September 16, 2022

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


Dear Ms. Dunston,

Pursuant to the North Carolina Utilities Commission’s August 30, 2022 Order Establishing Expert Witness Hearing Procedures, attached for filing please find a copy of Appalachian Voices’ cross-examination exhibits and a list of the cross-examination exhibits that were introduced and moved into the record on behalf of Appalachian Voices.

Sincerely,

[Signature]
Catherine Cralle Jones

Enclosure(s)

cc: Parties of Record
Appalachian Voices’ Cross-Examination Exhibits Marked and Moved into the Record During Grid Edge Panel

Appalachian Voices introduced and moved the following exhibits into the record during the cross-examination of Duke’s Grid Edge Panel, which panel’s testimony concluded on September 16, 2022.

<table>
<thead>
<tr>
<th>Exhibit Name</th>
<th>Date Exhibit Introduced/Identified for the Record</th>
<th>Date Exhibit Moved and Admitted into the Record/Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appalachian Voices’ Grid Edge Panel Cross-Examination Exhibit 2 – 2020 Utility Energy Efficiency Scoreboard, Table 8</td>
<td>September 16, 2022</td>
<td>September 16, 2022</td>
</tr>
<tr>
<td>Appalachian Voices Grid Edge Panel Cross-Examination Exhibit 3 – Duke’s Response to Appalachian Voices’ Data Request No. 1</td>
<td>September 16, 2022</td>
<td>September 16, 2022</td>
</tr>
<tr>
<td>Appalachian Voices’ Grid Pane Cross-Examination Exhibit 4 – LIAC Final Report, August 12, 2022 Excerpts</td>
<td>September 16, 2022</td>
<td>September 16, 2022</td>
</tr>
</tbody>
</table>
APPALACHIAN VOICES GRID EDGE PANEL
DIRECT CROSS EXAMINATION EXHIBIT ____

Southern Alliance for Clean Energy,
February 2022, p. 12

Duke Energy Regional Leadership in National Context
DUKE STILL LEADS, BUT COVID DROVE SAVINGS DOWN

The region’s top performing utility, Duke Energy Carolinas, saw a 19% savings drop from 2019 to 2020, which put it nearly even with Duke Energy Progress. These two utilities, which are among the largest in the region, achieved annual savings percentages that were more than twice as high as the next utility. To put this in perspective, the already dismal Southeast average would fall from 0.20% down to 0.14% if these two utilities were removed from the calculation.

LOW-INCOME HOUSEHOLDS HIT HARD

Programs that serve low-income customers in each of Duke’s service areas in the Southeast saw steep savings declines in 2020, ranging from 60-85% lower than the previous year. While Duke was able to resume many of its in-home programs, its low-income programs remained suspended through 2020. These programs rely on door-to-door solicitation across whole neighborhoods, which was incompatible with the safety protocols used in other programs. Widespread economic hardship put serious financial pressure on struggling households, leading to unprecedented levels of unpaid bills in 2020. This experience points to a need for Duke to make further strides to expand efficiency services for low-income customers, both before and during future economic crises.
APPALACHIAN VOICES GRID EDGE PANEL
DIRECT CROSS EXAMINATION EXHIBIT ____

2020 UTILITY ENERGY EFFICIENCY SCOREBOARD_ TABLE 8
Table 8. Scores for net savings as a percentage of retail sales in 2018

<table>
<thead>
<tr>
<th>Utility</th>
<th>Net incremental savings (MWh)</th>
<th>Savings as % of sales</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG MA</td>
<td>782,838</td>
<td>3.73%</td>
<td>8.5*</td>
</tr>
<tr>
<td>Eversource MA</td>
<td>760,750</td>
<td>3.15%</td>
<td>8</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>463,260</td>
<td>2.35%</td>
<td>6</td>
</tr>
<tr>
<td>ComEd</td>
<td>2,064,720</td>
<td>2.08%</td>
<td>5.5</td>
</tr>
<tr>
<td>SRP</td>
<td>624,658</td>
<td>2.05%</td>
<td>5.5</td>
</tr>
<tr>
<td>BGE</td>
<td>616,559</td>
<td>1.96%</td>
<td>5</td>
</tr>
<tr>
<td>Xcel MN</td>
<td>565,220</td>
<td>1.73%</td>
<td>4.5</td>
</tr>
<tr>
<td>LADWP</td>
<td>395,609</td>
<td>1.63%</td>
<td>4.5</td>
</tr>
<tr>
<td>PG&amp;E</td>
<td>1,352,387</td>
<td>1.61%</td>
<td>4.5</td>
</tr>
<tr>
<td>SCE</td>
<td>1,415,400</td>
<td>1.55%</td>
<td>4</td>
</tr>
<tr>
<td>Consumers</td>
<td>641,648</td>
<td>1.55%</td>
<td>4</td>
</tr>
<tr>
<td>Eversource CT</td>
<td>346,200</td>
<td>1.54%</td>
<td>4</td>
</tr>
<tr>
<td>DTE</td>
<td>777,405</td>
<td>1.50%</td>
<td>4</td>
</tr>
<tr>
<td>Xcel CO</td>
<td>453,854</td>
<td>1.45%</td>
<td>4</td>
</tr>
<tr>
<td>PGE</td>
<td>303,416</td>
<td>1.45%</td>
<td>4</td>
</tr>
<tr>
<td>LIPA</td>
<td>293,161</td>
<td>1.41%</td>
<td>4</td>
</tr>
<tr>
<td>Duke OH</td>
<td>292,107</td>
<td>1.32%</td>
<td>3.5</td>
</tr>
<tr>
<td>MidAm IA</td>
<td>322,760</td>
<td>1.27%</td>
<td>3.5</td>
</tr>
<tr>
<td>OH Edison</td>
<td>286,819</td>
<td>1.12%</td>
<td>3</td>
</tr>
<tr>
<td>PSE</td>
<td>261,586</td>
<td>1.10%</td>
<td>3</td>
</tr>
<tr>
<td>Entergy AR</td>
<td>255,930</td>
<td>1.08%</td>
<td>3</td>
</tr>
<tr>
<td>NG NY</td>
<td>397,304</td>
<td>1.07%</td>
<td>3</td>
</tr>
<tr>
<td>Ameren MO</td>
<td>364,080</td>
<td>1.03%</td>
<td>3</td>
</tr>
<tr>
<td>Duke SC</td>
<td>233,774</td>
<td>1.01%</td>
<td>3</td>
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<tr>
<td>AEP OH</td>
<td>467,385</td>
<td>1.00%</td>
<td>2.5</td>
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<tr>
<td>Duke NC</td>
<td>624,322</td>
<td>0.99%</td>
<td>2.5</td>
</tr>
<tr>
<td>Ameren IL</td>
<td>404,725</td>
<td>0.98%</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Savings are net at the generator level. We adjusted EIA retail sales data (shown in table 1, above) for line loss factors to be consistent with the generator-level reporting of savings. See Appendix B for meter-level savings and loss factors. * We awarded a half-point bonus to NG MA for far exceeding the top threshold of 3% savings as a percentage of sales. * Includes savings separately allocated from a third-party program administrator. * Savings from EIA 2019b.
APPALACHIAN VOICES GRID EDGE PANEL

DIRECT CROSS EXAMINATION EXHIBIT____
REQUEST:

Provide all data, analysis, documentation, modeling, etc. showing the participation rates of low-income households in the Company’s existing energy efficiency programs.

RESPONSE:

The issue of low-income households' participation in the Companies' existing energy efficiency programs was considered in the Low-Income Affordability Collaborative (LIAC), which is still ongoing and finalizing its recommendations. The Companies did not rely upon this information in their development of the Carbon Plan's determination of the 1% of eligible load goal. The Companies are committed to using the findings from the LIAC going forward to expand the Companies' programs, support customers, and help achieve the aggressive level of EE savings assumed in the Carbon Plan.

The data contained in the attached APPVOICES DR1-17.xls includes data for calendar year 2021, based on data provided by Axiom for accounts active on July 8, 2022, and is subject to change.
<table>
<thead>
<tr>
<th></th>
<th>Total Customers</th>
<th>Low Income</th>
<th>Low Income + DR or EE Incremental</th>
<th>Low Income + Any EE Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEC(NC)</td>
<td>1,820,476</td>
<td>583,012</td>
<td>27,016</td>
<td>365,836</td>
</tr>
<tr>
<td>DEP(NC)</td>
<td>1,273,012</td>
<td>397,761</td>
<td>14,252</td>
<td>242,863</td>
</tr>
<tr>
<td></td>
<td>3,093,488</td>
<td>980,773</td>
<td>41,268</td>
<td>608,699</td>
</tr>
</tbody>
</table>

*Numbers shown for Low Income customers are those that are identified via Acxiom as having a household income equal to or less than 200% FPL.

**Numbers shown for Low Income + DR or EE Incremental are the number of unique households that participated in any EE or DR program in 2021.

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<td>DEC(NC)</td>
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<td>583,012</td>
<td>4.63%</td>
<td>62.75%</td>
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<tr>
<td>DEP(NC)</td>
<td>1,273,012</td>
<td>397,761</td>
<td>3.58%</td>
<td>61.06%</td>
</tr>
<tr>
<td></td>
<td>3,093,488</td>
<td>980,773</td>
<td>4.21%</td>
<td>62.06%</td>
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</tbody>
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<td>980,773</td>
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<td>608,699</td>
</tr>
</tbody>
</table>

*Numbers shown for Low Income customers are those that are identified via Axiom as having a household income equal to or less than 200% FPL as of 7/8/2022

**Numbers shown for Low Income +DR or EE Incremental are the number of unique households that participated in any EE or DR program in 2021 not including behavioral based programs (ie. MyHER) that are still Active as of 7/8/2022. This has removed duplication for customers that participated in more than one program or purchased more than one measure.

***Numbers shown for Low Income + Any EE Programs are the number of unique households that participated in any EE or DR Program in 2021 including behavioral programs (ie. MyHER) that are still Active as of 7/8/2022

<table>
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<td>4.21%</td>
<td>62.06%</td>
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</tbody>
</table>

***Percentages shown in the table above are the number of unique households that participated out of the number of low income households identified as of 7/8/2022

Responder: Tara Bolen, General Manager, Portfolio Analysis & Regulatory Strategy
APPALACHIAN VOICES GRID EDGE PANEL
DIRECT CROSS EXAMINATION EXHIBIT ___

LIAC FINAL REPORT, AUGUST 12, 2022
EXCERPTS
LIAC Final Report
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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1213

In the Matter of
Petition by Duke Energy Carolinas, LLC, for Approval of Prepaid Advantage Program

DOCKET NO. E-7, SUB 1214

In the Matter of
Application by Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina

DOCKET NO. E-7, SUB 1187

In the Matter of
Application of Duke Energy Carolinas, LLC for an Accounting Order to Defer Incremental Storm Damage Expenses Incurred as a Result of Hurricanes Florence and Michael and Winter Storm Diego

DOCKET NO. E-2, SUB 1219

In the Matter of:
Application of Duke Energy Progress, LLC for Adjustment of Rates and Charges Applicable to Electric Service in North Carolina

FINAL REPORT AND RECOMMENDATIONS OF THE NORTH CAROLINA LOW-INCOME AFFORDABILITY COLLABORATIVE
LIAC REPORT
DUKE ENERGY AND PUBLIC STAFF RECOMMENDATIONS
PP. 84-85
households. The statistical modeling results show that households with an 8% electric energy are 19% more likely to meet the arrears struggling definition compared to households with a 6% electric energy burden. The direct impact of reducing a household’s electric energy burden makes their bill more affordable by reducing the likelihood that they may receive a 24-hour disconnect notice and experience a DNP.

The autoenrollment of LIEAP and CIP recipients in CAP eliminates the hurdle of a customer being required to complete another application for assistance. In order to automatically enroll LIEAP and CIP recipients in CAP, Duke Energy and the NCDHHS would need to execute a Data Sharing Agreement. Upon seeking approval for CAP in a future regulatory proceeding before the Commission, the Companies must request that the Commission also approve using LIEAP and CIP status as eligibility criteria for receiving a bill discount. An arrears management program could be added but will require additional evaluation to determine terms and feasibility of timely implementation.

VII. Duke Energy and Public Staff Recommendations

As a result of the 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% when determining eligibility for programs to address affordability. As discussed in Section IV, this

39 See Appendix C at 20.
60 This is similar to the agreement with NCDHHS to share LIEAP and CIP recipient information to enroll them in the expanded moratorium during the COVID-19 pandemic. The Companies along with Piedmont Natural Gas informed the Commission of their intention to work with DHHS to identify the North Carolina customers that currently receive, or received during the 2019-2020 winter season, assistance through LIEAP or CIP. See Duke Carolinas, LLC, Duke Energy Progress, LLC and Piedmont Natural Gas Company, Inc.’s Notification of Change to Winter Moratorium, Docket Nos. E-7, Sub 1236; E-2, Sub 1228; G-9, Sub 767; M-100, Sub 158; E-7, Sub 1241 and E-2, Sub 1258 (February 11, 2021).
recommendation aligns with the majority of the income-qualified programs identified in the Sub-Team B research and analytics information completed for the LIAC.

- The Commission should approve and adopt the metrics recommended for monitoring affordability program impacts as discussed in Section III.B of the Final Report.
- The Commission should initiate a rulemaking docket to review the existing regulatory consumer protections detailed in NCUC Rule R12-11 as discussed in Section III.C of the Final Report.

VIII. Public Staff Perspective on the LIAC

Throughout the duration of the LIAC there has been robust discussion, sharing of points of views, and education on differing perspectives among the members. Those engagements have benefited the entire LIAC. The Public Staff welcomes the opportunity to explore potential avenues for making electric rates more affordable for low-income customers.

The Public Staff has been consistent in its position that cost-of-service principles remain in effect and must be a primary concern to ensure rates remain fair, reasonable, and affordable for all customers. Cross-subsidization between customer classes and within classes should be minimized and only be allowed if there is legislation requiring or permitting the cross-subsidization or upon the articulation of explicit policy decisions by the Commission.

There are two primary opportunities to assist low-income customers in paying their electric energy bills: (1) reduction of customer usage through participation in energy
LIAC REPORT
APPENDIX C – V.4 ANALYTICS
APPENDIX C – LIAC

VERSION 4 ANALYTICS

DOCKET NOS. E-7, SUB 1213; E-7, SUB 1214;
E-7, SUB 1187; E-2, SUB 1219 AND E-2, SUB 1193
Average Monthly Usage per Square Foot by Income for Housing Type, Housing Status and Heating Source

Average Monthly kWh/Sqft by Housing Type, Housing Status, and Heating Source

- LIEAP/CIP
- <150%
- 150%-200%
- >200%

Average Monthly kWh Usage

- 0.81 kWh/sqft Customer

% Total Customers in Category:
- 98% Single Family
- 81% Housing Type
- 13% Multi-Family
- 73% Owner
- 25% Housing Status
- 35% Renter
- 35% Electric Heat
- 44% Other Primary Fuel Source

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis
- Low-income & LIEAP/CIP customers use more energy in the winter, less in the summer
- Customers who meet the arrears definition use more kWh per month than other customers year-round
- LIEAP/CIP customers use two times more electricity in winter months per square foot than customers above 200% FPL
- Customers who meet the arrears definition use 50% more electricity in peak winter months per square foot

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis.
LIEAP/CIP customers face a significantly higher total bill burden, particularly in the winter.

Non-LIEAP/CIP customers below 200% FPL do not appear to face a significantly higher total bill burden, especially in the summer.

Customers who meet the arrears definition have a total bill burden nearly 3 times that of non-arrears customers in peak winter months.
The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis.