on the product to validate the savings associated with it, there's also a process evaluation.

And that third party looks at how the program

is delivered and how it interacts with customers, and they seek to also do some surveying to understand how the program can be improved. And we utilize all those different channels to make the enhancements to the program.

Q. Okay. As compared to the 2020 IRP proposals, are there any alterations to community-specific engagement and outreach efforts regarding Grid Edge Programs? More, less, new? As far as actual community engagement, not the programs themselves.

A. So I think -- I think that we continue to try and identify ways to engage communities. We have found community engagement to be particularly helpful around programs like our neighborhood energy saver, which is an income -- a program that targets income-qualified customers. We generally have some sort of a kickoff meeting in a neighborhood that's at a community center or community event, such as a church, that helps get customer awareness up as well as helps to break some of those barriers with trusting the utility to help try and provide efficiency savings.

Q. Thank you. One final question here, and feel free to direct me to another panel. I think it very well may be.

Do you know if Duke has studied the marginal benefit that would be derived from increasing the resources dedicated towards community outreach specifically, trying to increase the adoption rate but not changing the programs themselves?

A. So I'm gonna answer a part and then if you want to jump in. So I don't think we necessarily looked at the marginal cost of outreach. Because of our cost-recovery mechanism, we would have to call it a marketing or advertising program implementation cost to assess that, and I don't think that that's specifically been done in exclusion of other marketing or advertising costs. But I think it's something that would be a good topic for discussion at future collaborative meetings.

Q. Appreciate it. Thank you for your time.

CHAIR MITCHELL: All right. With that, we are --

MR. JIRAK: Chair Mitchell, may I have 30 seconds?

CHAIR MITCHELL: You may.

MR. JIRAK: Just quick logistic issue. That panel has -- first of all, we defer entirely to Commission's schedule, but this panel does have

some conflicts. We hoped they would be done today. Starting on Monday, we have some significant conflicts with this panel. If there's anything at all we can assist or do to keep this moving in a timely fashion somewhat consistent with the estimated times, we really appreciate it. And I'd also just acknowledge the fact that they will be appearing again on rebuttal, so questions that don't get covered at this time can also be addressed on rebuttal.

CHAIR MITCHELL: All right. Let's do this. We're gonna break for lunch. Instead of taking an hour, we'll take 45 minutes. So we'll be back at 1:00. We are ending at 3:00 today, 3:00 to 3:15. So when we get back in the hearing room, let's be as efficient as we can. And we are off the record.

(The hearing was adjourned at 12:16 p.m. and set to reconvene at 1:00 p.m. on Friday, September 16, 2022.)

CERTIFICATE OF REPORTER

STATE OF NORTH CAROLINA)
COUNTY OF WAKE)

I, Joann Bunze, RPR, the officer before whom the foregoing hearing was conducted, do hereby certify that any witnesses whose testimony may appear in the foregoing hearing were duly sworn; that the foregoing proceedings were taken by me to the best of my ability and thereafter reduced to typewritten format under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this hearing was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

This the 19th day of September, 2022.

JOANN BUNZE, RPR
Notary Public #200707300112