

Kathleen H. Richard Counsel

NCRH 20 / P.O. Box 1551 Raleigh, NC 27602

o: 919.546.6776

kathleen.richard@duke-energy.com

April 25, 2022

#### **VIA ELECTRONIC FILING**

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

#### RE: Joint North Carolina Low-Income Affordability Collaborative Quarterly Progress Report Docket Nos. E-7, Subs 1213, 1214 and 1187 and E-2, Subs 1219 and 1193

Dear Ms. Dunston:

Pursuant to North Carolina Utilities Commission's ("Commission") March 31, 2021 Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice in Docket Nos. E-7, Sub 1213, E-7, Sub 1214, and E-7, Sub 1187, and the Commission's April 16, 2021 Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice in Docket Nos. E-2, Sub 1219 and E-2, Sub 1193 and the Commission's April 14, 2022 order granting an extension of time, I enclose for filing in the above-referenced dockets the Joint North Carolina Low-Income and Affordability Collaborative Quarterly Progress Report of Duke Energy Carolinas, LLC, Duke Energy Progress, LLC and the Public Staff.

Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

NR.

Kathleen H. Richard

Enclosure

cc: Parties of Record





# North Carolina Low Income Affordability Collaborative

**Quarterly Progress Report** 

**Prepared for:** 



**Duke Energy** 

#### Submitted by:

Guidehouse Inc. 101 S. Tryon Street, Suite 2820 Charlotte, North Carolina 28202 Telephone (704) 347-7626 jamie.bond@guidehouse.com

Reference No.: April 15, 2022

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### 1. Status Reporting for the LIAC

The Low Income Affordability Collaborative ("LIAC" or "Affordability Collaborative") was established by the North Carolina Utilities Commission (the "Commission" or "NCUC") in its April 16, 2021 Order Accepting Stipulations, Granting Partial Rate Increase and Requiring Customer Notice in Docket Nos. E-2, Sub 1219 and Sub 1193 and its March 31, 2021 Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice in Docket Nos. E-7, Sub 1213, Sub 1215, and Sub 1187 ("Rate Case Orders"). In those Rate Case Orders, the Commission directed Duke Energy Progress, LLC ("DEP") and Duke Energy Carolinas, LLC ("DEC", collectively, "Duke Energy") and the Public Staff of the North Carolina Utilities Commission ("Public Staff") to convene a collaborative for interested stakeholders within 90 days of the Rate Case Orders to address the affordability of electric service for low-income customers.

Additionally, the Commission directed Duke Energy and the Public Staff to briefly summarize the progress made by the Affordability Collaborative within 180 days of the date of the DEC Rate Case Order (and quarterly progress reports thereafter).<sup>1</sup> Guidehouse prepared this Q1 progress report on behalf of Duke Energy and the Public Staff to fulfill the quarterly reporting requirement set forth in the Rate Case Orders. This joint filing by Duke Energy and the Public Staff is the Q1 2022 progress report detailing the additional progress made by of collaborative on the affordability of electric service for low-income customers since the Q4 2021 quarterly progress report was prepared<sup>2</sup> through March 31, 2022 ("Q1 Progress Report").

The next and final report will detail the feedback and recommendations obtained in the collaborative and will be filed with the Commission no later than July 27, 2022 ("Final Report").

### 1.1 Stakeholder Participation

During Q1 2022, the LIAC convened as a full group for two (2) planned workshops, the first on February 2, 2022, and the second on March 31, 2022. In addition, prior to these two sessions, the LIAC hosted a joint workshop on January 26, 2022 with members of Duke Energy's Demand-Side Management and Energy Efficiency (EE) Collaborative and the Comprehensive Rate Review (CRR) collaborative.

<sup>&</sup>lt;sup>1</sup> Duke Energy Carolinas, LLC, and Public Staff's North Carolina Low Income Affordability Collaborative 180-day Progress Report in Docket Nos. E-7, Sub 1213; E-7, Sub 1214; and E-7, Sub 1187 and Duke Energy Progress, LLC and Public Staff's North Carolina Low Income Affordability Collaborative 180-day Progress Report in Docket Nos. E-2, Sub 1219 and E-2, Sub 1193 were filed with the Commission on September 27, 2021 in accordance with the Rate Case Orders.

<sup>&</sup>lt;sup>2</sup> Joint North Carolina Low Income Affordability Collaborative Quarterly Progress Report, Docket Nos. E-7, Sub 1213; E-7, Sub 1214; and E-7, Sub 1187, filed with the Commission on January 18, 2022.





#### Figure 1. Conducted and Planned LIAC Sessions

**Figure 1** identifies the seven (7) total LIAC session conducted to date – the four (4) LIAC workshops previously reported as well as the three (3) additional session held since the last quarterly progress report. The LIAC is scheduled to reconvene four (4) additional times over the next quarter.

Since first convening, in July 2021, each LIAC workshop has, on average, had 42 LIAC stakeholder participants per session, excluding Guidehouse facilitators. The January 26, 2022 Joint Collaborative Session had participation from 140 stakeholder participants, excluding facilitators.

**Table 1** list the stakeholder organizations that participated in one or more of the LIAC sessions to date.



#### Table 1 . Organizations That Participated in One or More LIAC Workshops

**Stakeholder Participation in the LIAC** 

#### Organizations in Attendance

- AARP
- Advance Carolina
- Apartment Association of NC
- Appalachian Voices
- Carolina Industrial Group for Fair Utility Rates (CIGFUR)
- Charlotte Area Fund
- Crisis Assistance Ministry
- · City of Raleigh
- Dominion Energy
- Duke Energy
- Duke University Nicholas Institute for Environmental Policy Solutions
- Legal Aid of North Carolina
- National Consumer Law Center
- National Institute Economic Development

- NC Attorney General's Office NC Community Action Association
- NC Dept of Environmental Quality
- NC Dept of Health & Human Services
- NC Justice Center
- NC Office of Recovery & Resiliency
- NC Sustainable Energy Association
- NC Electric Membership Corporation
- Public Staff of NC Utilities Commission
- Rowan Helping Ministries
- Sierra Club Asheville
- Southeast Energy Efficiency Alliance Southern Alliance for Clean Energy
- Southern Environmental Law Center
- Vote Solar

#### 1.2 Joint Collaborative Session (January 26, 2022)

In accordance with Commission directive in the Rate Case Orders approving the LIAC, on January 26, 2022, the LIAC held a virtual joint meeting with the members of Duke Energy's Demand-Side Management and Energy Efficiency (EE) and the Comprehensive Rate Review (CRR) collaboratives to identify and discuss overlapping efforts and key areas of concern and interest as they relate to low-income customers.

During the session, each collaborative provided a 30-minute presentation to provide an update on their respective work streams, including presenters from Duke Energy and individual collaborative members. Following updates, the session shifted to smaller group discussion via virtual breakout rooms, during which session facilitators captured input from participants around areas of intersection between the LIAC, EE, and CRR collaboratives. Participants were asked to reflect on the presentations of the collaborative and to share their impressions of "gaps and opportunities" that remain, as well as potential solutions to affordability issues.

By the end of the breakout sessions, we had gathered dozens of comments, including thirty-six (36) areas of overlapping gaps and opportunities and nineteen (19) overlapping solution areas.

The material presented during the Joint Collaborative Session, as well as a summary of input provided by participants throughout the session is provided in **Appendix B**.

### 1.3 Workshop V (February 3, 2022)

During its fifth workshop held February 3, 2022, following status updates provided by LIAC Subteam Co-Leads, the LIAC focused its discussion on existing income-qualified customer programs currently offered to Duke Energy's North Carolina residential electric customers. Program leaders from Duke Energy provided an overview of the company's low-income energy efficiency offerings and customer assistance program in the North Carolina.

As part of this overview, Duke Energy staff offered high level descriptions as well as recent participation levels, costs and other program statistics for the following DEC and DEP programs:

#### DEC Low-Income EE Programs

- Weatherization and Equipment Replacement Program (WERP)
- Refrigerator Replacement Program (RRP)
- Neighborhood Energy Saver Program (NES)

#### DEP Low-Income EE Programs

- Neighborhood Energy Saver Program 2.0 (NES 2.0)
- Low Income Weatherization Pay for Performance Pilot

Duke staff described program pilots under consideration as well as areas for low-income program enhancement opportunities.

In addition to overviewing customer programs, Duke Energy staff provided an overview of the Helping Home Fund Program and Share the Light Program. The Helping Home Fund Program, a program administered by a third party, provides energy efficiency upgrades at no cost to income-qualified customers for health and safety investment and eligible equipment replacement to help manage their energy costs.

Duke Energy's Share the Light Fund is a customer assistance program that provided bill pay assistance through partnerships with local agencies across North Carolina. The Share the Light Program is funded by customer and employee donations with a match provided by the Duke Energy Foundation. The Share the Light programs provides financial assistance to families struggling to pay their energy bills.

Duke Energy staff provided an overview of the Supplemental Security Income (SSI) bill discount program. The program is designed to provide a bill discount to eligible customers. The maximum total monthly bill discount is \$3.17. The SSI bill discount program is only available to eligible DEC residential customers.





Beyond the income qualified SSI bill discount program, EE programs and customer assistance funds, the LIAC also discussed special discount programs and Commission-identified rate concepts offered in North Carolina. As part of this discussion, LIAC members discussed key consideration around:

- Social Security Income (SSI) Discount eligibility expansion
- Minimum bill concepts
- Income-based rate plans, and
- Rate class segmentation to account for usage levels.

The material presented during Workshop V is provided in Appendix C.

#### 1.4 Commission Briefing (February 21, 2022)

On February 21, 2022, in response to a Commission Order requiring a briefing on the affordability collaborative, the subteam co-leads identified in **Table 2** below, updated the Commission on the progress of LIAC efforts<sup>3</sup>. The limited purpose of the virtual briefing was to allow the LIAC Subteam Co-Leads to update the Commission on the work of the LIAC and to allow Commissioners an opportunity to ask questions.

During the briefing, the Commission inquired about how effective or influential the moratorium for vulnerable customers<sup>4</sup> is regarding generating arrears and/or reducing disconnections. Duke Energy did not have the moratorium data to respond during the briefing but committed to disclose in this Q1 Progress Report. In response to the inquiry, Duke Energy analyzed the moratorium data and determined that, *prior to* the expanding the Winter Moratorium to include Housing Opportunities and Prevention of Evictions Program, Low Income Energy Assistance Program and Crisis Intervention recipients for a limited time-frame, Duke Energy received approximately 400 total requests between 2019 and 2020<sup>5</sup> to participate in the winter moratorium annually. The Winter Moratorium is effective by preventing interruption of disconnect for non-pay from November 1 through March 31.

<sup>&</sup>lt;sup>3</sup> NCUC Order Requiring Briefing on Affordability Collaborative issued February 4, 2022 in Duke Energy Carolinas. LLC Docket Nos. E-7, Sub 1213; E-7, Sub 1214; and E-7, Sub 1187 and Duke Energy Progress, LLC Docket Nos. E-2, Sub 1219 and E-2, Sub 1193.

<sup>&</sup>lt;sup>4</sup> Pursuant to Commission Rule R12-11.I.6 stating "[w]ith respect to bills rendered between November 1 and March 31 of every year and in conformity with the policy considerations expressed by Congress in the Public Utility Regulatory Policies Act (PURPA) of 1978, the notice of proposed termination shall also contain a statement that no termination shall take place without the express approval of the Commission if the customer can establish all of the following: (a) That a member of the customer's household is either handicapped or elderly (65 years of age or older), or both. (b) That the customer is unable to pay for such service in full or in accordance with subsection (I)(3) of this rule. (c) That the household is certified by the local social service office which administers the Energy Crisis Assistance Program or other similar programs as being eligible (whether funds are then available or not) to receive assistance under such programs".

<sup>&</sup>lt;sup>5</sup> DEC received 148 requests in 2019 and 113 requests in 2020 for a total of 261 requests. DEP received 72 requests in 2019 and 48 requests in 2020 for a total of 120 requests.

The material shared with the Commission to support this briefing is provided in **Appendix D**.

LIAC Subteams	Subteam Co-Leads
Subteem A Customer Chellengee	Rory McIlmoil, Appalachian Voices
	Arnie Richardson, Duke Energy
Subteem P Affordebility Matrice	La'Meshia Whittington, Advance Carolina
Sublean B – Anordability Methos	Conitsha Barnes, <i>Duke Energy</i>
Subteam C – Rates and Programs	Detrick Clark, North Carolina Community Action Association
Subteam D – Collaborative Coordination	Thad Culley, Sunrun

### 1.5 Workshop VI (March 31, 2022)

During the final LIAC session of the quarter, held March 31, 2022, in addition to receiving status updates from LIAC Subteam Co-Leads, session participants received updates from the EE/DSM Collaborative and the CRR Collaborative liaison on key overlapping activities of their respective collaboratives. Notably, CRR Collaborative liaison referenced the conclusion of the formal comprehensive rate study and the Comprehensive Rate Design Study Roadmap filed with the Commission March 21, 2022.<sup>6</sup>

During Workshop VI, LIAC Subteam B members provided an overview of the subteam's research findings related to how "affordability" is defined and applied in other jurisdictions and the associated metrics or definitions for "affordability". As part of this discussion, LIAC presenters reviewed the affordability rulemaking activities undertaken by the California Public Utilities Commission (CPUC) and its subsequent 2019 Annual Affordability Report, issued on April 29, 2021.<sup>7,8</sup> During this workshop, LIAC members were provided the opportunity to learn about and discuss the CPUC decision defining *affordability* as:

" [...] the degree to which a representative household is able to pay for an essential utility service charge, given its socioeconomic status."

Session participants also discussed the three (3) independent, but related, metrics identified by the CPUC, offering a more complete view of affordability than use of an individual metric. These metrics were:

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<sup>&</sup>lt;sup>6</sup> Duke Energy, Comprehensive Rate Design Study Roadmap, filed March 31,2022 in Docket No. E-7, Sub 1214 and in Docket No. E-2, Sub 1219, for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, respectively. <a href="https://starw1.ncuc.net/NCUC/ViewFile.aspx?ld=ae123c0c-dd0e-4369-ac70-d3d02915299c">https://starw1.ncuc.net/NCUC/ViewFile.aspx?ld=ae123c0c-dd0e-4369-ac70-d3d02915299c</a>

<sup>&</sup>lt;sup>7</sup> California Public Utilities Commission ("CPCU") issued an Order Instituting Rulemaking (R.18-07-006) to develop a framework and principles to identify and define affordability criteria

<sup>&</sup>lt;a href="https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M218/K186/218186836.PDF">https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M218/K186/218186836.PDF</a>

<sup>&</sup>lt;sup>8</sup> California Public Utilities Commission, 2019 Annual Affordability Report, April 2021. < https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/reports/2019-annual-affordability-report.pdf>



- Affordability Ratio (AR) metric, defined as the percentage of a representative household's income that would be used to pay for an essential utility service, after nondiscretionary expenses such as housing and other essential utility service charges are deducted from the household's income;
- Hours at Minimum Wage (HM) metric, defined as the hours of earned employment at the city minimum wage necessary for a household to pay for essential utility service charges; and
- Socioeconomic Vulnerability Index (SEVI) metric, defined as the relative socioeconomic standing of census tracts, referred to as communities, in terms of poverty, employment, educational attainment, linguistic isolation, and percentage of income spent on housing.

As part of this discussion, Subteam B also overviewed its findings of an analysis of program eligibility of existing low-income programs offered in North Carolina. The analysis includes eligibility criteria for the following programs:

- Low Income Energy Assistance Program (LIEAP),
- Crisis Intervention Program (CIP),
- Housing Opportunities and Prevention of Eviction Program,
- North Carolina Department of Health and Human Services Food and Nutrition Services,
- North Carolina State Weatherization Program, and
- DEC and DEP Neighborhood Energy Saver Program.
- DEC Income-Qualified Weatherization

The subteam concluding recommendations were that the Commission should consider household incomes equal to or less than 200% of federal poverty level when determining eligibility for programs to address affordability, and that the design of these programs should consider heating and cooling source and dwelling (i.e., owner/renter and single-family/multifamily).

The detailed material presented during Workshop VI is provided in Appendix E.



### 2. LIAC Progress Towards Objectives

The objectives of the LIAC are outlined in the Rate Case Orders. Efforts towards achieving these objectives continue to be made at the LIAC subteam level through key subteam tasks. The subsections below describe the progress related to these key tasks made by the LIAC over the last quarter.

#### 2.1 Assessment of Customer Challenges

Following the distribution of its NC Low Income Collaborative Customer Analytics, version 3, Subteam A members have taken LIAC comments and identified several areas where the analytics could be enhanced. As part of these enhancements, Subteam A revised the customer analysis to modeled for only customers below 200% of the federal poverty level. For the analysis, the subteam developed an ordered logic model to assess customers against three rankings.

- o Customer is classified as struggling with arrears within 1 year period
- o Customer has received notification of disconnection within 1 year period
- o Customer has been disconnected due to non-payment within 1 year period

Subteam A considered the most relevant variables in its modeling, including race, household type, population density, heat source, owner/renter status, property type, and education level). They also included measures for determining electric burden during peak summer and winter months to account for impacts of temperature extremes. The group also considered factors such as age of account holder on in their final analysis.

Subteam A socialized a revised version of the Customer Analytics and will continue to refine and seek ways to test key assumptions to drive additional confidence in the LIAC Assessment of Customer Challenges prior to its final submission to the Commission.

### 2.2 Suggested Affordability Metrics

During the past quarter, Subteam B completed its initial research, discussing findings. After determining that "affordability" has not been broadly defined or formally applied in other jurisdictions and that its definition, context, and application could vary due to a number of factors, the subteam aligned around a set of guiding principles meant to drive how eligibility metrics and program goals may be developed and justified.

Subteam B also explored the use of energy burden and energy intensity as potential metrics for assessing affordability. The group developed draft Affordability Principles, sharing its initial conclusions during Workshop 6 on March 31, 2022. The group continues to explore any



additional research needed to bolster or revise the Subteam B recommendations for affordability metrics prior to finalization.

#### 2.3 Recommending Rates and Programs

Over the past quarter, the LIAC has taken a number of actions to begin assessing billing practices, existing rates, customer assistance and energy efficiency programs that support energy affordability. Many of the research related efforts were initially delegated to members of five (5) Subteam C working groups. These were:

- **Statutory and Regulatory Working Group** positioned to support Subteam C in addressing the legal and regulatory questions posed by the Commission;
- DNP and Disconnections Working Group assigned to consider potential modifications to practices and regulatory provisions related to disconnections for nonpayment;
- EE Programs and Energy Burden Working Group tasked with compiling responses to Commission questions related to customer eligibility, participation rates, and impacts on energy burden for existing income qualified programs offered in North Carolina
- Rates and Causation Working Group assigned to develop a position on the appropriateness of the implementation of a minimum bill, of income-based rates, of customer segmentation of residential rate class based on energy usage levels, and the expansion of the DEC SSI discount program; and
- Success Measures and Program Impact Working Group assigned to examine potential success criteria to be used for affordability programs and develop recommendations to share with the subteam.

In parallel to the Subteam C working group efforts, Subteam C Co-Leads leveraged the knowledge of the Duke Energy subteam C members, requesting those members provide a utility perspective on the effect of income qualified programs on cost-causation and allowance of costs among classes as well as seeking the utility's perspectives on potential improvements to disconnections for nonpayment practices. Subteam co-leads also tapped Dominion Energy subteam members to share insights and key takeaways related to the utility's recent implementation of percent of income payment plan in its Virginia service area. Subteam members continue to review both third-party assessments and self-assessment of low-income programs as they are made available.

In an effort to reduce the number of subteam C working group report outs and to accelerate progress towards completing the tasks set out in the Rate Case Order, the five (5) Subteam C Working Groups have consolidated into two (2) larger working groups focused on finalizing and documenting Subteam C recommendations in advance of Workshop 7 where they will be shared with the broader LIAC.

#### 2.4 Collaborating with EE and CRR Collaboratives

Organized by Subteam D and as described above, the LIAC held virtual joint meeting with the EE/DSM and CRR collaboratives on January 26, 2022 to specifically identify and discuss key areas of concern. Based on feedback provided by participants during the joint session, LIAC identified cross-collaborative liaisons (including representatives from Duke, the Public Staff, and other organizations). These liaisons have been tasked with sharing updates from any relevant LIAC workstreams with the other collaboratives and to report back to the LIAC on any notable updates related to areas of overlap between the groups.

To stay abreast of and consider the ongoing work of the separate teams as they each carry out their work, the LIAC has included a standing agenda item in every workshop to give space for these liaisons to provide updates, as needed. Additionally, each of the collaboratives have agreed to continue to populate a public portal page where collaborative meeting material is posted for public access.

#### to achieving sufficient consensus, session faciliatory will overview the results of Pitch Day and the results of the program prioritization activities. Subteam C will lead the LIAC through a discussion of existing utility and external funding sources that are available to address affordability as well as its approach to estimating the level of resources that would be required

North Carolina Low Income Affordability Collaborative

discussion of existing utility and external funding sources that are available to address affordability as well as its approach to estimating the level of resources that would be required to serve the customers who would potentially be eligible for the portfolio of programs being recommended by the collaborative.

The next LIAC workshop (Workshop 7) will be held May 19, 2022. During Workshop 7, subject

On April 20, 2022, the LIAC will host a forum for any of the LIAC members who have proposed a new or revised program for LIAC consideration to advocate for their proposals and address any material questions posed by LIAC members. Prior to Pitch Day, LIAC members will receive a briefing packet containing all program proposal submitted by LIAC members and will have had

an opportunity to provide initial feedback on the proposals prior to Pitch Day. Following Pitch Day, each LIAC member organization will participate in a voting process to rank each of the proposals submitted. The result of this process will be the basis for the portfolio of programs for

addressing affordability that will be recommended to the Commission later this year.

Additionally, Subteam C will build report out on the findings, positions and recommendations related to the following questions posed by the Commission in the Rate Case Orders.

- How do specific programs addressing affordability affect cost-causation and allowance of costs among classes?
- How does cost-of-service allocation affect rate design and affordability of rates?
- What, if any, practices and regulatory provisions related to disconnections for nonpayment should be modified or revised?
- What are the opportunities (and challenges) of the utilities working with other agencies and organizations to collaborate and coordinate delivery of programs that affect affordability concerns?

During Workshop 8, scheduled June 16, 2022, Guidehouse will facilitate a discussion of the LIAC draft recommendations to the Commission. During Workshop 9, scheduled for July 7, 2022, Guidehouse will overview any revision to the draft recommendation made as a result of LIAC feedback and seek endorsement of a final set of recommendations to be reported to the Commission.

# Guidehouse

3. LIAC Upcoming Activities

3.1 Program Proposal "Pitch Day"

3.2 Remaining Workshops Planned



### 4. Progress Report Summary

In summary, as of the date of this report, the LIAC has made following progress.

- Engaged Duke Energy's other two North Carolina collaboratives to identify and discuss key areas of concern and has defined an approach for stay abreast of and consider the ongoing work of the separate collaboratives as they each carry out their work.
- Prepared a draft assessment of current affordability challenges facing residential customers which includes an analysis of demographics of residential customer and provides additional analysis of specific demographic clusters.
- Researched trends in affordability and explored how "affordability" is defined and applied in other jurisdictions.
- Developed draft recommendation for qualitative and quantitative criteria that the Commission should consider when determining who would be eligible for different types of affordability programs.
- Began investigating the strengths and weaknesses of energy efficiency programs and customer assistance programs in addressing affordability and identified percentage of residential customers eligible for each existing program and the percentage of eligible customers enrolled.
- Began investigating the strengths and weaknesses of rate design, billing practices, including the (1) minimum bill concepts as a substitute for fixed monthly charges; (2) income-based rate plans and (4) expanded eligibility for DEC's SSI-based program.
- Developed a program proposal approach to support the LIAC in determining if existing programs be maintained, replaced or changed to improve results and identifying proposed replacement programs where appropriate.

### Appendix A. Organizations Invited to Participate in LIAC

The list of stakeholder organizations approved by the Commission and invited to participate in the LIAC is provided below.

- AARP
- Advance Carolina
- Apartment Association of North Carolina
- Appalachian Voices
- Carolina Small Business Development Fund
- ChargePoint
- Charlotte Area Fund
- Carolina Industrial Groups for Fair Utility Rates (CIGFUR)
- City of Raleigh
- Crisis Assistance Ministry
- Dominion Energy
- Duke Energy
- Legal Aid of North Carolina
- National Association for the Advancement of Colored People (NAACP)
- National Institute Economic Development
- North Carolina Attorney General's Office
- North Carolina Community Action Association
- North Carolina Dept of Environmental Quality (State Weatherization)
- North Carolina Dept of Health and Human Services
- North Carolina Justice Center
- North Carolina League of Municipalities
- North Carolina Office of Recovery & Resiliency (HOPE/ERA)
- North Carolina Sustainable Energy Association
- North Carolina Electric Membership Corporation (NCEMC)
- Nicholas Institute (Duke University)
- Public Staff of the North Carolina Utilities Commission
- Rowan Helping Ministries
- Sierra Club
- Southeast Energy Efficiency Alliance (SEEA)
- Southern Alliance for Clean Energy (SACE)
- Southern Environmental Law Center (SELC)
- Sunrun
- Vote Solar



## Appendix B. Joint Collaborative Session

On January 26, 2022, the LIAC members held a virtual joint meeting with the members of Duke Energy's Demand-Side Management and Energy Efficiency (EE) and the Comprehensive Rate Review (CRR) collaboratives to identify and discuss overlapping efforts and key areas of concern. As result of input provided during breakout discussions, the combined group identified areas of distinct overlap between the three groups, as well as gaps and opportunities. A summary of key input is provided below with the full breadth of input provided at the end of the Joint Collaborative Session presentation material provided in this appendix.

Examples of gaps and opportunities included:

- Considerations for addressing customer challenges for affordability (one-size fits all approach hard to match with the individual challenges customers with high energy burden may be facing)
- Gaps in addressing differences in quality of housing stock (in terms of barriers to eligibility for cost savings programs, cases where homes are not fit for EE measures)
- Needs for approaches to better serve hard-to-reach customers; opportunities to streamline the process of program enrollment or assistance to make it quick and easy from their perspective
- Needs for balancing utility administrative costs in program delivery to maximize benefit to customers
- Needs for secure durable, sustainable funding streams to pay for programs, including potential programs like a percentage of income payment plan

Examples of recommended possible solution areas for consideration included:

- Improving, expanding, or better integrating customer <u>offerings</u> (suite of programs EE, rates, policies, etc.) to better serve customers; offer support for longer-term solutions and helping home funds, on-bill financing programs
- Streamline administrative processes through the development of a "one-stop" for customer applications for assistance and services; ensure complimentary programs are additive to existing resources; create data sharing with other administrator agencies to better coordinate assistance; consider auto enrollment based on enrollment of other government support programs
- Focus customer engagement efforts on simplicity of customer interaction; better collaborate with community stakeholders to overcome issues with trust and legitimacy of offerings; coordinate with service agencies to qualify customers



# North Carolina Low Income Affordability Collaborative

# Joint Collaborative Session

January 26, 2022

Convened by





# Welcome

Guidehouse

Public Staff

# Meet the Session Facilitators



## NNEOMMA NWOSU Breakout Facilitator

MINA HEALEY Breakout Facilitator



Guidehouse

# JAMIE BOND

Lead Facilitator for LIAC and Joint Workshop

## VIJETA JANGRA Breakout Facilitator



3





#### **SESSION OBJECTIVES**

**Guidehouse** 

- Understand the overlapping work of the LIAC, EE, CRR collaboratives
- Determine how each collaborative might stay abreast of the ongoing work of other two collaboratives as each carries out their work

**Public Staff** 

# **NC Joint Collaborative Session**

Agenda | January 26, 2022

## Hosted by NC Low Income Affordability Collaborative (LIAC)

#### CONVENE

	Welcome, Safety & Agenda	Jamie Bond (Guidehouse)	20 min
•	Joint Session Objectives	Conitsha Barnes (Duke)	~30 11111
	COLLABORATIVE OVERVIEWS		
11	NC Demand Side Management and Energy Efficiency (EE) Collaborative	EE Collaborative Members	~ 90 min (10 break)
	NC Comprehensive Rate Review (CRR) Collaborative	CRR Collaborative Members	
	NC Low Income Affordability Collaborative (LIAC)	LIAC Collaborative Members	
	TOPICAL DISCUSSIONS		
	Facilitated Group Discussion	All	60 70 min
	Looking Ahead / Closeout	Jamie Bond	00-7011111
	ADJOURNING	All (GH Facilitated)	

# **Objectives**

STATE OF NORTH CAROLINA UTILITIES COMMISSION RALEIGH DOCKET NO. E-7, SUB 1213 DOCKET NO. E-7, SUB 1214 DOCKET NO. E-7, SUB 1187

STIPU

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1213

in the Matter of Petition of Duke Energy Carolinas, LLC, for Approval of Prepaid Advantage Program DOCKET NO. E-7, SUB 1214

Application by Duke Energy Carolinas, LLC,

Application by Duke Energy Caronnas, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina

DOCKET NO. E-7, SUB 1187

Application of Duke Energy Carolinas, LLC for an Accounting Order to Defer Incremental om Damage Expenses Incurred as a Result of Hurricanes Florence and Michael sday, January 15, 2020, at 7:00 p.m., in Cou 5 West Main Street, Franklin, North Ca nuary 16, 2020, at 7:00 p.m., in the Bur Street, Morganton, North Carolina January 29, 2020, at 7:00 p.m., in t onesolay, January 29, 2020, at 1.00 pint, oric Courthouse, 1 SE Court Square, Graham Thursday, January 30, 2020, at 7:00 p.m., in Courtro County Courthouse, 832 East 4th St.

Given the overlapping nature of the work of the energy efficiency collaborative, the proposed rate study effort, and the affordability collaborative, those working on the three efforts should, to the extent possible, stay abreast of and consider the ongoing work of the separate teams as they each carry out their work.

[The Commission recommends a] joint meeting of the three groups to specifically identify and discuss key areas of concern.

Source: Docket No. E-7, SUB 1214 | Application by Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina | Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice | Evidence and Conclusion for Finding of Fact NOS. 52-54

Public Staff Guidehouse North Carolina Utilities Commission

# DUKE ENERGY

**Demand Side Management & Energy Efficiency Collaborative** 

## **Comprehensive Rate Review Collaborative**

## Low Income Affordability Collaborative

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# Welcome

# Check the Tech: Who's in "the room"?



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# Collaborative Overviews

Apr 25 2022





Presented at the LIAC Joint Collaborative Session, January 26, 2022

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# Carolinas DSM/EE Collaborative

**Tim Duff** *Duke Energy* 

Forest Bradley Wright Southern Alliance for

Clean Energy

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# **Carolinas DSM/EE Collaborative**



**EE Collaborative** 

## Purpose

- Originally convened in 2007 to develop the first portfolio of approved DSM/EE programs for DEC
- Took its current form through a series of settlement agreements beginning in 2010
- Not a decision-making body, but rather an open forum focused on maximizing Duke's EE efforts
- NCUC (and soon after the PSCSC) recognized the following:
  - "the successful development and implementation of EE programs required constant monitoring and modification, and that an advisory group is helpful in that regard"
  - "The Commission finds that the Advisory Group provides an important forum for Duke to receive input from a variety of stakeholders. The implementation of the Advisory Group will facilitate innovation and accountability."

# MISSION STATEMENT

The Duke Energy Carolinas Collaborative is an advisory group of interested stakeholders, from across North and South Carolina, representing a wide array of customer groups and interests related to energy efficiency. The Collaborative is a forum for providing insight and input concerning topics related to energy efficiency and DSM including program design and development; measurement and evaluation; regulatory and market conditions; specific issues or topics as requested by the NC Utilities Commission and the Public Service Commission of SC; and emerging opportunities to achieve cost-effective energy savings.

# Membership

- Clemson University Industrial Assessment Center
- NC State University
- NCSEA
- Environmental and Energy Study Institute
- SC Coastal
- Environmental Defense Fund
- DEQ
- SACE
- Energy Futures Group
- ACEEE

- **Upstate Forever**
- NC DENR
- SC State Energy Office
- NC Housing Coalition
- CUCA
- Green Built Alliance
- SC Community Action Partnership
- NC Justice Center
- Blue Horizons Project
- NC Public Staff
- SC ORS

- Institute of Energy Professionals
- Clean Energy Group
- Advanced Energy
- Vote Solar
- Apartment Association of NC

**Public Staff** 

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# CCUC 3C-1

Understand the obstacles Duke faces to expanding EE/DSM and use the influence of our separate organizations to overcome those obstacles

Be the voice for the

constituents the members

represent

Bring the best ideas from around the country to Duke staff Vet Duke's programs so that customers can be sure they are the result of a good faith effort to serve responsibly

Advance the cause of EE/DSM on all levels

Support efforts, both inside and outside Duke, to innovate and expand EE/DSM customer programs into the next era of EE technology

# Signs of Successful Collaboration



# Regular, robust engagement

- Meets at least every other month often more
- Agenda set by members
- Annual priorities from members and Commissions



# Fewer issues requiring litigation

- Program modifications and development vetted in the Collaborative
- Informal information sharing promotes problem solving and trust
- Commission may direct the Companies to work with the collaborative to investigate areas of interest

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Transparency regarding program performance and operation

- EM&V and program changes discussed in advance of filing
- SME give explanations and receive feedback on marketing, measures, challenges, etc.

# **Neighborhood Energy Saver**

- Offered in both DEP and DEC
- Targets neighborhoods with at least half of residents at or below 200% of FPL
- No individual income qualification necessary
- Begins with coordinating a neighborhood event along with community organizations
- Each participating home receives the following:
  - In-home, walk-through energy assessment to identify EE opportunities
  - One-on-one education on EE techniques and measures
  - Comprehensive package of energy efficient measures installed by the auditor
- The goal in 2021 was to serve 11,500 homes in NC and SC



# **Income Qualified Programs in the Carolinas – Weatherization**

# Weatherization and Equipment Replacement Program

- Currently offered in DEC only, but expansion into DEP is underway
- Delivered by the State agencies that administer the state's weatherization programs
- Participating homes receive a full energy audit to determine appropriate measures
- Homes may receive any or all of the following:
  - Tier 1 homes receive \$600 in weatherization measures
  - Tier 2 homes receive up to \$4,000 for insulation, duct repair and air sealing;
  - Tier 2 homes may also receive up to \$6,000 for a heating system replacement with a 15 or greater SEER heat pump
  - Any home could be eligible for refrigerator replacement with an Energy Star appliance.
- 2021 Goal was 535 Weatherization projects and 275 refrigerator replacements



# **Pay for Performance Pilot**

- In Buncombe County, NC (DEP territory)
- Provides incentives to local weatherization assistance providers and other non-profit organizations
- Incentive payments are based on the kWhs saved from the additional EE measures installed
- Goal is to fund more measures than the organizations would have been able to afford
- Pilot approved for 3 years with 6-month extension for EM&V; currently in year 3
- Through June 2021, the pilot has served 297 homes and incentivized 3,480 measures



# **Studies Underway – Non-Energy Benefits**

Goal is to identify and quantify the benefits with the greatest value to the programs

Values can be used to make TRC more accurate by including all benefits not just energy-related ones

modeling to quantify pertinent non-energy benefits (benefits beyond energy and demand savings) for customers and the utility

residential customers participating in the following programs:

- Smart \$aver EE Program (HVAC)
- My Home Energy Report (MyHER) Program
- Income-Qualified EE and Weatherization Program for Individuals
- Residential Energy Assessment Program
- Multifamily EE Program

Study expected to be complete early Q2

## **Studies Underway – LMI Participation**

Characterize LMI customer participation in Duke Energy's energy efficiency programs;

Compare LMI customer participation to that of non-LMI customers;

Measure energy burden reductions achieved through LMI customers participating in Duke Energy's programs;

Identify drivers and barriers to participation among LMI customers; and

Identify strategies to increase LMI customer participation through programmatic enhancements.

#### The LMI study scope includes activities such as

• participation analyses in LMI and non-LMI programs

consumption analyses

• customer surveys to assess drivers and/or barriers to participation

• arrearage and service disconnections analyses

• provide insight into how Duke Energy can enhance programs to increase market penetration in the targeted populations and neighborhoods in the most cost- effective manner possible.

#### Targeted completion in August 2022

Low Income defined as up to 50% of area median income and moderate is 50-80% of area median income

**EE Collaborative** 



# EE Collaborative Current Low-Income Program Efforts

Forest Bradley Wright Energy Efficiency Director Southern Alliance for Clean Energy DFFICIA

# **EE Collaborative Low-Income Priorities**

- Expand the scale of low-income EE spending and impact
- Serve customers with the greatest need, including hard to reach customer segments
- Deliver enough savings to meaningfully impact household finances
- Close the spending and savings gap between DEP and DEC
- Overcome program delivery barriers in South Carolina


## **DEC Durham Pilot**

Lessons Learned and Next Steps

- A modified deployment of DEC Income Qualified Weatherization program
- Administered directly by North Carolina Community Action Assoc.
- Able to serve customers not receiving WAP dollars
- Qualifying customers are both low income and high energy intensity
- Increased per household spending allowed for both HVAC replacement and comprehensive package of EE retrofits
- The pilot's added flexibility enabled DEC to spend its full program budget
- A process evaluation noted promising potential, but lacked full measurement and verification analysis needed for permanent deployment

## **DEP Income Qualified Weatherization**

- Built off the existing DEC Income Qualified Weatherization program
- Deeper savings and farther reach than Neighborhood Energy Saver
- Will help to close a spending, savings, and program offering gap between DEP and DEC
- Currently in stakeholder input stage
- Advocates are seeking flexibility in program design to serve non-WAP customers, allow spending limit flexibility, and accommodate future insights from upcoming pilot programs

## 2020 Duke Rate Case Settlement Overview

Settling parties: DEC/DEP, NCSEA, NCJC, NCHC, NRDC, SACE

- \$6 Million of shareholder dollars for the Helping Home Fund
- Low Income Energy Efficiency Pilot Programs
- Tariffed On-Bill EE Pilot Program



**EE Collaborative** 

## Helping Home Fund 2020 Rate Case Settlement Agreement

- Added \$6 million to a pre-existing shareholder funded program
- Free of EE-only spending restrictions that apply to ratepayer funds
- May be used for health, safety, and incidental repair work that would otherwise prevent access to EE services
- 2017 analysis found significant energy and non-energy benefits
- Advocates recommending use of HHF dollars exclusively to leverage and expand beyond what Duke ratepayer funded programs cover:
  - 1. Health, Safety, and Incidental Repairs
  - 2. Additional EE improvements above existing per home limits (based on needed)
  - 3. Reaching low-income households who would not otherwise have been served by WAP or other Duke income-qualified EE programs

## Low-Income EE Pilot Programs

2020 Rate Case Settlement Agreement

### Pilot Concept 1: Deep Retrofits for High Energy Use Income Qualified Customers

Follows through on insights from the Durham Pilot

Also examining effect on persistent arrearages, energy burden, and winter peak Concept to be presented to the EE Collaborative on January 27th

### **Pilot Concept 2: Comprehensive Multifamily**

Seeks to deliver deep efficiency savings to highly prevalent but hard to reach customers

Unique challenges to overcome:

- Split incentive between renters / landlords
- Improvement measures impact multiple customers
- Limited data available for analysis

Pilot concept is at an earlier stage of development, application later this year

## **Tariffed On-Bill Pilot Program**

2020 Rate Case Settlement Agreement

- Save money on utility bills while overcoming upfront cost barrier
- Pay-As-You-Save or other mutually agreed upon design
- Serve 700-1000 participants over three years
- Ultimate aim is to scale up throughout Duke's service territory in the Carolinas
- 11 issue criteria are identified in Settlement Agreement
- Intended to be accessible regardless of customer credit history
- Monthly working group meetings open to all interested parties

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## The Cost Effectiveness Framework

- 0.5 Utility Cost Test (UCT) threshold for income qualified programs
- What drives up costs when serving low-income customers?
- Who gets served, who does not
- Potential implications of Non-Energy Benefits analysis (underway)
- The need for additional low-income customer resources
- Leveraging non-utility sources of funding
- Coordination of EE and non-EE services to cover the gaps

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## **Cross Collaborative Coordination**

- Data sharing
- Recognizing needs and covering gaps
- Delegation and coordination of work efforts
- Identifying additional (non-utility) resources
- Establishing a broad base of support ahead of NCUC applications



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Comprehensive Rate Review Collaborative Bradley Harris Duke Energy

Thad Culley Sunrun





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## Comprehensive Rate Review Study

Presentation for Joint CRR/LIAC/EE Collaborative Meeting





### Comprehensive Rate Review

- Overview
- Recap of various topics
  - TOU Period Review
  - Net Metering
  - EV Rate Design
- Residential Rate Design Thad Culley
- Cross-over with LIAC

**CRR Collaborative** 

## Overview of the Comprehensive Rate Review (CRR)

#### Scope

Comprehensive: all current rate schedules + new rate structures

### Deliverables

- A comprehensive review of Duke's rate offerings: load/cost and rate schedule evaluations
- A roadmap for how Duke plans to evolve its rates over time: sequencing, timelines, additional studies, etc.

### Timing

- 12 months, ending March 31, 2022 with NCUC filing
- Quarterly Progress Reports:
  - Recently published: October 21, 2021 (Q3 2021)
  - Next: January 21, 2022 (Q4 2021)

#### Process

- Facilitator: ICF
- Stakeholder Forums
  - Forum 1: August 25, 2021
  - Forum 2: November 16, 2021
  - Forum 3: February 10, 2022
- Stakeholder Working Groups (WGs)
  - WG1: Fast Track TOU, NEM, EVs
  - WG2: Hourly Pricing & Economic Development
  - WG3: Residential
  - WG4: Non-Residential

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## Overview of Stakeholder Engagement from August-November

#### Working Group 1: Fast Track Topics

#### Since last forum

- Subgroup E: Review Load Forecasting Data (NDA Only) – 9/2
- Subgroup F: Bill Impact Follow-up/Final Discussion – 9/14
- Session 2: EV Rates 9/29
- Subgroup A: Residential EV Rates 10/27
- Subgroup B: Non-Residential EV Rates 11/4
- Subgroup C: Residential EV Rates 11/10

#### Upcoming

 Subgroup D: Non-Residential EV Rates 11/17

#### Working Group 2: Hourly Pricing & Economic Development

#### Since last forum

- Session 1: Hourly Pricing
   9/15
- Subgroup A: Marginal Cost Pricing Analysis 9/21
- Subgroup B: Stakeholder Presentations 9/28
- Subgroup C: Modified Economic Development Rider, Dynamic Pricing for Large Businesses 10/12
  Subgroup D: Expanded HP rate, CBL 10/19
  Subgroup E: Reviewed HP
- and Econ Dev feedback to date 11/2

Upcoming • Session 2 - December Working Group 3: Residential Rates

#### Since last forum

- Residential Rate Overview – 9/20
- Session 1: Existing Rates and TOU Proposal Review 9/27
- Session 2: HB 951, Tariff Availability, Schedule RT,
- Fixed Charges and Min Bill Analytics – 10/20
- Session 3: Analytics 11/3

**Upcoming** • Session 4 – 12/10

#### Working Group 4: Non-Residential Rates

#### Since last forum

- Session 2: Load-Factor Based Rates 9/8
  Subgroup A: non-
- residential NEM 9/14
- Subgroup B: Load
- Aggregation 9/15 • Session 3: Demand
- Response & Interruptible/Curtailable Rates10/13

**Upcoming**Duke Subgroups C-GSession 4 – late Feb.

## Additional Activities

#### Parallel efforts

- Low-Income Stakeholder Collaborative
- DSM/EE Stakeholder Collaborative
- Electric Transportation Stakeholder Working Group (presentation on CRR efforts given on 11/12)

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\*From Principles of Public Utility Rates by James Bonbright

**CRR Collaborative** 

**CRR Collaborative** 



"Flexibility is necessary to ensure robust discussion amongst stakeholders."

## Aligning TOU Periods between DEC/DEP and Rate Schedules



**CRR Collaborative** 

## New Time of Use Proposal

OFFICIAL COPY Overnight Discount for EV charging in all months Fewer peak hours overall Apr 25 2022 Workday Hour Ended 1 2 3 10 12 13 14 15 18 19 20 21 22 23 24 4 5 6 7 8 9 11 16 17 January February Peak Discount March April May June Discount Peak July August September October Peak Discount November December Shorter peaks are easier for Mid-day Discount reflects customers to respond to impact of solar

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## **Residential EV Rate Designs**

#### Activities and findings to date – EV Rates (Initial discussion session – 9/29)

- Duke presented on the scope of the EV rates discussion within the context of the CRR, as well as actions Duke has taken to date regarding EVs.
- Four stakeholders presented on EV rate designs topics & case studies, including: principles for EV rate design, effective residential EV design, residential charging in Xcel territory in Minnesota, PG&E EV subscription rate. Stakeholders provided the following feedback in response:
  - Stakeholders consistently highlighted a need to consider the interactions between EV charging and other customer-sited energy technologies such as solar, battery storage, and smart thermostats.
  - Stakeholders highlighted a desire to avoid demand charges in EV rate design, indicating a preference for TOU rates that encourage off-peak charging and charging during times when excess solar is available on the grid.
  - Stakeholders provided mixed opinions on EV subscription rates for residential customers. Some stakeholders presented in favor of
    exploring subscription rate options at the initial EV rates meeting, but subsequent proposals have not been broadly supported by
    stakeholders.
  - Stakeholders were interested in exploring managed charging options, EV-only TOU rates, and credits for charging off peak.

### Non-Residential EV Rate Designs

## Activities and findings to date – Non-Residential EV Rates (Subgroup on 11/4)

In response to stakeholder case studies and reactions to case studies, Duke presented several **Non-Residential** EV rate options:

- TOU Rates:
  - Duke presented how the new TOU periods could benefit EV charging by offering shorter peak periods and creating a discount TOU period.
- Transitional Relief:
  - Duke presented potential economic development options as a way of kickstarting the market.
- Low-Load Factor Rates:
  - One stakeholder indicated that LLF rates would only help in specific applications.
  - Another stakeholder expressed that there were pathways to creating permanent LLF rates.

- Hourly Pricing Rate:
  - One stakeholder indicated that current thresholds for participation in hourly rates should be revisited (as it has been discussed in WG #2)
  - Another stakeholder indicated that Duke might need to revisit the way that hourly pricing is included in cost-ofservice studies if the rate's applicability is modified.
  - Another stakeholder indicated that this is a complex rate design
- Critical Peak Pricing (CPP):
  - One stakeholder was interested in learning exactly how high critical peak prices would be, so as not to discourage customers from charging in emergencies. Another stakeholder thought CPP prices should be very high, so as to encourage responsive behavior.
  - One stakeholder emphasized CPP rates should be optional. Duke indicated the rate would remain optional for EV customers.
  - One stakeholder indicated that fleets would be very willing to respond to CPP events as long as they are infrequent.

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## **Net Metering Discussions**

### **Rate Schedule Design**

Design **TOU periods** that reflect system costs based on historical load, load forecasts and reliability studies

Calculate **TOU prices** that are revenue-neutral to the rate class using the Cost Duration Model and most recent approved Cost of Service Study

#### Cost Duration Model: 2026



### **Net Metering Design**

Design NEM structure based on industry best practices and local experience/context

- Netting policy
- Non-bypassable charges
  - Grid access fee
    - Minimum bill

Refine prices to minimize embedded and marginal crosssubsidization

#### KEY ELEMENTS OF SOLAR CHOICE SETTLEMENT



#### Presented at the LIAC Joint Collaborative Session, January 26, 2022

### **Impact Analysis**

**Customer**: Estimate bills, savings and payback period using actual customer usage and solar data

Rate Class: Calculate cost of service for NEM customers and compare with estimated revenue from new design

- Embedded view (rate base)
- Marginal view (incremental)

#### Embedded Costs – DEP COS Calculations



## **Overview of Current Residential Offerings**

## DEC

- Residential Service (RS)
- Residential Service, Electric Water Heating and Space Conditioning (RE)
- Residential Service, Energy Star (ES)
- Residential Service, Time of Use (RT)
- Residential Service, Time of Use with Critical Peak Pricing (RSTC)
- Residential Service All-Electric, Time of Use with Critical Peak Pricing (RETC)

## DEP

- Residential Service (RES)
- Residential Service, Time of Use (R-TOUD)
- Residential Service, Time of Use (R-TOU)
- Residential Service, Time of Use with Critical Peak Pricing (R-TOU-CPP)

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## **Residential Rate Design Issues Discussed**

- Minimum Bill Analysis (same as shared with LIAC)
- DEC-NC RE, Declining Block Rate
- DEP-NC RES, Seasonal Price Difference
- All Electric Rate Design Option
- Demand Charge TOU Options
- Residential Rate Availability (i.e. permanent foundation language)

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### **CRR Collaborative**

## **Cross-Subsidy Analysis by Income and Arrears Status**



Presented at the LIAC Joint Collaborative Session, January 26, 2022

## Delineation between CRR and LIAC

### <u>CRR</u>

- Analysis of rate designs
- Impact of rate designs on multiple policy priorities including low-income/vulnerable customers

### LIAC

- Analysis of low-income/vulnerable customers
- Consideration of programs to aid lowincome/vulnerable customers including:
  - Additions to standard rate designs to provide discounts such as the SSI discount in DEC-NC
  - Income-based designs that layer on top of the standard rate designs such as PIPP
  - Other discounts/policy changes

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## Comprehensive Rate Review Study

Presentation for Joint CRR/LIAC/EE Collaborative Meeting





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## Comprehensive Rate Review: Competing Priorities?





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## Low Income Affordability Collaborative

### Conitsha Barnes Duke Energy

**Rory Mcllmoil** Appalachian Voices **DFFICIAL CO** 

### La'Meshia Whittington Advance Carolina

Detrick Clark NC Community Action Association





## Low Income Affordability Collaborative (LIAC) Overview

- North Carolina Utilities Commission approved the Company's request to host a Low Income Affordability Collaborative.
- 12-month collaborative process includes evaluating a broad spectrum of regulatory programs and protections for low-income customers, ranging from affordability programs to potential new tariffs and other initiatives.
- LIAC membership represent over 30 organizations approved by the NCUC
  - Members represent government agencies, consumer advocates, low-income agencies, utilities and environmental groups



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## Low Income Affordability Collaborative Overview

	Subteam A	Subteam B	Subteam C	Subteam D
Co- Leads	<b>Rory McIlmoil:</b> Appalachian Voices <b>Arnie Richardson</b> Duke Energy	<b>Conitsha Barnes</b> Duke Energy <b>La'Meshia Whittington</b> Advance Carolina	Detrick Clark NC Community Action Association Ken Szymanski Apartment Association of NC	Thad Culley Sunrun Paula Hemmer NC DEQ State Weatherization
Scope of Work	Assess Challenges: Assessing current energy affordability challenges facing residential customers	Define Affordability: Developing suggested metrics or definitions for "affordability" in the context of the Company's provision of service in its North Carolina service territory and explore trends in affordability	Assess Current State: Investigating the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability	Collaborative Coordination: Coordinate between the affordability collaborative and the rate study and energy efficiency stakeholder groups





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**LIAC Collaborative** 

Subteam A

# Apr 25 2022

## **LIAC Subteam A**

### LANGUAGE FROM THE COMMISSION ORDER

Prepare an **assessment of current affordability challenges** facing residential customers. The assessment should:

- Provide an analysis of demographics of residential customers, including number of <u>members per household</u>, types of households (single family or multi-family), the <u>age</u> and <u>racial makeup</u> of households, <u>household income</u> data, and other data that would describe the types of residential customers the Company now serves. To the extent demographics vary significantly across the Company's service area, provide additional analysis of these demographic clusters.
- Estimate the number of customers who live in households with incomes at or less than 150% of the federal poverty guidelines (FPG), and those whose incomes are at or less than 200% of the FPG.
- For the different demographic groups identified as part of a. and b., provide an analysis of patterns and trends concerning <u>energy usage</u>, <u>disconnections</u> for nonpayment, payment <u>delinquency histories</u>, and account <u>write-offs</u> due to uncollectability.





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**LIAC Collaborative** 

Subteam A

## **Analysis Overview**

### **Included in Analytics**

- Insights into customers under 150% and 200% federal poverty level (FPL)
- Demographic/housing including dwelling type, heating source, renter/owner, racial makeup, age of account holder, housing value, population density, and number of people in the household
- Trends in delinquency, write-offs, disconnect non-pay (DNP), energy usage and energy intensity
- Analysis of Low-Income Energy Assistance Program and Crisis Intervention Program (LIEAP/CIP) recipients AMI Load Shapes

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• Tables including relative information

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### **Future Iterations**

- Zip code level data (pending commission approval)
- Mobile/Manufactured Homes analysis (pending quality data source)
- Electric Burden analysis
- Statistical analysis

Analysis was completed pre-covid from 3/2019-2/2020 on all NC customers who were active for the entire 12-month period



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Subteam A

# Apr 25 2022

## Assessment of Customer Affordability Challenges

Significant number of Duke Energy customers qualify as low-income

- The ability to afford basic needs and services, including energy bills, is directly related to household income
- "Low-income" = households falling under 200% of FPL
  - Only customers < 130% FPL qualify for heating/cooling and crisis assistance in NC

Category	% All Customers	No. Customers (2.37M)	No. Customers (3.07M)
LIEAP/CIP	2%	52,028	52,028
< 150% FPL	15%	360,934	460,500
150 - 200% FPL	11%	258,004	337,700
Total low-income	28%	670,966	850,228



LIAC Collaborative

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## **Assessment of Customer Affordability Challenges** Significant number of customers meet the "arrears definition"

- "Arrears definition" means customers 1x behind on bill for 6+ months, or 2x behind for 2+ months
- Amounts to ~15% of all residential accounts, or 360,000 to 460,000 households (60% > 200% FPL)
- ~150,000\* low-income households also met arrears definition (23% of all low-income)
   Amounts to 26% of households < 150% FPL</li>
- Categories disproportionately meeting arrears definition:
  - low-income
  - African American and Hispanic
  - multi-family and rental
  - urban/city
  - low-value (market value of less than \$100,000)
  - all-electric

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- age of the primary account holder was 54 years old
- single-person



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## **Assessment of Customer Affordability Challenges**

Energy intensity (kWh/square foot) is a driving factor

- Low-income (incl. LIEAP/CIP) and arrears struggling households have much higher energy intensity than nonlow-income
  - Same with rural, younger, low-value, multi-family and rental households
- LIEAP/CIP recipients have energy intensity ~25% greater than other low-income, and 60% greater than nonlow-income
- Arrears struggling households have 25-35% higher energy intensity for all customer segments
- Higher energy intensity likely (in part) related to poor housing quality and lower energy efficiency

   Higher energy intensity results in higher usage and electric bills
  - Not causal, but supported by seasonal usage for low-income and arrears struggling households



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## Assessment of Customer Affordability Challenges

Seasonal energy intensity drives higher bills

- LIEAP/CIP:
  - Energy intensity is double that of non-low-income households in the winter, 40% higher in summer
  - 100% higher bill in winter and 70% higher in summer than non-low-income
- Low-income, not LIEAP/CIP:
  - 33% higher energy intensity than non-low-income households in winter, 14% higher in the summer
- Arrears struggling:
  - Energy intensity is 50% higher in the winter and 33% in summer than non-arrears in comparison
  - Have a ~160% higher total bill in peak winter months (133% higher in summer) than upper-income households; for LIEAP/CIP customers the bill differential is 100% and ~70% higher, respectively


**LIAC Collaborative** 

# **Assessment of Customer Affordability Challenges** Disconnections for non-pay (DNP)

- Discrepancy in DNP data being examined, assessment to be updated as necessary
  - Duke Energy data shows 44,412 DNP's for analysis period
  - Actual residential DNP's exceeded 220,000
- Despite having received heating/cooling bill assistance, ~10% of LIEAP/CIP recipients experienced a DNP
- Low-income households 3x more likely to experience a DNP (than non-low-income)
- Arrears struggling and LIEAP/CIP recipients 9-10x more likely to experience a DNP
- In general, same categories of customers most likely to meet arrears definition also experience higher-thanaverage rates of DNP
- Lowest income (<150% FPL, including LIEAP/CIP) and arrears struggling customers experience higher-thanaverage rates of DNP across all housing, geographic, home value and racial categories



### LIAC Collaborative Subteam A

## Assessment of Customer Affordability Challenges Racial disparities in arrears and disconnects for non-pay

- Racial disparities clearly exist but reasons are unexplained by the present analysis
- Duke Energy applies NC Rule 12-11 consistently, regardless of racial status
- Racial makeup customer households
  - 72% White
  - 11% African American
  - 5% Hispanic
  - 2% Asian
- · Percent of racial category that are low-income
  - 25% of White-identified households
  - 40% of African-American
  - 36% of Hispanic
  - 17% of Asian





- Percent of all customers in racial category that meet arrears definition
  - 12% of White-identified households
  - 32% of African-American
  - 17% of Hispanic
  - 5% of Asian
- Percent of all customers in racial category that experienced a DNP
  - 1.3% of White-identified households
  - 4.1% of African-American
  - 2.6% of Hispanic
  - 0.5% of Asian

African-American households experience these outcomes despite using less energy and having only a slightly higher energy intensity than White households. Hispanic households use more energy and have a greater energy intensity.

# Apr 25 2022

# Assessment of Customer Affordability Challenges

Income does not explain racial disparities

## Ratio of AFRICAN AMERICAN percentages (likelihood) of arrears and DNP's to other categories

Race	Low-Income	Arrears	DNP
Asian	2.3	6.5	8.4
Hispanic	1.1	1.9	1.6
White	1.6	2.6	3.1

### Ratio of HISPANIC percentages (likelihood) of arrears and DNP's to other categories

Race	Low-Income	Arrears	DNP
Asian	2.1	3.4	5.3
African American	0.9	0.5	0.6
White	1.4	1.4	2.0





**LIAC Collaborative** 

Subteam B

# Apr 25 2022

# **LIAC Subteam B**

How we stay on our timeline and work in collaboration with the other subteams.

- Standing weekly meeting with the stakeholders of Sub-Team B
- Collaborating with subject matter experts from within the LIAC and Sub-Team A to present relevant information to be investigated.
- Analyzing existing programs and metrics used in North Carolina and across the Nation to assess electric energy affordability for best practices and lessons learned.
  - Energy burden
  - Self sufficiency standard

## **SUB-TEAM B TASKS**

## October - December

Identify and compile information to be investigated.

Align on questions to be answered.

Identify expert input / opinions needed to support positions (LIAC education)

## January - February

Design internal matrix to review compiled information.

Analyze information and data.

# February - March

Suggest metrics / definition for "affordability"

Prepare and present suggestions to broader LIAC consideration

What comes next?





# LIAC Subteam C

### Rates & Program

Address Commission questions regarding existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs

- 3.a-1) Define success criteria to be used for affordability programs
- 3.a-2) Determine metrics to be used to monitor program impact
- 3.b/c) Assess existing Duke Energy income-gualified programs (3 tasks)
- 3.d) Develop income-qualified program alternatives (2 tasks)
- 3.e) Assess set of Commission-identified rates and programs (5 tasks)
- 3.f) Determine rate impact implications of assessed programs (4 tasks)
- 3.h-1) Determine what practices and regulatory provisions related to disconnections for nonpayment should be modified or revised
- 3.i-1) Identify existing utility and external funding sources are available to address affordability
- 3.i-2) Estimate the level of resources that would be required to serve additional customers
- 3.j-1) Identify opportunities and challenges of the utilities working with other agencies and organizations to collaborate and coordinate delivery of programs that affect affordability concerns









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**LIAC Collaborative** 

Subteam C

Public Staff UTILITIES COMMISSION

NC SUSTAINABLE

### **Subteam Outputs Needed**

- 1) Recommendation regarding existing income-qualified programs
- 2) Presentation of recommendation to LIAC at large to secure endorsement or input.
- 3) Demonstration that position regarding appropriateness of Commission-identified rates and programs.
- 4) Presentation of position to LIAC at large to secure endorsement or input.

### **Measures of Success**

- \_IAC endorsed recommendation on existing programs
- LIAC endorsed position on appropriateness of
- **Commission-identified rates/programs**





**LIAC Collaborative** 

Subteam C

# Sub-Team C Mini Working Teams

## **Roles/ Responsibilities**

### □ MINI SUBTEAM LEADERSHIP

- Develop clear understanding of mini sub-team tasks/questions and all required outputs and expectations
- Communicate any resource needs and concerns with Co-leads (Detrick and Ken)
- Consider tasks and delivery timelines (factoring in interdependencies of other sub-team outputs)

### □ MINI SUBTEAM COMMUNICATION

- Serve as subject matter professional and advising body for mini sub-team
- Ensure relevant and timely communications are disseminated to Co-leads and other sub-team C members

### □ MINI SUBTEAM PRODUCTIVITY

- Develop and maintain Mini Sub-team Plan (task list and schedule) supported by Co-leads
- Develop Mini Sub-team Report outs (communications to greater Sub-team C) supported by Co-leads
- Track all relevant efforts in Trello (please let us know if you do not have access)

### LIAC Collaborative Subteam C

# What's happened in Sub-Team C October 2021 - Ken Szymanski + Detrick Clark

#### SUB-TEAM C MINI WORKING TEAMS Investigating the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability. Teams Team A Team B Team C Team D Team E Team F Team G Team H Team I Team J b. % of res d. Should f. How do h. What a. What c. Impact of e. Are the g. How do i. Existing i. Coordination affordability defines a existing existing following cost-of-service disconnections utility and opportunities/ customers are challenges of "successful eligible for programs be allocation for external programs on programs programs program" and each existing the energy maintained. appropriate affect costaffect rate nonpayment funding the utilities what metrics program and % burden for for causation and practices/regs working with replaced, or design and sources should be of eligible enrolled terminated? implementatio allowance of affordability of should be available to other **Team Task** modified or monitored and customers take customers? Changes/repla n in NC? rates? address organizations costs among affordability? to deliver presented to advantage? (please refer classes? revised? cements to show impact? to task list link affordability improve Level of results? in the programs? resources welcome required to letter) serve more. Currently re-examine mini sub-team activities and re-evaluate mini sub-team assignments (at least 4 members per team) **Team Members**





Apr 25 2022

**LIAC Collaborative** 

Subteam C

# Apr 25 2022

# What's happened in Sub-Team C

# November 2021 – Tim Duff

## Duke Energy Low Income Energy Efficiency Offerings in the Carolinas

- Weatherization and Equipment Replacement Program ("WERP")
- Refrigerator Replacement Program ("RRP")
- Neighborhood Energy Saver Program ("NES")
- Low-Income Weatherization Pay for Performance Pilot

### Potential Program Expansion and New Pilots

Expanding Duke Energy Carolinas Weatherization Program to Duke Energy Progress

As Part of the Rate Case Settlement, Duke is working with SACE, NCSEA, NC Justice Center and NRDC to develop Low Income EE Pilots.

### 3 ideas being considered:

- Energy Burden Pilot (Follows the same model as the Durham pilot)
- Heat Strip Replacement Targets winter peak and high energy intensity in mobile/manufactured homes
- Multifamily Direct Install Expansion Targets low-income multifamily housing (LIHTC, HUD, Section 8)

### Areas for Improvement to Targeted EE Offerings

**LIAC Collaborative** 

Subteam C

# What's happened in Sub-Team C

December 2021 – Bradley Harris

### Cost of Service 101

- Energy
- Customer
- Demand (Capacity)

### Rate Design 101

- Recognize Cost Causation (No Unjust or Undue Discrimination)
- Incent Beneficial Consumption Patterns (Efficient Price Signals)
- Recover Cost to Serve (i.e., recover revenue requirement)
- Meets Public Policy Goals (as determined by the utility commissions and state governments)

### Analysis of segmenting the residential rate class

- Theory
- Methodology
- Results from DEP

### Analysis of a minimum bill charge as an alterative to a fixed charge

- Very small impact by Income and Arrears Status
- Significant Impact by Usage on Very Low Usage
- A very high minimum bill would be needed to replace the revenue from eliminating the fixed charge



Subteam C

# What's happened in Sub-Team C

January 2022 – Lisa FaJohn + John Howat

# Historical

Established through the 2020 Virginia **General Assembly** 

- · Local legislators concerned about the income to home energy cost ratio for low-income constituents
- Created with input from advocates (Virginia Poverty Law Center)
- General outline established
- Details to be set by the managing agency, utilities and advocates
- The SCC ensures the USF is reasonable and accurate.
- Based on Ohio PIPP and modified for VA
- Designed to:
  - Limit the electric utility payments
  - Based upon a percentage of income
  - For customers of DEV and APCo

# Objective

- Limits electric bill payments to 10% (electric heat), 6% for (other heat) ٠
- Reduce electric usage through weatherization and energy conservation education
- Establish a non-bypassable Universal Service Fee (USF) to fund PIPP

## Process

- Customers apply/screened through the Department of Social Services
  - Eligibility: 150% FPL income
  - Eligible for free weatherization and conservation education
- On-time, in-full payments result in a delta credit and 1/24 credit to the arrears
- Credits along with administrative costs paid through the USF

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Subteam C

# **Next Steps for Sub-Team C**

## **Identify Resource Needs/Dependencies**

- a) Submit official requests to Duke and Guidehouse for all third-party program evaluations, SWOT Analysis, and reports related to Sub-Team C's task
- b) Review and disseminate all interconnected info, analysis, and reports from other NC LIAC Sub-Teams to appropriate mini-teams and its members
- c) Re-examine mini sub-team activities and re-evaluate mini sub-team assignments
- d) Survey sub-team members for special meeting sessions/and the group's availability to meet more frequent

LIAC February Workshop 5 – Thursday, February 3rd (1-4 pm)

Sub-Team C Presenter(s) Include:

Lucy Edmondson and Jack Floyd - statutory and regulatory challenges John Howat - the history of the OH PIPP program Tim Duff has asked (Rick Mifflin) to discuss existing EE programs w/ larger collaborative Bradley Harris - DEC SSI-based program and other items



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**LIAC Collaborative** 

Subteam C

# Next Steps for Sub-Team C Cont'd

Statistical Analysis of Customer Affordability Challenges Working Group (lead by Sub-Team A)

- Christina Cress, Partner, Bailey & Dixon, LLP
- Munashe Magarira, Staff Attorney, NC Utilities Commission
- \*Ken Szymanski, Executive Director (retired), Apartment Association of NC
- \*Detrick Clark, Director of Housing and Energy Programs, NC Community Action Association

Future Subteam C presentations and activities include, but are not limited to the following:

Topic: Ohio PIPP Overview (planning in progress) Presenter(s): Brandy Kolattukudy, Ohio Deputy Chief of the Office of Division Support John Starver, Executive Director for Ohio Partners for Affordable Energy

Topic: **DECWX and HHF Weatherization Program Overview** *(tentative)* Presenter(s): **Deborah Hill**, TRC (formerly Lockheed Martin)

Topic: Sub-Team C proposal(s)/recommendations for consideration Presenter(s): TBD

Topic: Program Design Modeling Presenter(s): John Howat



#### \*Sub-Team C Co-leads Presented at the LIAC Joint Collaborative Session, January 26, 2022



Go to menti.com and use code 6092 4118 or access the link in the chat window







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# BREAK

# (Resuming at 11:30 AM)





# Group Discussion & Breakouts





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Apr 25 2023

# Let's Discuss

- What we've heard
- What we've learned

DUKE ENERGY

Guidehouse

Public Staff



# Let's Breakout!

Consider

Guidehouse

- what you have heard today,
- what you have experienced during your Collaborative participation, and
- insights you offer from your non-Collaborative lives.

DUKE ENERG' Public Staff



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# **Next Steps**

How we stay abreast of and consider the ongoing work of the separate teams

- Designated cross-collaborative liaisons representing the Utility, the Public Staff and community/industry
- Standing agenda item for sharing updates

What comes next?

## **COLLABORATIVE LIAISONS**

### **EE COLLABORATIVE**

Duke Energy – *Tim Duff* NCUC Public Staff – *Jack Floyd* Community/Industry – *Claire Williamson* 

### **CRR COLLABORATIVE**

Duke Energy – Bradley Harris NCUC Public Staff – Jack Floyd Community/Industry – Thad Culley



# ADJOURN



# THANK YOU all for your participation

Apr 25 2022

# Contact

Chip Wood Partner chip.wood@guidehouse.com 704.347.7621

Jamie Bond Associate Director jamie.bond@guidehouse.com 704.347.7626





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# Joint Collaborative Session Participant Input

Apr 25 2022

# Joint Collaborative Session | January 26, 2022

#### Participants in total: 147 CRR ΞΞ Other O Charitable / Social Aid 3% 13% 6% Commercial / Solution Provider 14% Representation 4% Apr 25 2022 9% greatest from host 10% organization (LIAC) 27% 33% Government Agency Utility 🔵 34% 11% 39 LIAC **GUEST** Trade Association / Interest Group 19% 21 Sixty percent (60%) self-identified as a 15 *utility* or *government agency* participant 13 Some session participants noted that "nonprofit advocacy" would have been a better description of their organizations CRR EE LIAC None 78 **Public Staff** (Guest Guidehouse

North Carolina Utilities Commission Presented at the LIAC Joint Collaborative Session, January 26, 2022

Attendee)

# Participant comments related to EE Collaborative discussion

Q J DSM/EE **Split incentive issue** is important not only for addressing the rental problem but also from a racial equity standpoint ...

> .... rebates for new equipment or value from the property upgrade goes to the property owner, but the energy savings are seen on the renters' bills

> ... also means the cost of the upgrade goes to the owner and benefit goes to the renter

**Non-energy repairs** are an issue for DOE weatherization program funds that go out to each state, and we are working to solve that issue in conjunction with DOE

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CRR

% LIAC Landlords won't invest in EE if the tenant pays the utility bill, because the landlord won't see any payback/savings from the investment ...

And they are typically not incentivized to pay for expensive improvements, even if the landlord does pay the bill, especially if they are competing in a highdemand rental market We trying decarbonize by 2050, and many homes/multi-family dwellings are being built between now and then.

Is there a way to get at [decarbonization] through building codes for low income housing or through requiring basic EE for any landlords participating in a HUD type program?



# **Areas of Greatest Cross Collaborative Impact**



Apr 25 2022





DUKE

# Participant comments related to CRR Collaborative discussion

Are marginal costs less than embedded costs? And does the marginal cost time window go long enough to capture capital costs for replacement of current generators?

Why would there not be a **mid-day** discount rate during summer months?

> Air conditioning load to counteract solar

During spring and fall, aren't their nuclear or other baseload plants down for planned maintenance, so that the marginal energy cost is gas, even with the solar?

*i.e., sometimes you are paying fairly* high gas power prices then because of the need to replace baseload that is down

*There is much debate about the notion of public* interest and the objectives of regulation ...

Not saying to throw Bonbright out the window, just that there appears to be lots of interest in debate over principles outline in his treatise

Low-income customers pay more than the cost they (and their energy usage/demand) impose on the system .... they don't necessarily pay more in in rates on average

I'd be curious to know what the aggregated dollar value is for how much low-income customers are subsidizing non *low-income customers each year.* 

> *Embedded costs are averaged over* the whole year. This perspective can obscure what's happening in certain specific customer segments.

*Could add rate* design leads to *lower costs* 

<u>C0</u>P√ DFFICIA

DSM/EE

**CRR** 

%

LIAC





# **Most Important Principles of the Competing Priorities**

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\* Note that one-third of poll participants self-identified as utility employees

Discourages

waste /

promote

Minimizes rate

shock (stable

and

predictable)

Easily

understood

(simple and

practical)

Presented at the LIAC Joint Collaborative Session, January 26, 2022

Avoids undue

discrimination

Reflects cost

causation

Public Staff

DUKE

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82

# Participant comments related to CRR Collaborative discussion

**DSM/EE** 

For LIAC work, "Energy Intensity" is specifically looking at electricity, rather than including gas and propane.

CRR

% LIAC Statistical analysis is necessary for understanding WHY we are seeing the outcomes we're seeing so that we can propose/design appropriate solutions

Beyond the Customer Challenges Assessment, the next phase of LIAC work focuses on identifying and proposing solutions. Curious how much of the arears disparity is explained by the degree to which these various customer groups have electric heat.

Those with gas heat may be in arrears on their gas bills which wouldn't be reflected in the Customer Challenges data. Apr 25 2022





# Apr 25 2022

## What didn't we discuss? What gaps might we have collectively?

It seems that Tim's slide on Duke's Low-Income Energy Efficiency Study got cut. Maybe there is still a way to share it today? Also wondering what level of penetration Duke's income qualified programs have achieved, compared to total LI population?

I'm going to have to digest this before I can even assess what should have been added or things that could have been left out.

Ideas on how low income families/communities can participate/benefit from electricity transformation to a more clean/connected systemHow future clean energy plan may impact all of this work

How will performance based ratemaking and future multiyear rateplans be integrated with affordability concerns?

Hind sight is 20-20, but in retrospect, in addition to income, I wish we'd carved out time to conduct analysis of household wealth to enhance our collective understanding of home energy affordability and access challenges.

Utility payment plan offerings

Because low income homes are more likely to have electric heat and electric hot water, this is a confounding variable that must be taken into account in both the analysis of lowincome AND of whether customers are "overpaying" in net metering or oth

Path Forward for Renters - getting over the hump of the split incentive

Is there a way to incentizes multi-family residential owners to make energy improvements (LL pays energy bills), but also incentivizes energy efficiency by tenants if tenants can be charged for cost overages?

Fixed fees are an immovable part of a customer's bill that have an impact on costs/affordability.

I need some more time to sit down and reflect on what I've heard today. What I heard today was helpful and will inform my work going forward

time for current programs to serve the need. meaning at the current rate of program delivery it will take x years for all low income customers to be served Fuel source and fuel switching. Split incentive. Urban/Rural metric and data differences. Multi-family vs. single family.

I may have missed it, but information on the penetration of current energy efficiency programs would be helpful. *Specifically* penetration of programs with deep retrofit measures that would yield high savings for each customer.

We did not address fixed charges (basic facilities charge) in rate design & how they have been informed by Duke's reliance on the minimum system method in its cost of service study. Keeping those low is important for affordability & efficiency

arrerage management programs

Given that low-income households have been subsidizing other households for some time, should future rate design take this into consideration - not just reduce, but reverse the subsidies?





# **Breakout Summary – Collaborative Intersections**

### Where can EE/LIAC work together (areas of overlap)?

#### **Programs & Measures**

- Low-income pilots
- Low-cost, cost-effective measures
- Funding for Non-Emergency Repairs (Weatherization)
- DEP Weatherization Program
- · Large household energy costs how to change that perspective and spread out costs

#### **Data & Information**

- Data Sharing Platform where organizations don't duplicate efforts and can prioritize investments
- Providing data from LIAC assessment and other efforts that can inform future lowincome pilots
- Information about the most effective LI programs, measures, cost-effectiveness challenges, how to serve the most people the most effectively
- Penetration of EE programs especially deep retrofit programs which would have big impact on customer bills
- Penetration of Duke EE programs compared to the low income EE population

### **Outreach & Education**

- Combine EE with any low-income program recommended (teaching/changing) behavior - voluntary measure)
- Education strategies for low-income customers on when/how to save energy (iPhone plugged in, when to run dishwashers)
- Talking to individuals about why/how this is important

#### Public Staff Guidehouse

### Where can CRR/LIAC work together (areas of overlap)?

#### **Customer Offerings**

- Percentage of Income Payment Plan (PIPP) and other low-income rate designs they really sit on top of base rate designs. "low income offering"
- Low-income customer participation in Shared Solar offering
- Fixed fees

### **Rate Design Considerations**

- Cross-subsidization
- Evaluation of past subsidization
- Use of shadow billing for different rate tariffs
- Understanding the impacts of multi-year rate plan (PBR) on LIAC recommendations
- TOU Load Shifting discount times (implications for low-income customers)
- Application of Bonbright Principles
- Self-explanatory rate design principles like "use less, pay less"
- "Rate design" distinct from "low income offering"
- Consistent eligibility requirement for all departments (rates/EE components of a bill)
- Do we have a "fair and firm" income requirement or do we design in flexibility to enable It can shift depending on needs (e.g., raising LI EE program eligibility up to 200% the federal poverty level)
- Low-income offerings complex to model (ex. PIPP) takes a long time

# Breakout Summary – Challenges & Gaps

### **Customer Challenges**

- Customers balancing paying their electric bill with other needs
- Total magnitude of cost per house
- Poor housing quality leading to low efficiency
- Prequalifying conditions of home as barriers to participation (e.g., hole in roof)
- Customers in crisis have to apply for many assistance opportunities
- Seniors on Fixed income limited in ability to invest in EE measures
- Energy affordability / high energy burden experiences may be very different "one size fits all" approach is hard

### **Outreach & Education Needs**

- Lack of general education, e.g., how to use less energy, what programs available, how to apply
- Lack of free time (overwhelming times); need to make it easy and quick
- · No "one stop" for people applying for aid, services, assistance, etc.
- Reaching hard to reach customers (e.g., rural or remote customers, customers who are already receiving education on many different programs, etc.)
- Earning customer trust in utility programs
- · Fear (scams) for those coming into homes to support vulnerable communities
- Ways to help customers ensuring legitimacy of offers

### **Data & Information Needs**

- Understanding program enrollment process and existing program participation
- More data on manufactured homes and multifamily related to EE

### **Program Design Considerations**

- Automatic Enrollment based on work supports/gov't assistance
- Understanding human behavior on EE and payments
- Energy burdened low energy use customers not currently being addressed by EE
- Multifamily and tenant sharing energy reductions/investments
- Utility process needed for interaction w/customers who apply for programs as barriers to participation (e.g., hole in roof)
- Utility Cost Test (UCT); evaluation of program effectiveness and value for customers
- Program administration barriers for utility and state; Limitations to WAP or other government funding impacting ability to service homes
- Supporting improvements for both gas and electric when limited to only electric KWH
  reduction for cost recovery
- Determining appropriate EE funding from the EE Rider given lack of cost effectiveness
- PIPP Payment Behavior and success rate
- Multi-year rate plan complicating our proposed solutions
- Balancing carbon reduction with affordability

### **Cost & Resource Considerations**

- Utility administration cost for programs
- Cost of serving the LI population scale of need
- High cost to reduce energy usage vs energy cost savings
- Utility cost recovery for new programs
- · Securing a reliable funding stream to pay for something like a PIPP or discount rate
- Ensuring program longevity and funding streams
- Supply chain issues and increased cost of EE improvements
- Workforce constraints (COVID)



# Apr 25 2022

# **Breakout Summary – Changes and Solutions**

### Offerings

- Offer high usage alerts (note: Duke already provides)
- Offer a collection of programs (EE, Rates, Policies, etc.) to better serve customers
- Consider longer term solution similar to helping home funds to help with home improvements (health and safety)
- Have other avenues such as midstream program, renter payment program, on-bill program
- Create data driven solutions

### **Program Administration & Tools**

- Implement a "one stop" for applying for assistance and services
- Create "hotline" for customers to call and ask about their bill and programs
- Create Data Sharing Platform where organizations don't duplicate efforts and can prioritize investments; households could be referred to other programs like health and safety and then be referred back to a WAP
- Train service providers to give easy consistent information and guidance
- Leverage auto enrollment auto enrolled based on services (ex. automating food stamps, medicaid, etc. if you apply for one of those, the application is auto-populated for other programs

### Engagement

- · Focus on Simplicity easy to understand, apply
- Collaborate with community stakeholders to help address lack of trust/legitimacy/scams
- · Coordinate with service agencies to qualify customers
- Enlist existing participants for helping walk new/potential participants through the process

### Other

- Ensure larger properties stay affordable landlords who own 1-5 vs large developers (tangible improvements vs "making it look nice")Create "hotline" for customers to call and ask about their bill and programs
- Seek governmental intervention to compel landlords participate in EE measures for their renters ("you have to make your properties energy efficient")
- · Utility should weigh in on improving housing / building code
- Seek non-ratepayer funding for health, safety, and incidental repairs



### Appendix C. Workshop Material Presented February 3, 2022

During Workshop 5, Duke Energy subject matter experts presented an overview of existing income-qualified customer programs currently offered to Duke Energy's North Carolina residential electric customers as well as Duke Energy customer assistance programs.

Knowledgeable members of the collaborative also facilitated a discussion around key discount programs and rate concepts the LIAC was asked to consider. This appendix includes the material used to support those workshop discussions.



# North Carolina Low Income Affordability Collaborative

Workshop 5

February 3, 2022

Convened by





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# Welcome

## **Guidehouse Facilitators**

## **JAMIE BOND**

Lead Facilitator & Subteam A & D Support

**NNEOMMA NWOSU** 

Workshop Facilitator & Subteam B Support

**VIJETA JANGRA** Workshop & Subteam C Support

40-50 active LIAC participants Charitable / Social Aid **Organizational Representation** Utility 4 LIAC A subteams Rank Guiding WE COME PREPARED ciples

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WE ARE TRANSPARENT

WE ARE OPENMINDED

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#### **SESSION OBJECTIVES**

- Hear progress updates from subteams
- Gain familiarity with customer offerings (offered by Duke Energy and elsewhere)





# **NC Low Income Collaborative**

Agenda | February 3, 2022

### Workshop V: Customer Offerings

### CONVENE

	Welcome, Safety & Agenda	Guidehouse	
_	Subteam Progress	Subteam Co-Leads	
	New LIAC Members	Public Staff of NCUC	90 min
	<ul><li>Current Offerings:</li><li>Low Income EE Programs</li><li>Share the Light Fund</li></ul>	LIAC Subteam C: Duke Energy SMEs	
	BREAK		
	<ul><li>LIAC-Reviewed Offerings:</li><li>NCUC Identified Rates</li><li>SSI Discount</li></ul>	LIAC Subteam C: Public Staff Duke Energy SME	
	Planning for Program Proposals and Pitch Day	Guidehouse	60-75 min
	Round Table	All (GH Facilitated)	
	Wrap-up & Look Ahead	Guidehouse	
	ADJOURN		

3

# LIAC SUBTEAM PROGRESS




#### LIAC Macro Timeline | as of 2/3/2022



Staying abreast of related EE & CRR activities



Coordination

LIAC (all)

Customer

**Metrics** 

## **Key Subteam Activities**

#### SUBTEAM A

Prepare an assessment of current affordability challenges facing residential customers

#### SUBTEAM B

Develop suggested metrics or definitions for "affordability"

#### SUBTEAM C

Investigate the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability

#### SUBTEAM D

Stay abreast of and consider the ongoing work of the comprehensive rate design and the EE collaboratives as they each carry out their work



## Joint Collaborative Session | January 26, 2022

#### Participants in total: 147 Other O Charitable / Social Aid Commercial / Solution Provider 14% Representation greatest from host organization (LIAC) 27% 33% Government Agency Utility 🔵 11% Trade Association / Interest Group 21 Sixty percent (60%) self-identified as a utility or government agency participant

 Some session participants noted that "nonprofit advocacy" would have been a better description of their organizations





**Public Staff** 



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CRR

# NEW LIAC MEMBERS





## OVERVIEW OF EXISTING PROGRAMS







Duke Energy Low Income Energy Efficiency Offerings in the Carolinas

#### Duke Energy Carolinas Low Income Programs

Program	Delivery	Description	
<ul> <li>Weatherization and Equipment Replacement Program ("WERP")</li> <li>Refrigerator Replacement Program ("RRP").</li> <li>Weatherization Agencies</li> <li>Weatherization Tier 1 provides up to \$600 for energy efficiency service</li> <li>Tier 2 provides up to \$4,000 for HVAC replacement</li> </ul>		<ul> <li>WERP and RRP are available for income-qualified customers in Duke Energy Carolinas service territory for existing, individually metered single-family homes, condominiums, and mobile homes.</li> <li>Funds are available for (i.) weatherization measures and/or (ii.) heating system replacement with a 15 or greater SEER heat pump, and/or (iii.) refrigerator replacement with an Energy Star appliance</li> <li>Full energy audit</li> <li>Higher intensity energy users receive more assistance</li> <li>Tier 1 provides up to \$600 for energy efficiency services</li> <li>Tier 2 provides up to \$4,000 for energy efficiency services, including insulation and up to \$6,000 for HVAC replacement</li> </ul>	
Neighborhood Energy Saver Program (NES)	Program Vendors	<ul> <li>Walk-through energy assessment, energy education and direct installed measures including:</li> <li>LED lamps,</li> <li>Electric water heater wrap, pipe wrap &amp; low flow devices</li> <li>Electric Water Heater Temperature Check and Adjustment</li> <li>Wall Plate Thermometer</li> <li>Window AC Winterization Kits and education</li> <li>1 year of HVAC filters</li> <li>Air sealing measures.</li> </ul>	

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# Duke Energy Carolinas Low Income Programs Updates The NES Program received authorization to begin offering additional measures to income-qualified customers with high energy (electricity) burdens in the designated NES neighborhoods. Based on the opportunities identified during the energy assessment the customers could be eligible to receive the following measures:

Floor/Belly Insulation in Mobile Homes ٠

Air Sealing w/Blower Door

Smart Thermostat 

Attic insulation

Duct Sealing

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Description

Program

Neighborhood

**Energy Saver** 

**Program (NES)** 

Delivery

Program

<u>Vendors</u>

Measure installation began in Q3 2021 because of COVID19 suspensions.

#### Duke Energy Progress Low Income Programs

Program	Delivery	Description	
Neighborhood Energy Saver Program 2.0 (NES 2.0)	<u>Program</u> <u>Vendors</u>	<ul> <li>The NES Program received authorization to begin offering additional measures to income-qualified customers with high energy (electricity) burdens in the designated NES neighborhoods Based on the opportunities identified during the energy assessment the customers could be eligible to receive the following measures:</li> <li>Attic insulation</li> <li>Duct Sealing</li> <li>Air Sealing w/Blower Door</li> <li>Floor/Belly Insulation in Mobile Homes</li> <li>Smart Thermostat</li> <li>Measure installation began in Q3 2021 because of COVID19 suspensions.</li> </ul>	
Low-Income Weatherization Pay for Performance Pilot	State Weatherization agencies & nonprofit organizations	<ul> <li>The Low-Income Weatherization Pay for Performance Pilot Program (Pilot) in Buncombe County North Carolina provides incentives based on the kilowatt- hours (kWhs) saved by installing qualified energy efficiency measures such as attic or wall insulation, air sealing, refrigerator replacement, lighting, or electric water heating measures.</li> <li>The 36-month pilot purpose is to fund deeper energy saving measures in qualified homes.</li> <li>Eligible participants will be selected by participating weatherization assistance and other non-profit organizations using current United States Department of Energy Low Income Home Energy Assistance Program grant requirements (must be less than 200% of the federal poverty guidelines, with the number of disabled, elderly, and minors in the household taken into consideration, as well as a high energy burden).</li> </ul>	

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DEC Weatherization Program	Carolinas NES
<ul> <li>About DEC 740,000 are eligible for weatherization services because they at or below 200% of federal poverty guidelines.</li> </ul>	<ul> <li>About 2.2 million DEC and DEP customers eligible</li> <li>About 67,000 customers have already served</li> <li>About 18,000 customers served annually</li> <li>Targets neighborhoods where at least 50% of</li> </ul>
Eligible customers must apply at the local weatherizer     agency for weatherization improvements.	households are below 200% of poverty levels
Potential Program Pilots	Success Metrics
<ul> <li>Working with collaborative</li> <li>New DEP Weatherization planned for filing Q1 2022</li> <li>High Energy (Electricity) Burden pilot (Durham project)</li> <li>Heat strip replacement including manufactured homes</li> <li>Multifamily direct install for low-income housing</li> </ul>	<ul> <li>Number of customers served</li> <li>% of income qualified customers served</li> <li>% of NES neighborhood population served</li> <li>NES kickoff event participation</li> <li>Geographic coverage of programs</li> </ul>







Jurisdiction	Program	2019 kWh per participant	2020 kWh per participant	2019 Cost per participant	2020 Cost per participant
DEC	Neighborhood				
	Energy Saver	693	693	\$363	\$391
DEC	Weatherization	2,187	2,094	\$4,673	\$4,741
DEC	Refrigerator				
	Replacement	1,268	1,268	\$959	\$2,420
DEP	Neighborhood Energy Saver	819	819	\$370	\$650
DEP	Pay for Performance Pilot	99	101	\$21	\$48

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### **Health and Safety**

Limited research has provided much information about the deferral list created because of health & safety issues. North Carolina did provide a cumulative estimate of 1,100 homes in DEC and DEP for 2019/2020 timeframe. The Company continues to investigate and collect more data to better understand the need and how the Helping Home Fund is assisting. A planning meeting is scheduled in the near future to continue this effort.

#### Helping Home Fund Summary

Funding	2015-	Health	Appliance	Weatherization	HVAC Repair	QA/QC	Program
	2021	&	Replacement		&		Admin
	Funding	Safety			Replacement		
DEC							
	\$13.1M	\$2.8M	\$1.2M	\$0	\$6.3M	\$25k	\$1.4M
DEP	\$14.9M	\$2.2M	\$1.3M	\$1.1M	\$7.4M	\$20k	\$1.6M
Total	\$28M	\$5M	\$2.5M	\$1.1M	\$13.7M	\$45k	\$3M

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## Areas for Low Income Program Enhancements

- Serving more Duke customers on the Weatherization agency waitlists with direct install options for deep impact measures
- Serve more customers requiring health & safety improvements to be eligible for weatherization services
- Expand NES 2.0 measures to cover more expensive long-life measures by leveraging the in-home assessment and Find It Duke partners to deliver less expensive but higher energy impact measures for qualified customers
- Explore a program that targeted manufactured home parks to provide Weatherization upgrades
- Explore the value of expanding P4P program in the Asheville area
- Right size the DEC Weatherization budget and move extra funds to NES 2.0
- Consider expanding low-income eligibility to cover more moderate-income customers
- Add Weatherization Program to DEP
- Investigate additional health and safety funds to minimize waitlist customers that could otherwise be served.







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## Introducing Share The Light Fund

**Customer Assistance Funds** help qualified customers who struggle to pay their energy bills. Funds come from employees, customers and shareholders. Funds are matched by the Duke Energy Foundation.

The customer assistance program has been available to customers for over 30 years, and since 2013, have provided over \$42M in assistance, serving over 5000 households per year.

The program launched a new brand in late 2021 for enterprise consistency in name, program structure enhancements and streamlined customer digital experience

### We're making it easier for customers to give and get help with Share the Light Fund

Duke Energy works hand in hand with our customers and communities, and we are committed to helping our neighbors in need to make a meaningful difference to those who need it most.

Share the Light Fund is the evolution of the Duke Energy enterprise customer assistance programs (formerly known as Share the Warmth and Energy Neighbor Fund).

Share the Light fund is one of the ways we are working to help our customers in need.

Duke Energy works in partnership with local agencies to distribute funds to qualifying customers in order to pay energy bills, deposits and reconnection/connection charges. The new brand:



**SHARE**theLIGHT

Fund



#### **Marketing Materials**



#### **DE.com Banner**





DUKE-ENERGY.COM The Power of Community Help for those in need		Learn More
🖒 Like	Comment	🛱 Share

#### **Social Media**



#### Introducing Share the Light >

Discover the power of community and make a difference for neighbors in need (formerly Share the Warmth).

#### Home Energy Report



#### **Residential Newsletter**

<u>8</u>

## Introducing SHARE THE LIGHT FUND

DUKE ENERGY

#### Discover the power of community

Share the Light Pund (formerly Share the Warnth Pund) brings together calorenes, employees and the community to help individuals and tentions who need executions paying their smargs SMN. Wetter you wand help or want to help others, join us. Together, we can brighten homes – and free.



Email 995,267 DEC 482,470 DEP

## NC DEC Share The Light Fund (formerly Share The Warmth)

- Share the Light Fund (STLF) brings together customers and communities to help individuals and families struggling to pay their energy bills. The Duke Energy Foundation will match \$1:\$1 up to \$500,000 in customer contributions with an allocation to the NC program.
- The Duke Energy Foundation also provides \$40,000 annually for the Fan Relief Program. Eligible customers can get a fan or \$50 towards their Duke Energy bill. The NC Department of Human Resources, Division of Aging administers this program.
- Customers may donate on their bill by marking the donation in the designated section, mailing a check or money order or paperless billing customers may donate on-line when paying their monthly bill. As of April 2021, customers now have the option to set up a recurring payment of a specific dollar amount or enrolling in our round-up program.
- Over 80 agencies within the Duke Energy service territory in the Carolinas administers in the distribution of the funds (non-profit agencies).
- Funds may be used for: bill payment, deposits, reconnection/connection charges.
- Eligibility is based on need and not income guidelines and determined by our STLF agencies.

Customers enrolled in recurring round-up since launch

Customers enrolled in recurring payment since launch

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## NC DEP Share The Light Fund (formerly Energy Neighbor Fund)

- Share the Light Fund (STLF) brings together customers and communities to help individuals and families struggling to pay their energy bills. The Duke Energy Foundation will match \$1:\$1 up to \$500,000 in customer contributions with an allocation to the NC program.
- The Duke Energy Foundation also provides \$40,000 annually for the Fan Relief Program. NCDHHS administers this program in
  partnership with 16 regional area agencies on aging and their local aging and human service provider agencies, which purchase and
  make fans available to eligible adults.
- Customers may donate on their bill by marking the donation in the designated section, mailing a check or money order or paperless billing customers may donate on-line when paying their monthly bill. As of November 2021, customers now have the option to set up a recurring payment of a specific dollar amount or enrolling in our round-up program.
- NCDHHS administers the distribution of the funds (government agency).
- Funds may be used for: bill payment, deposits, reconnection/connection charges.
- Eligibility is based on income qualifications / financial hardship (<FPL 130%).

128 Customers enrolled in recurring round-up since launch

Customers enrolled in recurring payment since launch



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#### Share the Light Agencies

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- Blue Ridge Opportunity Commission
- **Burke United Christian Ministries**
- Cabarrus Cooperative Christian
- Caldwell County Yokefellow
- **Caswell Parish**
- Cherokee County DSS
- Christian Crisis Center-Alexander
- Christian Ministries of Lincoln
- Christian United Outreach
- **Common Heart**
- Cooperative Christian/Eden
- Crisis Assistance Ministry
- **Crisis Control Ministry**

- **Davie County DSS**
- Durham County DSS ٠
- East Burke Christian Ministries
- East Lincoln Christian
- Eastern Band of Cherokee Indians
- Eastern Catawba Cooperative
- Eblen Charities .
- El Centro Hispanic
- First Baptist Creedmoor ٠
- Graham County DSS
- Greater Cleveland County Baptist
- **Greater Hickory Cooperative**
- Greensboro Urban Ministry ٠ Note: A number of Department of Social Services agencies in the DEP service territory.

- Interfaith Assistance Ministry .
- Inter-Faith Council for SS
- Jackson County DSS ٠
- Macon County Care Network ٠
- Matthew 25 ٠
- Matthews Help Center ٠
- Maxwell Corpening
- Mooresville Area Christian .
- Northwestern Rockingham
- Open Door Ministries Guilford & Randolph
- Orange Congregations

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- Randleman Friends Meeting ٠
- **Rowan Helping Ministries** ٠

- Salvation Army Asheville
- Salvation Army Davidson
- Salvation Army Durham
- Salvation Army Hickory
- Salvation Army Mt. Airy
- Salvation Army of Alamance
- Salvation Army Reidsville
- Salvation Army/Stokes
- Salvation Army/Yadkin
- South Caldwell Christian
- South Davidson Family
- Stanly Community Christian
- Sunnyside Ministry/Moravian

- Swain County DSS ٠
- Thermal Belt Outreach .
- Transylvania Christian ٠
- **Tri County Christian** • Crisis/Surry
- Tri County Christian . Crisis/Wilkes
- **Tri County Christian** Crisis/Yadkin
- **Union County Crisis** Assistance

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#### **Share The Light Fund Creative**

DUKE ENERGY

Formerly known as Helping Hand.

Special Assistance



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#### Share the Light Fund>

Discover the power of community. Whether you need help or want to help others, join us. Working together, we can make a difference for neighbors in need.

Introducing 

Discover the power of community at duke-energy.com/ShareTheLight



#### Discover the power of community

Share the Light Fund (formerty Helping Hand) brings together customers, employees and the community to seep seniors and families who need assistance paying their anargy bits. Whether you need help or want to help others, join us. Tagether, we can brighten homes - and lives.

To contribute, you can add a gift to y monthly bill either by mail or online for papelicas sitting customers. Dute Margy also gives \$200,000 each year.

For more information, visit dake energy com/Share TooLight

illusus information on expaniel? Visite ex.dute-energy com/ShareTheLight.

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February 2022 | Pricing & Strategic Solutions



### SSI Introduction

- Supplemental Security Income (SSI) is a Federal income supplement program designed to help elderly, blind, and disabled people who have little or no income. It provides cash to meet basic needs for food, clothing, and shelter.
- To be eligible for SSI one must be:
  - 65+ years old, blind, or disabled
  - AND have limited income and resources
  - AND "meets certain other requirement" according to the Social Security Administration website
- The Duke Power Company adopted a discount for recipients of SSI on August 31, 1978
  - The NCUC ordered the establishment of the discount as an experimental rate under the hypothesis that SSI recipients have usage characteristics that differ substantially from the average residential customer and, as a result have a small impact on system costs.
  - In 1981 the Research Triangle Institute conducted a study on SSI recipients who were Duke Power customers, concluding that: "If the North Carolina Utilities Commission feels that this particular class of customers should be granted special rate consideration, then there exist cost as well as social equity justifications for doing so."

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#### Example using RS (DEC-NC)

RATE

I.	Basic Facilities Charge per month	\$ 14.00
II.	Energy Charges	
	For the billing months of July - October	
	For all kWh used per month, per kWh*	9.3826¢
	For the billing months of November – June	
	For all kWh used per month, per kWh*	9.3826¢

- \* For customers receiving Supplemental Security Income (SSI) under the program administered by the Social Security Administration and who are blind, disabled, or 65 years of age or over, the rate for the first 350 kWh used per month shall be 8.4772 cents per kWh. This is an experimental rate authorized by the North Carolina Utilities Commission on August 31, 1978. The present maximum discount to customers being served under this experiment is \$ 3.17 per month.
- Customers that use more than 350 kWh per month receive a discount of \$3.17
- Customers that use less than 350 kWh per month receive a discount equal to: total kWh x .9054 cents
  - 9.3826 cents/kWh 8.47772 cents/kWh = 0.9054 cents/kWh discount
- This discount is only available for DEC customers

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Recipients are automatically mailed an SSI rate application by the North Carolina Department of Human Resource. The customer then completes and takes the application to the Social Security Administration (SSA) to be approved. The customer then mails in their application.

Additionally, the Company sends a bill insert annually to North Carolina customers educating them on available residential rates. This bill insert includes information about the SSI rate. An electronic copy of the bill insert may be found at <u>https://www.duke-energy.com/home/billing/bill-inserts</u>.

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# Statistics on SSI Discount

#### Just under 10k participants (~0.5% of residential customers in DEC-NC)

	SSI	All DEC Customers
Percent Struggling with Arrears*	24%	18%
Average kWh	936	1,100
Average New Charges per Bill	\$106.40	\$124.54
Average Past Due/Arrears	\$60.37	\$51.57

\*According to the definition laid out in the Companies' analytics

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Estimated Age of Account Holder

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# BREAK (Resuming at 2:30 PM)





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## CONSIDERATIONS FOR VARIOUS RATE OFFERINGS





## North Carolina Low Income Affordability Collaborative

## Jack Floyd

Manager, Rates and Energy Services Energy Division, Public Staff - NCUC

## Lucy Edmondson

Staff Attorney Legal Division, Public Staff - NCUC



# Who is the Public Staff?

- Agency established in 1977
- N.C. Gen. Stat. § 62-15
- Represents the <u>using and consuming public</u> in North Carolina Utilities Commission (NCUC) proceedings

**Disclaimer:** Any views or opinions expressed today are my own and should not be interpreted to reflect the policy of the Public Staff or the State of North Carolina.

# Statutory and Regulatory Authority Regarding Regulated Utility Rates

- G.S. 62-2 (3) "To promote adequate, reliable and economical utility service to all of the citizens and residents of the State;"
- G.S. 62-2 (3a) To fix "rates in a manner to result in the least cost mix of generation and demand side reduction measures which is achievable..."
- G.S. 62-2 (4) "... To provide just and reasonable rates and charges for public utility services without unjust discrimination, undue preferences or advantages..."

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Statutory and Regulatory Authority Regarding Regulated Utility Rates

- G.S. 62-131 Rates must be just and reasonable; service efficient.
  - Every rate made, demanded or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable.
  - Every public utility shall furnish adequate, efficient and reasonable service.

Statutory and Regulatory Authority Regarding Regulated Utility Rates

- G.S. 62-133 Commission shall fix rates that are
  - **Gamma** Fair to both utility and customer
  - Based on costs of utility to serve ALL customers
  - Reasonable
- Broad but not unlimited discretion to set rates cannot exceed jurisdiction
- Exercise judgement in its determination of the "public interest"
- Decisions to be based on evidence

# Statutory and Regulatory Authority Regarding Regulated Utility Rates

 G.S. 62-140(a) – "No public utility shall, as to rates or services, make or grant any unreasonable preference or advantage to any person or subject any person to any unreasonable prejudice or disadvantage. No public utility shall establish or maintain any unreasonable difference as to rates or services either as between localities or as between classes of service..."

Apr 25 2022
## Statutory and Regulatory Authority Regarding Regulated Utility Rates

- G.S. 62-140(a) continued "Provided further, that it shall not be considered an unreasonable preference or advantage for the Commission to order, if it finds the public interest so requires, a reduction in local telephone rates for low-income residential consumers meeting a means test established by the Commission..."
- Commission has previously approved low-income energy efficiency programs and the SSI discount

Do the Current Portfolios of Utility Rates Meet Statutory Standards?

**Findings from rate cases** 

**Finding 73.** The base non-fuel and base fuel revenues and rates approved herein <u>are just and reasonable</u> for the customers of DEC, DEC, and all parties to this proceeding, and <u>serve the public interest.</u> (March 31, 2021 Order Doc. E-7 Sub 1214)

**Finding 71.** The base non-fuel and base fuel revenues and rates approved herein <u>are just and reasonable</u> to the customers of DEP, DEP, and to all parties to this proceeding, and <u>serve the</u> <u>public interest.</u> (April 16, 2021 Order Doc. E-2 Sub 1219)

## Commission Directives to the LIAC

### **Paragraph 3.e – Determine appropriateness of:**

- 1. Minimum bill concepts as a substitute for fixed monthly charges
- 2. Income-based rate plans, such as Ohio's percentage of income payment plan
- 3. Segmentation of the existing residential rate class to take into account different levels of usage
- 4. Expanding eligibility for DEC's current SSI-based program to include additional groups of ratepayers
- 5. A specific component in rates to be used to fund supplemental support programs

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## Considerations

- 1. Start with cost-based revenues, cost allocations, and rate designs.
  - Fixed versus variable costs
  - Demand- versus energy-related costs
  - Flat rates, demand rates, volumetric rates
  - Inclining versus declining block rates
- 2. Minimize subsidies between classes as much as possible. Any that remain must accomplish a public interest objective.

## Considerations

- 3. Provide opportunities for as many customers as possible to participate in programs or rates.
- 4. Identify clear public policy objectives.
- 5. Clearly define the benefits and costs to customers and utility system.
- Cost recovery (revenues, allocations, and rate designs) should align with the distribution of benefits as much as possible. Any deviation should be "in the public interest."

# What Discretion does Commission have to Implement or Modify Programs?

- Commission has authority to allow programs targeted at low-income customers that are in the public interest.
- Based on data such as that developed by SubTeam A, the Commission could determine that it would not be unreasonably discriminatory to implement programs or rates designed to benefit low-income customers.
- None of the programs listed in 3e. appear to require regulatory or statutory changes to be implemented as long as they are shown to be in the public interest and not unreasonably discriminatory.

**Contact Information** 

Jack Floyd and Lucy Edmondson (919) 715-9018 and (919) 715-3803

4326 Mail Service Center 27699-4326 www.pubstaff.commerce.state.nc.us emails: jack.floyd@psncuc.nc.gov lucy.edmondson@psncuc.nc.gov

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## PLANNING FOR PROGRAM PROPOSALS





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## **LIAC Program Proposals**



- **2/1 –** Customer Challenges Assessment (Subteam A)
- 2/3 Customer Offerings (Workshop 5)

Mid March – Affordability Metrics (Subteam B)

3/18 – Proposal Submissions for New Programs Submitted

#### Early April – Pitch Day

Those proposing new programs can overview proposal and address LIAC member questions.

Afterwards, proposals will be ranked and undergo LIAC endorsement process

	FEBRUARY					
Λ		1	2	3	4	5
6	7	8	9	10	11	12
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20	21	22	23	24	25	26
27	28					

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	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

### LIAC Macro Timeline | as of 2/3/2022



**Ongoing EE & CRD Engagement** 

Collaborative Coordination

LIAC (all)

Customer

**Metrics** 

Guidehouse



Go to menti.com and use code 9583 8570 or access the link in the chat window



INTERACTIVE



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# OPEN DISCUSSION





# Next Steps

### Homework & Look-Ahead

Dates for next set of LIAC sessions will be shared shortly

#### WHEN

Mid March -- Collaborative Workshop 6

#### WHAT

- Subteam Updates
- Proposed Affordability Metrics
- Proposed Eligibility Criteria

#### YOUR TASK(S)

- Provide feedback to the proposed
   <u>Customer Challenges Assessment</u> to Subteam A by 2/8
- Submit your Program Proposals



# ADJOURN





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## **Reference Material**



### LIAC and LIAC Subteams (Overview)



#### SUB-TEAM A Customer Challenges

#### SUB-TEAM CO-LEADS

- Arnie Richardson (Duke Energy)
- Rory McIImoil (Appalachian Voices)

#### SUB-TEAM MEMBERS

- Carol Hardison (Crisis Assist. Ministry)
- Conitsha Barnes (Duke Energy)
- Derric Grier (Duke Energy)
- Heather Pohnan (SACE)
- Jack Floyd (Public Staff)
- John Howat (NC Justice Center)
- Kay Jowers (Duke University)
- Kendrick Fentress (Duke Energy)
- Kyna Grubb (Rowan Helping Ministry)
- Lucy Edmondson (Public Staff)
- Mitch Carmosino (Duke Energy)
- Munashe Magarira (Public Staff)
- Nancy Loehr (Duke Energy)
- Scheree Gilchrist (Legal Aid of NC)
- Tommy Williamson (Public Staff)
- Tyler Fitch (Vote Solar)

Exploring customer energy affordability challenges

#### **SUB-TEAM FOCUS**

Position the LIAC to prepare an assessment of current affordability challenges facing residential customers

- Consider the customer demographic data and other information
- Use the data and information to identify affordability challenges for NC residential customers
- Develop "assessment" recommendations

#### **SUB-TEAM TASKS**

- 1) Compile data inputs needed to conduct assessment
- 2) Align on interpretation of data
- 3) Develop insights to share with boarder LIAC and propose assessment

#### **KEY MILESTONES**

- 9/16 Workshop 2 presentation on Customer Analysis
- 11/12 Workshop 3 presentation on Trends & Patterns
- 02/2021 Customer Challenges Readout to LIAC



#### **SUB-TEAM B** Affordability Metrics

#### SUB-TEAM CO-LEADS

- La'Meshia Whittington (Advance Carolina, NC Black Alliance)
- Conitsha Barnes (Duke Energy)

#### SUB-TEAM MEMBERS

- AI Ripley (NC Justice Center)
- Arnie Richardson (Duke Energy)
- Brady Allen (Duke Energy)
- Bradley Harris (Duke Energy)
- David Neal (Southern Env Law Center)
- Eddy Via (Duke Energy)
- Jack Floyd (Public Staff)
- John Howat (NC Justice Center)
- Lucy Edmondson (Public Staff)
- Mitch Carmosino (Duke Energy)
- Munashe Magarira (Public Staff)
- Nancy Loehr (Duke Energy)
- Peggy Force (NC OAG)
- Rory McIlmoil (Appalachian Voices)
- Scheree Gilchrist (Legal Aid of NC)
- Tara Fikes (NC ORR)
- Tommy Williamson (Public Staff)

#### 



Benchmarking definitions of and metrics used for defining "affordability"

#### **SUB-TEAM FOCUS**

Position the LIAC to develop suggested metrics or definitions for "affordability" in the context of the Company's provision of service in its North Carolina service territory and explore trends in affordability.

- Address associated questions posed in the Commission order
- Report findings to broader LIAC

#### **SUB-TEAM TASKS**

- 1) Identify and compile information to be investigated
- 2) Align on questions to be answered
- Identify any expert input / opinions needed to support positions (LIAC education)
- 4) Suggest metrics / definition for "affordability"
- 5) Prepare and present suggestions to broader LIAC for consideration

#### **KEY MILESTONES**

3/15 – Workshop 6 presentation on Affordability Metrics



#### SUB-TEAM C Rates & Programs

#### SUB-TEAM CO-LEADS

- Ken Szymanski (Apartment Association of NC)
- Detrick Clark (NC Community Action Association)

#### SUB-TEAM MEMBERS

- AI Ripley (NC Justice Center)
- Anitra Watson (Dominion Energy)
- Bradley Harris (Duke Energy)
- Christina Cress (CIGFUR)
- Claire Williamson (NC Justice Center)
- Daniel Pate (NC SEA)
- Forest Bradley-Wright (Duke Energy)
- Jack Floyd (Public Staff)
- Kathleen Richard (Duke Energy)
- Kevin Price (National Institute Econ Dev)
- Kyna Grubb (Rowan Helping Ministry)
- Lisa FaJohn (Dominion Energy)
- Lucy Edmondson (Public Staff)
- Munashe Magarira (Public Staff)
- Paula Hemmer (NC DEQ)
- Peggy Force (NC OAG)
- Tim Duff (Duke Energy)
- Tommy Williamson (Public Staff)

Investigating current assistance programs, rate designs, cost impacts

#### **SUB-TEAM FOCUS**

Investigate the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability

- Address associated questions posed in the Commission order
- Report findings to broader LIAC

#### **SUB-TEAM TASKS**

- 1) Identify and compile information to be investigated
- 2) Align on questions to be answered
- Identify any expert input / opinions needed to support investigation (LIAC education)
- 4) Conduct investigation(s)
- 5) Prepare and present findings to broader LIAC for consideration

# Apr 25 2022

#### **KEY MILESTONES**

- 12/09 Existing Rates presentation to LIAC
- 2/03 Existing Programs presentation to LIAC

Jun 2022 – Funding & Resource Needs presentation to LIAC





#### \* Subject to change based on input from LIAC and Sub-team Leads

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**SUB-TEAM D** Collaborative Coordination

#### SUB-TEAM CO-LEADS

- Thad Culley (Sunrun)
- Paula Hemmer (NC DEQ)

#### SUB-TEAM MEMBERS

- **Bradley Harris** (Duke Energy) CRD Collaborative Liaison
- Christina Cress (CIGFUR)
- Claire Williamson (NC Justice Center)
- David Neal (SELC)
- Forest Bradley-Wright (SACE)
- Jack Floyd (Public Staff)
- Kathleen Richard (Duke Energy)
- La'Meshia Whittington (Adv Carolina)

- Lucy Edmondson (Public Staff)
- Munashe Magarira (Public Staff)
- Paula Hemmer (NC DEQ)
- Tommy Williamson (Public Staff)
- Tim Duff (Duke Energy) EE Collaborative Liaison

Engaging the EE and CRD Collaboratives; proposing consensus and prioritization rules

#### **SUB-TEAM FOCUS**

Identify interim material produced from this collaborative to be shared and information available from each of the other two groups available to our groups.

Support LIAC in development of approach for reaching LIAC "consensus" for making recommendations to the Commission

#### **SUB-TEAM TASKS**

- Identify information to be shared with EE and Comprehensive Rated Design Collaboratives
- 2) Identify information available from the EE and Comprehensive Rated Design Collaboratives
- Determine, compile and report out to LIAC any relevant input from other two collaboratives
- 4) Develop and present recommended approach to LIAC "consensus"

#### **KEY MILESTONES**

12/09 – CRD Collaborative Rates Briefing to LIAC Jan 2022 – Joint Collaborative Session Jun 2022 – Final Report Development



### **Commission Expectations**

#### **Collaborative Timeline & Milestones**

- Within 90 days of the date of this Order, the Company and the Public Staff shall convene a collaborative for interested stakeholders to address the affordability of electric service for low-income customers. The collaborative should be facilitated by a third party with experience in affordability issues. The Company should solicit from interested stakeholders the names of individuals that should be invited to participate in the collaborative. As an example, interested stakeholders could include the Public Staff, the AGO, NCJC, NCHC, NAACP, AARP, Legal Aid of North Carolina, etc. Stakeholder groups that want to be directly represented in the collaborative's work should contact the Public Staff to signal their interest in participating. A final list of participants including support for their participation should be submitted to the Commission. After reviewing this recommended list, the Commission will either accept or suggest modifications to the list.
- **Within 180 days** of the date of this order, the Company and the Public Staff shall file with the Commission a report (individually or jointly) that briefly summarizes progress to-date including any noteworthy interim findings or recommendations. Thereafter, progress reports are to be filed quarterly.
- Within 12 months of the date of the first workshop, the Company and the Public Staff are required to file a joint final report with the Commission outlining the feedback and recommendations obtained in the collaborative, including any new programs, rate schedules, and funding mechanisms that have wide or consensus support of stakeholders. In addition to the report identifying stakeholder consensus, it should also identify programs that were studied and supported by a number of stakeholders but may not have reached full consensus.
- The Commission will then issue a procedural order allowing for the public and interested parties to comment on the joint final report.

#### **Collaborative Outputs**

 The collaborative recommendations should include a mix of proposed programs that can be implemented in the near term and those that will require additional lead time to implement due to complexities.

For example, the Commission anticipates/expects concrete proposals that (a) include both elements of rate design and programs that can be layered on top of existing or future rate plans, (b) can be implemented by petition and proceedings prior to the next general rate case because the proposals do not include rate design changes, (c) will be proposed by DEC for consideration in its next general rate case, and (d) have been fully costed out.

 The Commission does not intend the stakeholder processes for affordability and comprehensive rate design to be mutually exclusive or contingent upon the completion of either stakeholder process. If consensus is achieved on particular issues surrounding affordability, **proposals** may be brought forward for consideration as soon as practicable. Given the overlapping nature of the work of the energy efficiency collaborative, the proposed rate study effort, and the affordability collaborative, those working on the three efforts should, to the extent possible, stay abreast of and consider the ongoing work of the separate teams as they each carry out their work.

At a minimum, each progress report should include a section that describes the major interactions and connections between the affordability collaborative and the rate study and energy efficiency stakeholder groups. The Commission recommends that to the extent appropriate, interim material produced from each of the three groups be made available to each of the other groups. The Commission recommends holding at least one in person or virtual joint meeting of the three groups to specifically identify and discuss key areas of concern.

Source: Docket No. E-7, SUB 1213 | Application by Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina | Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice | Evidence and Conclusion for Finding of Fact NOS. 52–54



### **Commission Expectations** (NCUC March 2021 Order)

(1) **Prepare an assessment** of current affordability challenges facing residential customers. The assessment should:

- a. Provide an analysis of demographics of residential customers, including number of members per household, types of households (single family or multi-family), the age and racial makeup of households, household income data, and other data that would describe the types of residential customers the Company now serves. To the extent demographics vary significantly across the Company's service area, provide additional analysis of these demographic clusters.
- b. Estimate the number of [low income] customers -- i.e., customers who live in households with incomes at or less than 150% of the federal poverty guidelines (FPG), and those whose incomes are at or less than 200% of the FPG.
- c. For the different demographic groups identified as part of a. and b., provide an analysis of patterns and trends concerning energy usage, disconnections for nonpayment, payment delinquency histories, and account write-offs due to uncollectibility.
- (2) Develop suggested metrics or definitions for "affordability" in the context of the Company's provision of service in its North Carolina service territory and explore trends in affordability. Questions to be answered include but should not be limited to:
  - a. How is "affordability" defined and applied in other jurisdictions particularly for those with similar legal and regulatory frameworks, i.e., vertically integrated investor-owned utilities?
  - b. What criteria (both qualitative and quantitative) should the Commission consider when determining who would be eligible for different types of affordability programs?

- (3) Investigate the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability. Questions that should be addressed include:
  - a. What defines a "successful program" and what metrics should be monitored and presented that show the impact of programs on addressing or mitigating affordability challenges?
  - b. What percentage of residential customers are eligible for each <u>existing program</u> and what percentage of eligible customers enroll in and/or take advantage of these programs?
  - c. What is the impact of existing programs on the energy burden for enrolled customers?
  - d. Should existing programs be maintained, replaced or terminated? If maintained, should any changes be made to improve results? If programs are replaced, what would replace them?
  - e. Are the following programs, in addition to any others agreed upon by the collaborative, appropriate for implementation in North Carolina and, if so, what statutory or regulatory changes are necessary to permit implementation: (1) minimum bill concepts as a substitute for fixed monthly charges; (2) income-based rate plans, such as Ohio's percentage of income payment plan; (3) segmentation of the existing residential rate class to take into account different levels of usage; (4) expanding eligibility for DEC's current SSI-based program to include additional groups of ratepayers; and (5) the inclusion of a specific component in rates to be used to fund supplemental support programs. Priority should be given to identifying affordability programs that comply with the current statutory framework, however the collaborative may describe high potential programs that have been successful in other jurisdictions but which would require statutory changes for implementation in North Carolina.
  - f. How do specific programs addressing affordability affect cost-causation and allowance of costs among classes?
  - g. How does cost-of-service allocation affect rate design and affordability of rates?
  - h. What, if any, practices and regulatory provisions related to disconnections for nonpayment should be modified or revised?
  - i. What existing utility and external funding sources are available to address affordability? Estimate the level of resources that would be required to serve additional customers
  - j. What are the opportunities (and challenges) of the utilities working with other agencies and organizations to collaborate and coordinate delivery of programs that affect affordability concerns?



## Contact

Chip Wood Partner chip.wood@guidehouse.com 704.347.7621

Jamie Bond Associate Director jamie.bond@guidehouse.com 704.347.7626





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North Carolina Utilities Commission



#### Appendix D. LIAC Commission Briefing

During the February 21, 2022 Commission briefing, Duke Energy, the Public Staff and Subteam Co-Leads from LIAC subteams provided updates on the progress of LIAC subteam efforts. This appendix includes the material shared during that briefing.



## North Carolina Low Income Affordability Collaborative

### North Carolina Utilities Commission Briefing

February 21, 2022

Convened by





### Low Income Affordability Collaborative (LIAC) Approach



Public Staff

## Stakeholder work is conducted through subteams. Key subteam outputs are posed to the LIAC for endorsement.

	Subteam A	Subteam B	Subteam C	Subteam D
Subteam Tasks	Assess Customer Challenges: Assess current energy affordability challenges facing residential customers	Develop Affordability Metrics: Develop suggested metrics or definitions for "affordability" and explore trends in affordability	Investigate Existing Rates & Programs: Investigate the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability	Drive Collaborative Coordination: Coordinate between the affordability collaborative and the comprehensive rate review and energy efficiency stakeholder groups
Co-Leads	Rory McIlmoil Appalachian Voices Arnie Richardson Duke Energy	Conitsha Barnes Duke Energy La'Meshia Whittington Advance Carolina	Detrick Clark NC Community Action Association Ken Szymanski Apartment Association of NC	Thad Culley Sunrun Paula Hemmer NC DEQ State Weatherization
Teams	20 LIAC members 12 LIAC organizations	19 LIAC members 9 LIAC organizations	23 LIAC members 12 LIAC organizations	15 LIAC members 10 LIAC organizations



LIAC consists for **33 organizations** and approximately **50 active participants** 

## Sub-Team A Update

Prepare an assessment of current affordability challenges facing residential customers.

Task	Activities Completed
Analysis of demographics of residential customers	<ul> <li>Assessed demographics by race, age, income, housing type, heating source, family size, housing value, location</li> </ul>
Household income- based estimations	<ul> <li>Segmented by household income for DEC, DEP, total</li> </ul>
Analysis of trends and patterns	<ul> <li>Analyzed billing data and arrears by average energy usage, average bill, past due amounts, disconnect non-pay, energy intensity, and seasonal impacts across all demographics</li> </ul>
On-going Analytics (in- progress)	<ul> <li>Identified additional areas to analyze including DNP notifications, electric burden, mobile homes</li> <li>Developing statistical models to enhance the descriptive analytics</li> </ul>
Assessment of Affordability Challenges	<ul> <li>Developed and socialized initial findings related to customer challenges</li> <li>Awaiting final LIAC endorsement</li> </ul>

Public Staff

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### **Preview of Initial Findings**

Subteam A

- 2% of customers are LIEAP/CIP customers, 15% of customers are estimated to be below 150% FPL, with another 11% between 150% and 200% FPL (28% total)
- Significant number of customers meet the "arrears definition"<sup>1</sup>
- Energy intensity (kWh/square foot) is a driving factor
- Seasonal energy intensity drives higher bills in the winter
- Racial disparities in arrears and disconnects for non-pay<sup>2</sup>

<sup>1</sup> Arrears is defined as two months spent at two times (2x) the average bill overdue <u>or</u> six months spent at one times (1x) the average bill overdue

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## **Progress To Date**

Develop suggested metrics or definition for "affordability" and explore trends in affordability

Task	Activities Completed
Definition and application of "affordability" in other jurisdictions	<ul> <li>Analyzed existing programs and metrics used across other jurisdictions Identified existing utility and state programs designed to address affordability</li> </ul>
Trends in affordability	<ul> <li>Engaged subject matter experts to brief subteam</li> <li>Defined questions to be answered and conducted jurisdictional research</li> </ul>
Criteria for determining affordability program eligibility	<ul> <li>Investigating affordability criteria used by state or utility programs to identify program administration alignment opportunities</li> <li>Compiling findings into matrix for LIAC review</li> </ul>
Suggested affordability metrics	<ul> <li>Currently exploring metrics for existing utility or state programs designed to address affordability</li> </ul>

Documentation of findings underway and expect to brief LIAC on affordability trends in March



Subteam C

## **Progress To Date**

### Investigating existing customer offerings and practices, in addressing affordability

Task (Assessments)	Activities Completed		
Income qualified program insights	<ul> <li>Overviewed existing income-qualified offerings         <ul> <li>DEC/DEP EE programs (weatherization programs and pilots, Refrigerator Replacement, and Neighborhood Energy Saver program)</li> <li>Assistance program (Share the Light)</li> <li>Helping Home Fund Program</li> </ul> </li> </ul>		
	<ul> <li>Compiled program-specific participation data requested by Commission</li> </ul>		
Affordability program effects on cost causation and allowance of cost among classes	<ul> <li>Overviewed rate design concepts including cost of service, cost causation and c allowances</li> </ul>		
Appropriateness of implementation of specific rates (min bill, income-based	<ul> <li>Engaged rate design SMEs to provide rate design concept overview for subteam members and support associated analyses related to minimum bill vs fixed charge and segmentation by class</li> </ul>		
rates, SSI-based rates, segmentation)	<ul> <li>Overviewed income-based rates and discount programs, including:</li> <li>DEC SSI discount program</li> <li>Virginia's Proposed Percent of Income Payment Plan</li> </ul>		
Customer program proposals and recommendations	<ul> <li>Reviewed existing programs for subteam awareness; program proposal process developed, and proposals solicited (proposals requested no later than March)</li> </ul>		



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## **Key Subteam D Tasks**

### Consider ongoing work of the EE and CRR Collaboratives

Task **Activities Completed** Discussion of key areas of Held joint meeting of three collaboratives on concern via Joint Meeting 2/26; 147 participating, Hosted four concurrent breakout sessions to • discuss areas of intersection, gaps and opportunities Consideration of ongoing EE and Identified cross-collaborative participants and ٠ designated Utility, Public Staff and CRR Collaborative work community/industry cross-collaborative liaisons Standing agenda item added to regular LIAC sessions for sharing EE/DSM and CRR updates Access to interim material Leveraged cross-collaborative members to share EE/DSM program insights and rate produced by three collaboratives design concepts Shared customer demographic assessment data with EE/DSM and CRR collaboratives Public Staff

CRR

13%

10%

**Joint Session Participation** 

3%

4%

34%

LIAC

ΞE

6%

9%

# Apr 25 2022

**GUEST** 

19%

LIAC/EE/CRR jointly identified:

- 36 distinct gaps and opportunity areas
- 19 distinct solution areas



#### Appendix E. Workshop Material Presented March 31, 2022

During Workshop 6, LIAC subteam D overviewed key takeaways from the LIAC Joint Collaborative Session and Subteam B shared its initial research findings related to how "affordability" is defined and applied in other jurisdictions and the associated metrics or definitions for "affordability". This appendix includes the material used to support those workshop discussions.



## North Carolina Low Income Affordability Collaborative

### Workshop 6

March 31, 2022

Convened by





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Apr 25 2022

## Welcome

### **Guidehouse Facilitators**

### **JAMIE BOND**

Lead Facilitator & Subteam A & D Support

**NNEOMMA NWOSU** 

Workshop Facilitator & Subteam B Support

**MACIE SHOUN** Workshop & Subteam C Support

Guidehouse 40-50 active LIAC participants Charitable / Trade Social Aid **Organizational Representation** Association or 🖸 Univ Interests Group Utility Government 4 LIAC B D A subteams First choice Rank Guiding WE COME PREPARED WE VALUE RESPECTFUL DEBATE





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#### **SESSION OBJECTIVES**

- Maintain awareness of EE/CRD Collaboratives
- Hear progress updates from subteams
- Gain familiarity with customer offerings (offered by Duke Energy and elsewhere)

## **NC Low Income Collaborative**

Agenda | March 31, 2021

#### Workshop VI: Affordability Metrics

CONVENE

	Welcome, Safety & Agenda	Guidehouse	
	Collaborative Updates (EE/CRR)	EE/CRR Liaisons	
Ā	Subteam Progress (Subteams A, C, D)	Subteam Co-Leads	60-75 min
	Code of Conduct Waiver Update	Duke/Public Staff	
	BREAK		
	<ul><li>Affordability Metrics (Subteam B):</li><li>Principles of Affordability &amp; Eligibility</li></ul>	LIAC Subteam B	
	Pitch Day Update	Guidehouse	60-75 min
PA	Round Table	All (GH Facilitated)	
	Wrap-up & Look Ahead	Guidehouse	
	ADJOURN		
### LIAC Macro Timeline | as of 3/31/2022

Aug

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Facilitator(s)

Subteam A –

LIAC (all)

Customer

Sept

Progress Report

Customer data analysis

R

Oct





## EE & CRR LIAISON UPDATES





## LIAC SUBTEAM PROGRESS





## **Key Subteam Activities**

### SUBTEAM A

Prepare an assessment of current affordability challenges facing residential customers

### SUBTEAM B

Develop suggested metrics or definitions for "affordability"

### SUBTEAM C

Investigate the strengths and weaknesses of existing rates, rate design, billing practices, customer assistance programs and energy efficiency programs in addressing affordability

### SUBTEAM D

Stay abreast of and consider the ongoing work of the comprehensive rate design and the EE collaboratives as they each carry out their work



## Subteam A Updates – Customer Assessment





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## Subteam C Updates – New Structure

Prior Mini Subteams

Success Measures and Program Impact

Existing EE Programs and Energy Burden

**MACIE SHOUN** 

DUKE ENERGY

Subteam C Support

Public Staff



Guidehouse

### Working Group C-1

Claire Williamson, NCJC Conitsha Barnes, Duke

Al Ripley, NCJC Anitra Watson, Dominion Arnie Richardson, Duke Bradley Harris, Duke Daniel Parker, NCSEA John Howat, NCLC/SELC Lisa FaJohn, DEV Rory McIlmoil, App Voices Tim Duff, Duke Tommy Williamson, PSNCUC

#### **Working Group C-2**

Detrick Clark, NCCAA Tommy Williamson, PSNCUC

Al Ripley, NCJC Bradley Harris, Duke Christina Cress, CIGFUR Conitsha Barnes, Duke Forest Bradley-Wright, Jack Floyd, PSNCUC Kathleen Richard, Duke Ken Szymanski, NCAA Kevin Price, NIED Lucy Edmondson, PSNCUC Mitch Carmosino, Duke Paula Hemmer, NC DEQ Peggy Force, NC OAG 

 Prior Mini Subteams

 Statutory and<br/>Regulatory

 Rates and Cost<br/>Causation

 DNP and<br/>Disconnections

Program Success Metrics(3.a)

- Existing Customer Programs (3.b, c, d)
- Appropriateness of Min Bill, income-based rates, segmentation, SSI-based program (3.e)
- Cost Causation & Allowance Among Classes (3.f)
- Cost of Service Impacts (3.g)
- DNP Practices (3.h)
- External Funding Sources (3.i)
- Utility/Agency Collaboration (3.j)

CRR

13%

ΞΞ

3%

## Subteam D Updates – Joint Session Findings

#### Participants in total: 147 Other O Charitable / Social Aid Commercial / Solution Provider 14% Representation greatest from host organization (LIAC) 27% 33% Government Agency Utility 🔵 11% Trade Association / Interest Group 21 • Sixty percent (60%) self-identified as a *utility* or *government agency* participant

 Some session participants noted that "nonprofit advocacy" would have been a better description of their organizations

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**GUEST** 

19%

## **Breakout Summary -**LIAC and EE Integration

### LIAC to EE Collaborative

- Data Analytics to better understand need and opportunities
- Identification of additional programs targeting lowincome customers that can be leveraged alongside energy efficiency
- New EE program suggestions and review and critique of existing EE programs
- Definition of success to be applied to future EE low-income program evaluations

### **EE Collaborative to LIAC**

- Provision of data around existing programs including FM&V
- Updates regarding on-going efforts to enhance existing low-income programs and add new EE programs and pilots
- Updates on low-income study being conducted around the reach of non-low-income targeted EE programs



Where can CRR/LIAC work together (areas of overlap)?

Subteam D

- Percentage of Income Payment Plan (PIPP) and other low-income rate designs they Low-income customer participation in Shared Solar offering

- Understanding the impacts of multi-year rate plan (PBR) on LIAC recommendations TOU Load Shifting discount times (implications for low-income customers)

- Consistent eligibility requirement for all departments (rates/EE components of a bill) Do we have a "fair and firm" income requirement or do we design in flexibility to enable It can shift depending on needs (e.g., raising LI EE program eligibility up to 200% the



## Breakout Summary -Customers Challenges

#### **Customer Issues**

- Low-income customers have different issues/experiences
- Low-income homes present barriers to EE implementation
- Long-term affordability vs management of monthly bills

### **Customer Education & Outreach**

- Provide better E&O on bill/program offerings
- Provide direct interaction hotline or other personal engagement
- General education on how to reduce use/EE measures

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## Breakout Summary – Program Design Considerations

### **Program Design Considerations**

#### 1. Program Administration

- Integration of bill affordability with lowering annual costs
- Integration of electricity and natural gas programs

#### 2. Program Design

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- Sharing investments and benefits (renters/multifamily)
- Utility Cost Test (UCT) program effectiveness/value for customers
- Determining level of funding from EE Rider
- New programs behaviors and success rates

#### **Cost and Resource Considerations**

- 1. Utility Costs and Resources
  - Cost recovery mechanisms
  - Administration costs

#### 2. Program Costs and Resources

- Cost of serving LI population scale of need
- High cost to reduce energy use vs cost savings
- Ensuring program longevity and funding

#### 3. EE Cost & Resources

- Supply chain issues
- Increasing cost of EE improvements
- Workforce constraints

### **New Policy Impacts**

Subteam D

- Multi-year Rate Plan
- Carbon Plan

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## **Breakout Summary – Changes and Solutions**

#### **Programs Design**

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- Offer a collection of programs for bills and energy use
- Consider longer term solutions (i.e., helping home program)
- New programs midstream program, renter payment program, on-bill program

### **Engagement and Enrollment**

- Integrate information and application process for multiple low-income programs
- Develop automatic enrollment
- Build trust by utilizing community leaders and existing customers

#### **Outside the LIAC Box**

- Affordability/quality of homes, especially for multifamily & rental
- State/Federal policies to require EE, especially for multifamily & rental
- Utility engagement on improving housing/building code
- Seek non-ratepayer funding for health, safety, and incidental repair

#### Implementation Outside Duke Energy

- Create data sharing platform for organizations
- Coordinate with service agencies to educate & qualify customers





Subteam D







## BREAK (Resuming at 2:35 PM)





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## AFFORDABILITY METRICS & ELIGIBILITY





Language from NCUC Order

Develop suggested metrics or definitions for "affordability" in the context of the Company's provision of service in its North Carolina service territory and explore trends in affordability.

Questions to be answered include but should not be limited to:

How is "affordability" defined and applied in other jurisdictions particularly for those with similar legal and regulatory frameworks, i.e., vertically integrated investor-owned utilities?

What criteria (both qualitative and quantitative) should the Commission consider when determining who would be eligible for different types of affordability programs?



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Apr 25 2022

## **Research Overview**

- Analyzed existing programs and metrics used across other jurisdictions
- Identified existing utility and state programs designed to address affordability
- Explored metrics for existing utility or state programs designed to address affordability
- Investigating affordability criteria used by state or utility programs to identify program administration alignment opportunities

   Energy Burden and Self Sufficiency Standard<sup>1</sup>



# Definition of "affordability" and application in other jurisdictions



## **Affordability Rulemaking**

- California Public Utilities Commission ("CPCU") issued an Order Instituting Rulemaking (<u>R.18-07-006</u>)<sup>2</sup> to:
  - Develop a framework and principles to identify and define affordability criteria for all utility services under CPUC jurisdiction (electricity, natural gas, water and communications); and
  - Develop the methodologies, data sources, and processes necessary to comprehensively assess the impacts on affordability of individual CPUC proceedings and utility rate requests.
- July 2020, the CPUC issued D.20-07-032 directed Commission to develop Annual Affordability Report detailing assessment of affordability of electricity, natural gas, water and communications services.
- CPCU issued <u>2019 Annual Affordability Report (ca.gov)</u> on April 29, 2021.







California Public Utilities Commission

## **Affordability Rulemaking - Definition**

 The Decision defined affordability "as the degree to which a <u>representative household</u> is able to pay for an <u>essential utility service charge</u>, given its <u>socioeconomic status</u>."

Three elements included in the Decision:

"Representative household" recognizes that households will have a wide variety of experiences that cannot be perfectly captured by depicting a single household.

"Essential utility service charge" refers to the costs borne by a representative household for the quantity of utility service required to enable a ratepayer's health, safety, and full participation in society.

"Socioeconomic status" refers to the social and economic standing of a given household.



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## **Affordability Rulemaking - Metrics**

North Carolina Utilities Commission

CPUC Decision identified three independent, but related, metrics allow for the creation of a more complete picture of affordability than any one metric could provide on its own.

Affordability Ratio (AR) metric quantifies the percentage of a representative household's income that would be used to pay for an essential utility service, after non-discretionary expenses such as housing and other essential utility service charges are deducted from the household's income.

S essential services bill = ARS household income – non-discretionary expenses (housing and other utilities) where utility services are least affordable for households at a particular point of the income distribution (e.g.,  $AR_{20}$  is households at the lowest 20th percentile of income) lower AR = more higher AR = affordable affordable Public Staff Guidehouse

- Hours at Minimum Wage (HM) metric quantifies the hours of earned employment at the city minimum wage necessary for a household to pay for essential utility service charges.
- Minimum wage-based metric also implicitly considers the impact of essential utility service charges on lower-income customers regardless of the socioeconomic conditions of the community as a whole.

=

hours of earned employment at the local minimum wage needed to pay for essential services.

HM where low-income households will have the most difficulty paying for essential services, regardless of the socioeconomic condition of the neighbors.

- Socioeconomic Vulnerability Index (SEVI) metric represents the relative socioeconomic standing of census 2022 tracts, referred to as communities, in terms of poverty, unemployment, educational attainment, linguistic isolation, and percentage of income spent on housing.
- This metric considers how a rate change may affect one community's ability to pay more than another's.

relative socioeconomic standing of a community (census tract) based on:

- poverty
- unemployment
- education
- percent of income spent on housing
- linguistic isolation
- SEVI identifies communities least able to afford increases in essential services charges

## **Affordability Review**

- Members of Subteam B continue to analyze the use of an energy burden threshold in various jurisdictions, for example;
  - New York Public Service Commission adopted a policy that energy burden at or below 6% of household income shall be the target level for all low-income households in New York.<sup>3</sup>

<sup>3</sup> NYSDPS-DMM: Matter Master



What criteria (both qualitative and quantitative) should the Commission consider when determining who would be eligible for different types of affordability programs?



## **Analysis of Low-Income Program Eligibility**

	Low Income Energy Assistance Program	Crisis Intervention Program (CIP)	Housing Opportunities & Prevention of Eviction Program	NC DHHS Food & Nutrition Services	NC State Weatherization Program	Low Income Energy Assistance Program	DEC & DEP Neighborhood Energy Saver Program <sup>4</sup>
HOUSING							
Owner (O) Renter (R)	O & R	O & R	R	O & R	O & R	O & R	0 & R
Single Family (SF) Multifamily (MF)	SF & MF	SF & MF	SF & MF	SF & MF	SF & MF	SF	SF & MF
INCOME LEVEL							
Criteria Used	Federal Poverty Level	Federal Poverty Level	Area Median Income	Max Gross Income Limit	Federal Poverty Level	Federal Poverty Level	Targets Neighborhoods where ≥ 50%
Eligibility Level	≤130%	≤150%	≤80%	130% or 200%	200%	Mirrors state weatherization req	households are below 200% FPL
OTHER							
Heating Source- Dependent?	Yes	Yes	Yes	No	No	No	No
Reference Links	https://www.ncdhhs .gov/divisions/socia I-services/energy- assistance/low- income-energy- assistance-lieap	https://www.ncdhhs.gov/ divisions/social- services/energy- assistance/low-income- energyassistance/crisis- intervention-program	https://www.rebuild.nc.gov/ hope-program	https://www.ncdhhs. gov/FNS	Weatherization Assistance Program   NC DEQ	nceeresincqualindividual .pdf (azureedge.net)	nceeresincqualneighbo rhood.pdf (azureedge.net)





<sup>4</sup> Landlord permission required

## Conclusion

- NCUC should consider federal poverty level of 200% when determining Eligibility for Programs to address affordability
- **Program Design** will incorporate the following considerations:
  - Heating & Cooling
  - Owner or Renter
  - Multi Family or Single Family
- Success Metrics for program affordability to be addressed in Subteam C workstream



## PLANNING FOR PITCH DAY





## **LIAC Program Proposals**

North Carolina Low Income Affordability Collaborative	DAS DEBERGY.
Program Proposal Worksheet	Supported by CONDONNAME
submitted will submitted submitted will the su	(omission link:
Use this form to draft your propositive for	
Enter your name and organization	
Enter your email address.	
	Disgram
this proposal process.	Program
PROGRAM NAME: For the purposed program.	wintion &
please provide that this may change if implementary	Description
mint the program be	chiective
PROGRAM DESCRIPTION: Now the service and the services.	Objective
described to the Sum implementation or prop	
mport benefit(s) the	
BEOGRAM OBJECTIVE: Note any set	
program intended to use the population or	
TARGET PARTICIPANTS: Identity	tration
demographic is user	inistratio
Please share any thought pre-	Adminis
PRGRAM ADMINISTRATION	<b>N</b>
have about with enroll participants, etc.)	ibility
eligibility" Who would a start the criteria program eligibility	Eligipme
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THE METRICS: What metric() or not [and	
SUCCESS in it the program is successed actor or partners	utional
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not it been successfully proposed berriers elemented.	
(e.g- iurisdiction + Mas iurisdiction any specific regulation	
Are there to be addressed y	
2 (12)	

#### **Pitch Day – 4/20**

- Proposal submissions 4/8
- GH will Consolidate and distribute to LIAC members
- Early feedback to submitters
- Pitch Day with Q&A 4/20
- Scoring & Prioritization

#### Workshop 7 – 5/19

Resulting Portfolio Review, Resource Need & Existing Funding Sources (Subteam C)

#### Workshop 8 – 6/9

Review Proposed Program Portfolio and Finalize LIAC Recommendations

APRIL						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY								
1	2	3	4	5	6	7		
8	9	10	11	12	13	14		
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30	31						

JUNE								
			1	2	3	4		
5	6	7	8	9 🏂	10	11		
12	13	14	15	16	17	18		
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26	27	28	29	30				

Public Staff

North Carolina Utilities Commission



## Final Report of Recommendations with LIAC Input



DUKE

Guidehouse

**Public Staff** 

North Carolina Utilities Commission



Commission 12 months of the date of the first LIAC workshop

	JULY							
						1	2	
	3	4	5	6	7	8	9	
	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	
	24	25	26	27	28	29	30`	
	31							

Apr 25 2023

#### due on existing bills DUKE duke-energy.com Your Energy Bil Billing summ Previous Amount Due 0 In need of direct financial Basic Facility Chan Energy Charge sable Foerry I es Tax for Utili Struggling to meet the assistance to settle charges ongoing cost of energy for prior energy usage Unaffordable Energy Bill Bill payment assistance In need of lower rates and/or Payment flexibility more efficient consumption • Bill forgiveness \$116.47 ty Dec 4 ther Dec 4, the amount ill increase to \$117.63. DUKE ENERGY. Duke Energy Return Mail PO Box 1090 Chartotte, NC 28201-1090 SALLY SAMPLE PO Box 109 Charlette, NC 28201-1094 Energy Efficiency Adjusted rates 889100194162580004400000000000000116470000011647 Non-utility energy access Fixed bills (e.g., self generated solar) Bill discounts

Successful solutions are designed around on the problem to be solved (job to be done) and ability to execute.



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Distinct Conditions / Populations

Limited

Income

Financial Crisis

Fixed

Income

## **Assessing Affordability Programs**

Inability to pay amount

## What is success here?

Our goals can only be reached through the vehicle of a plan. There is no other route to success.

-Pablo Picasso



More progress results from the violent execution of an imperfect plan than the perfection of a plan to violently execute.

— Hubert H. Humphrey —

AZQUOTES



"Without strategy, execution is aimless. Without execution, strategy is useless."

> Morris Chang CEO of TSMC



## OPEN DISCUSSION





## **Next Steps**

### Homework & Look-Ahead

#### **Remaining LIAC Sessions**

- 4/20 Pitch Day Session
- 5/19 Workshop 7
- 6/9 Workshop 8
- 7/7 Workshop 9

#### **Pitch Day Preparation**

- Input request around evaluation criteria (and/or success criteria)
- Package of proposals to review (along with review instructions)
- Pitch day instructions for presenters and LIAC members

Guidehouse OUKE Control Carolina Utilities Commission

#### Next up

WHEN 5/19 – Workshop 7

#### WHAT

- Subteam Updates
- Recommended Portfolio
- Resource Needs & Funding Sources

#### YOUR TASK(S)

- Watch for LIAC member input requests from Subteam C
- Watch for Pitch Day Communications
- Submit your <u>Program Proposals</u> by 4/8

## **ADJOURN**





engagement



## Contact

Chip Wood Partner chip.wood@guidehouse.com 704.347.7621

Jamie Bond Associate Director jamie.bond@guidehouse.com 704.347.7626





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North Carolina Utilities Commission

## **Key Subteam C Tasks**

#### Assessments/Investigations to Conduct

- Identify program metrics to be monitored, to measure impact of programs on addressing or mitigating affordability challenges and to define program success
- Determine the follow for existing Duke Energy (income qualified) offerings
  - percentage of customers are eligible
  - percentage of eligible customers that take advantage of offerings
  - impact of existing programs on the energy burden for enrolled customers
- Estimate the level of resources that would be required to serve additional customers
- Identify existing utility and external funding sources are available to address affordability?

#### **Questions to Address**

- How do specific programs meant to address affordability affect cost-causation and allowance of costs among classes?
- How does cost-of-service allocation affect rate design and affordability of rates?
- What are the opportunities (and challenges) of the utilities working with other agencies and organizations to collaborate and coordinate delivery of programs that affect affordability concerns?





## Key Subteam C Task

#### **Recommendations to Make**

- Are the following appropriate for implementation in North Carolina? (What, if any, statutory or regulatory changes would be necessary to permit implementation?):
  - minimum bill concepts as a substitute for fixed monthly charges;
  - income-based rate plans, such as Ohio's percentage of income payment plan
  - segmentation of the existing residential rate class to take into account different levels of usage;
  - expanded eligibility for SSI-based program offered in DEC
  - inclusion of a supplemental program support component in rates to be used for funding
- Should **existing programs** be maintained, replaced or terminated? For those to be changed, what changes should be made, and for those to be replaced, what should replace them?
- What practices and regulatory provisions related to disconnections for nonpayment should be modified or revised, if appropriate?






### **OVERALL GOAL**

 Equip LIAC to prepare an assessment of current affordability challenges

(using the data presented as key input into assessment) LANGUAGE FROM THE COMMISSION ORDER

Prepare an **assessment of current affordability challenges** facing residential customers. The assessment should:

- Provide an analysis of demographics of residential customers, including number of <u>members per household</u>, <u>types of households</u> (single family or multi-family), the <u>age</u> and <u>racial makeup</u> of households, <u>household income</u> data, and other data that would describe the types of residential customers the Company now serves. To the extent demographics vary significantly across the Company's service area, provide additional analysis of these demographic clusters.
- Estimate the number of customers who live in households with incomes at or less than 150% of the federal poverty guidelines (FPG), and those whose incomes are at or less than 200% of the FPG.
- For the different demographic groups identified as part of a. and b., provide an analysis of patterns and trends concerning <u>energy</u> <u>usage</u>, <u>disconnections</u> for nonpayment, payment <u>delinquency</u> <u>histories</u>, and account <u>write-offs</u> due to uncollectability.

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#### Included in Analytics: Per North Carolina Utilities Commission Order:

- Insights into customers under 150% and 200% federal poverty level (FPL)
- Demographics/housing including dwelling type, heating source, renter/owner, racial makeup, age of account holder and number of people in the household
- Trends in delinquency, write-offs, disconnect non-pay (DNP) and energy usage

#### Per LIAC Members Request:

- Advanced Metering Infrastructure (AMI) Load Shapes
- Additional Insights into Acxiom Data
- Tables including relative information for information detailed in graphs
- More insight into energy intensity
- Electric Energy Burden (New in V4)
- Sub-Category Housing (New in V4)
- Statistical Modeling (New in V4)
- Analysis of DNP Notifications (New in V4)

#### Other:

• Low Income Energy Assistance Program and Crisis Intervention Program (LIEAP/CIP) recipients as their own segment

### Updates to Final Analysis:

- Previous analysis had incomplete DNP data due to data retention policies in historic billing systems, which have since been resolved. As a result of
  the revisions, the DNP numbers have increased
- Refinements to the Companies' analytics allowed for more accurate segmentation of customers, leading to minor changes in insights on affordability challenges

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- OFFICIAL Acxiom (3<sup>rd</sup> party provider for demographic information) has been verified as useful and reasonably
  - Correlates with Census data and billing system
  - Correlates when compared with the Company employee checks on personal information (on subset of variables)
  - Primary use case is for marketing
- A great number of external data sources could theoretically be used for this analysis
  - To acquire individual customer-level data requires careful adherence to customer privacy laws and practices
  - Transferring, cleaning, verifying, and analyzing any new data sources on every North Carolina customer would take months
  - The Companies will continue to investigate additional data sources as necessary

accurate over large data sets, like the ones included in this presentation

- To supplement and validate research into low-income customers the North Carolina Department of Health and Human Services and the Companies entered in a data share agreement permitting the Companies to perform analysis on DEC and DEP customers identified as LIEAP and CIP recipients
- LIEAP & CIP programs are intended to help low-income families who need assistance during an energy crisis to ensure they have access to both heating and cooling services
- The Companies were provided ~53k customers (active as of 2021)
  - LIEAP Qualifications: Less than 130% FPL and reserves at or below \$2,250
  - CIP Qualifications: Less than 150% FPL and in an energy crisis



### Acxiom Data Process

# Collect information at a household level

Public data, buying activity, online registrations, magazine subscriptions, survey data, warranty information, etc.

### Model missing data

Uses other known variables of customers and information at the zip+4 and zip level using their proprietary model

**Race**: surname, language preference, geography, country of origin, etc.

Income: age, occupation, home ownership, and median income for the local area Optimize to resemble US Census norms at the highest accuracy rate possible

Balancing happens at a state level for most variables



### Census-Acxiom Race Count Comparisons

20%

10%

0%

0%

20%

40%

Census % of County Population

60%

80%

100%

- Acxiom and Census results are similar when comparing counties by the racial makeups
- Acxiom slightly overestimates Hispanic/Latino, African-American, and Asian populations compared to the Census, while underestimating White population
- Acxiom data is at the DEC an DEP account level, which could explain the slight disparities
  - This count only includes one adult per household
  - This would not include households not served by the Companies





Hispanic/Latino were consolidated in the Census and Acxiom

Census % of County Population

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### Census-Acxiom FPL Comparisons

<\$15,000 Census-Acxiom Comparison



- Acxiom and Census results are similar when comparing counties by the income levels
- Acxiom slightly overestimates lower incomes compared to the Census, while underestimating higher incomes



Includes Income & number of people in household



15%

**Census % of Population** 

20%

25%

30%

35%

30%

25%

20%

15%

10%

5%

0%

0%

5%

Population

Acxiom % of





Overview of Data Analysis Conducted



- The Federal Poverty Level ("FPL") is a measure of income per household size
- Relationship of Household Income to FPL is a common way to classify by income
- Shortfalls of using this metric only:
  - Indicator lags up to a year
  - Does not capture recent changes to status (e.g., job loss, family catastrophe, etc.)
  - Does not account for those with high access to economic resources (i.e., wealthy with low or no reportable income)

#### 150% of Federal Poverty Level

Household Size	Maximum Countable Annual Income
1	\$19,320
2	\$26,130
3	\$32,940
4	\$39,750
5	\$46,560
6	\$53,370
7	\$60,180
8	\$66,990

2021 FPL Guidelines

Poverty Guidelines, 48 Contiguous States (all states except AK and HI) (hhs.gov) OFFICIAL



### Assessing Customer Demographics: By Arrears





# Assessing Customer Demographics: Income Level + Account Status



- **Requires 3rd party** verification for program eligibility use
- Not a good indicator of access to economic resources

Does not reflect level of high energy burden

Does not alone capture low-income population

Metric Income (FPL) good metric Analyzes customers struggling to keep the Payment lights on Status ✓ Readily accessible, (Arrears) high-quality data

**Industry Standard Despite drawbacks** is believed to be a

**APPROACH**: Combining Income + Payment Status

- Good data: accessible, higher-quality
  - **Good for targeting:** identifies those struggling with energy affordability; identifies those with high energy burdens

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis

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### Analysis Approach

# i Apr 25 2022

**Third Party Data** 

- Demographics (income range, number of people in household, etc.)
- Housing data (housing type, square footage, owner/renter, etc.)
- The Companies choice of demographic data, updated quarterly
- Uses aggregated public data on individuals or zip code averages
- Directionally valid, not to be used for eligibility
- LIEAP/CIP data quality believe to be excellent\*

\*LIEAP/CIP data is for information received in 2021, after the study time period DATASET: North Carolina (DEC & DEP) Pre-COVID data (3/2019-2/2020): 2.37 million residential accounts Customers who were active for the full time period



#### **Company Billing Data**

- Billing and charges data (charges, past due amounts, disconnects)
- Customer Data (location, heating type, age, etc.)
- High quality, updated monthly, unique to the Companies data source

By considering income and arrearage status the Companies can better identify customers who may truly be struggling to afford their energy bills



# Trends in Arrears





#### ■ LIEAP/CIP ■ <150% ■ 150% to 200% ■ >200%

\*Numbers are mutually exclusive

#### Months Spent with Past Due Amount 2x Average Bill

■ LIEAP/CIP ■ <150% ■ 150% to 200% ■ >200%



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### **EXPECTATIONS (HYPOTHESIS):**

- LIEAP/CIP recipients are more likely to struggle to stay current on their bill must have low financial reserves or be in an energy crisis in addition to being low-income
- Not all struggling/vulnerable/low-income customers will struggle with arrears (as some simply prioritize electricity bill over other expenses and others receive assistance)
- Some customers above 200% FPL struggle to pay their bill
- Some customers will miss payments for non-financial reasons

# Evaluated metrics to arrive at a definition of customers struggling with arrears:

- High % of customers below 200% FPL
- High % of LIEAP/CIP recipients
- Low % of Customers above 200% FPL
- Reasonable total % of the population

2 Months spent at 2x average bill overdue OR	Arrears Segmentation for Analytics	Customers LIEAP/CIP	Customers <150% FPL	150-200% FPL	Customers >200% FPL	Custom Populati
6 Months spent at 1x average bill 58% 22% 19% 13% 1 overdue	2 Months spent at 2x average bill overdue OR 6 Months spent at 1x average bill overdue	58%	22%	19%	13%	16%

% of Customer that meet Arrears Definition

Definition not used to define affordability or eligibility for different programs

# ENERGY. Drawing the Line for Defining which Customers are Struggling with Arrea



### Home Sub-Categories

- Multi-Family Dwelling Condo, Apartments, Duplex, Triplex, Quadplex, etc.
- Mobile Home
- Single Family Dwelling
- Unknown

### DNP Notifications

- No Delinquency Notice (DLQ) no delinquency notifications issued
- 10-Day Notice notified on bill or at least 10 days before scheduled disconnection
- 24-Hour Notice at least 24 hours prior to scheduled disconnection
- DNP customer was disconnected



# Analysis of NC Customers



### Segmenting by Income and Arrears in North Carolina



- Some customers did not have income information in the third-party data
- No major differences between DEC and DEP customers





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



**Total Numbers** 

Non-DNP/DLQ

**10-Day Notice** 

24-Hour Notice

8,714

22,109

DNP

23,876

72,144

OFFICIAL	Does Not Meet Arrears Definition	Meets Arrears Definition	>200% FPL	150%-200% FPL	<150% FPL	_IEAP/CIP
	1,716,146	49,069	1,277,639	179,776	241,982	17,055
2022	373,678	346,138	439,317	91,656	143,355	36,540
r 25	150,676	316,454	272,154	60,834	98,741	31,889
2	22.076			44.040		0 = 4.4

51,817

Percentage of Customers in that Segment Received a DNP Notification (i.e., Percentage of <150% FPL customers that received a 10-Day Notice)

11,940

	LIEAP/CIP	<150% FPL	150%-200% FPL	>200% FPL	Meets Arrears Definition	Does Not Meet Arrears Definition
Non-DNP/DLQ	31.8%	62.8%	66.2%	74.4%	12.5%	84.4%
10-Day Notice	68.2%	37.2%	33.8%	25.6%	88.1%	18.4%
24-Hour Notice	59.5%	25.6%	22.4%	15.9%	80.6%	7.4%
DNP	16.3%	5.7%	4.4%	3.0%	18.4%	1.2%

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis



# Average Electricity Burden Income and Arrearage Definition



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

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

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis



**Total Numbers** 

**Electric Heat** 

Other Primary Fuel Sources

LIEAP/CIP	<150%	150%-200%	>200%	Meets Arrears Definition	Does Not Meet Arrears Definition	OFFI
31,304	137,087	103,872	606,039	147,315	731,760	8
19,036	160,977	115,362	786,280	152,792	931,129	r 25 20
						4

Percentage of Customers in each Segment								
	LIEAP/CIP	<150%	150%-200%	>200%	Meets Arrears Definition	Does Not Meet Arrears Definition		
Electric Heat	1.3%	5.5%	4.2%	24.4%	5.9%	29.4%		
Other Primary								
Fuel Sources	0.8%	6.5%	4.6%	31.6%	6.1%	37.5%		

# Charge-Offs



- Charge-off is for customers who closed their account but still owed money and ended up in collection
- This population is on customers who closed their account during this time period, while the rest of the analysis is based on a
  population that was active the entire time period
- Charge-off customers were all closed by March 1, 2020, and the LIEAP/CIP list is from 2021



# Data Shows Limited Impact of the Pandemic on Key Metrics

- Usage did not meaningfully change for residential customers
  - Affected by weather in addition to changes in customers' consumption habits
  - Consistent with Load Research data and similar to other Southeast utilities
- Past due amounts (i.e., arrears) grew significantly for LIEAP/CIP customers and slightly for other customers.
  - The disconnection moratorium likely affected payment behaviors for some customers







Pre-Covid Covid

The COVID period was from 3/2020-2/2021, and includes customers that were active the full 12 months



# Statistical Analysis



### Numerical Attributes in the Model

- Customer Home Value (\$)
- Energy Burden
- Summer Load Impact
  - Calculated by subtracting the highest summer monthly load by the average monthly load
  - Represents additional load from summer conditions
- Winter Load Impact
  - Calculated by subtracting the highest winter monthly load by the average monthly load
  - Represents additional load from winter conditions
- Interacted with heat source (electric or other primary fuel source)
- Age of Account Holder
- Age of Home

### **Categorical Attributes in the Model**

- Race: African-American, Asian, Hispanic, or White
- Household Size: Breakdown by number of people in the household, and if there are children
- Population Density: A measure of people per square mile
- Heat Source: Electric or other primary fuel source
- Housing Status & Type: Owner or renter, single family or multifamily, further broken down by condo, apartment, mobile home, etc.
  - Education: High school, college, or graduate school

Variables are transformed to better capture non-linear relationships •Categorical attributes were included in the model as 1/0 indicator variables

•Some numerical attributes were log-transformed •Other numerical attributes were treated as piecewise-linear, such that the effect of the attribute on arrears is more dynamic as that attribute changes

•Some attributes were interacted with other attributes •For example, other primary fuel source customers winter load was treated as a separate variable from electric customer winter load R

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# Understanding Model Results



- In order to enhance the descriptive analytics and better understand what is driving customers to incur an arrears or experience disconnected for non-pay, the collaborative agreed on creating statistical models
- Three logistic regression models were created to understand low-income customers (< 200% FPL) who meet the arrears definition, receive a 24-hour notice, and ultimately become disconnected for non-pay
- Comparing model effect sizes shows which attributes were more impactful (i.e., age vs race), as well as the likelihood of each segment within the attribute (i.e., 25-year-olds vs 55-year-olds)
  - This allows an understanding of the impact of each individual variable, holding all other variables constant that are in the model
  - Some key data points, like wealth, were not available and may show up in other variables that are correlated
- The "Wald Test" shows which categories have a statistically significant impact on a customer's ability to pay their bills
  - For categorical attributes like race, a p-value less than 0.05 indicates that the category's effect is significantly different from the baseline category's effect
  - For numerical attributes like age, a p-value less than 0.05 indicates that the attribute's effect is significantly different from 0



\*~10% of the population received a 24-hour notice without meeting the arrears definition, but were still included in the first model as "meeting arrears definition"

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# Statistical Modeling: Arrears Definition<sup>1</sup>





The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis

# Statistical Modeling: 24-Hour DNP Notice



# Statistical Modeling: DNP

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis



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# Analysis by Housing Type, Housing Status, and Heating Source

Housing Type: Single Family or Multi-Family Housing Status: Owner or Renter Heating Source: Electric or Other Primary Fuel Source

#### DUKE ENERGY. Average Monthly Usage by Income for Housing Type, Housing Status, and Heating Source



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

### Average Monthly Usage per Square Foot by Income for Housing Type, Housing Status and Heating Source



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

DUKE ENERGY

# ENERGY. Average Monthly Usage by Arrearage Status for Housing Type, Housing Status, and Heating Source



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

#### DUKE ENERGY. Average Monthly Usage per Square Foot by Arrearage Status for Housing Type, Housing Status, and Heating Source



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

### Percentage of Customers in Arrears Definition for Housing Type, Housing Status, and Heating Source



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

DUKE

## Percentage of DNP by Income for Housing Type, Housing Status, and Heating Source



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

#### DUKE ENERGY. Percentage of DNP Notifications by Notification Type for Housing Type, Housing Status, and Heating Source



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


### Average Electricity Burden by Heating Source for Housing Type and Housing Status



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



Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Primary Fuel Source
LIEAP/CIP	53,595	35,003	16,675	21,426	32,096	31,304	19,036
<150% FPL	385,339	288,707	73,114	226,014	159,325	137,088	160,977
150%-200% FPL	271,432	224,095	32,028	197,983	73,449	103,872	115,362
>200%	1,716,956	1,461,124	203,504	1,356,308	360,648	606,039	786,280
Total	2,427,322	2,008,929	325,321	1,801,731	625,518	878,303	1,081,655

Percentage of Cust	omers in each	Segment					
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Primary Fuel Source
LIEAP/CIP	2%	1.4%	0.7%	0.9%	1.3%	1.3%	0.8%
<150% FPL	16%	11.9%	3.0%	9.3%	6.6%	5.6%	6.6%
150%-200% FPL	11%	9.2%	1.3%	8.2%	3.0%	4.3%	4.8%
>200%	71%	60.2%	8.4%	55.9%	14.9%	25.0%	32.4%



lotal Numbers	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Primary Fuel Source
Meets Arrears Definition	395,204	299,654	81,170	221,791	171,042	147,315	152,792
Does not Meet Arrears Definition	2,089,823	1,709,275	244,151	1,579,940	454,476	731,760	931,129
Percentage of C	ustomers in each S	Segment					Othor Primary
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Fuel Source
Meets Arrears Definition	15.9%	12.1%	3.3%	8.9%	6.9%	5.9%	6.1%
Does not Meet Arrears							
Definition	84.1%	68.8%	9.8%	63.6%	18.3%	29.4%	37.5%



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			ŏ

Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Primary Fuel Source
LIEAP/CIP	8,714	5,925	2,523	2,961	5,745	4,654	3,450
<150% FPL	22,109	13,844	7,211	7,319	14,790	6,191	6,160
150%-200% FPL	11,940	8,539	2,781	5,806	6,134	3,562	3,695
>200%	51,817	36,882	13,383	27,249	24,568	15,610	16,872
Total	96,020	65,190	25,898	43,335	51,237	30,017	30,177
Percentage of Cust	omers in that S	Segment DNP (i.e	., Percentage of Si	ngle Family cust	tomers that wer	e DNP)	
Ŭ	Total	Single Family	Multi Family	Owpor	Pontor	Floctric Hoot	Other Primary
	Customers	Single Family	Multi-Family	Owner	Renter		Fuel Source
LIEAP/CIP	16.3%	16.9%	15.1%	13.8%	17.9%	14.9%	18.1%
<150% FPL	5.7%	4.8%	9.9%	3.2%	9.3%	4.5%	3.8%
150%-200% FPL	4.4%	3.8%	8.7%	2.9%	8.4%	3.4%	3.2%
>200%	3.0%	2.5%	6.6%	2.0%	6.8%	2.6%	2.1%



## DNP Notifications

Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Primary Fuel Source
Non-DNP/DLQ	1,765,215	1,460,374	185,828	1,372,290	344,113	625,729	795,541
10-Day Notice	719,816	548,554	139,493	429,439	281,405	253,345	288,379
24-Hour Notice	467,130	350,844	98,410	261,197	202,407	165,754	181,956
DNP	96,020	65,190	25,898	43,335	51,237	30,114	30,183

Percentage of Customers in that Segment Received a DNP Notification (i.e., Percentage of Single Family customers that received a 10-Day Notice)

	Total						Other Primary
	Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Fuel Source
Non-DNP/DLQ	72.7%	72.7%	57.1%	76.2%	55.0%	71.2%	73.5%
10-Day Notice	29.7%	27.3%	42.9%	23.8%	45.0%	28.8%	26.7%
24-Hour Notice	19.2%	17.5%	30.3%	14.5%	32.4%	18.9%	16.8%
DNP	3.9%	3.2%	8.0%	2.4%	8.2%	3.4%	2.8%

4



# Electricity Burden

Total Numbers	5								
	Total Customers	Single Family	Multi-Family	Owner	Renter	LIEAP/CIP	Non-LIEAP/CIP	Meets Arrears Definition	Arrears Definition
Electric Heat	879,075	700,612	143,828	650,508	227,794	31,304	847,771	147,315	731,760
Other Primary Fuel Sources	1,083,921	996,522	45,025	903,247	178,406	19,036	1,064,885	152,792	931,129

Percentage of	Customers i	n each Segmer	nt						
	Total Customers	Single Family	Multi-Family	Owner	Renter	LIEAP/CIP	Non- LIEAP/CIP	Meets Arrears Definition	Does Not Meet Arrears Definition
Electric Heat	35.4%	28.2%	5.8%	26.2%	9.2%	1.3%	34.1%	5.9%	29.4%
Other Primary Fuel Sources	43.6%	40.1%	1.8%	36.3%	7.2%	0.8%	42.9%	6.1%	37.5%



## Analysis by Housing Location and Housing Value

Housing Location: City & Surrounding Area, Smaller Suburbs & Towns, Rural Housing Value: <\$100,000, \$100,000-\$199,999, \$200,000-\$299,999, \$300,000-\$499,999, \$500,000+



### Average Monthly Usage by Income for Location and Housing Value



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



### Average Monthly Usage per Square Foot by Income for Location and Housing Value



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



### Average Monthly Usage by Arrearage Status for Location and Housing Value



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

### Average Monthly Usage per Square Foot by Arrearage Status for Location and Housing Value



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

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#### DUKE ENERGY. Percentage of Customers in Arrears Definition for Location and Housing Value



The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis



### Percentage of DNP by Income for Location and Housing Value



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

# Puke Percentage of DNP Notifications by Notification Type for Location and Housing Value



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



### Average Electricity Burden by Heating Source for Location and Housing Value



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



Total Numbers								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
LIEAP/CIP	14,018	25,207	14,297	4,535	6,046	1,627	347	-
<150% FPL	87,157	166,037	132,145	51,337	80,182	27,323	12,596	3,458
150%-200% FPL	51,749	125,087	94,596	30,121	75,370	32,284	16,360	4,019
>200%	433,504	895,257	388,195	81,870	383,703	322,724	280,723	120,811
Total	586,428	1,211,588	629,233	167,863	545,301	383,958	310,026	-
Percentage of Cust	omers in each	Segment						
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	~\$100.000	\$100,000- \$100.000	\$200,000- \$299 999	\$300,000- \$499 999	\$500,000+
			Кагат	<\$100,000	\$133,333	7233,333	, , , , , , , , , , , , , , , , , , ,	
LIEAP/CIP	0.6%	1.0%	0.6%	0.2%	0.2%	0.1%	0.0%	-
<150% FPL	0.6% 3.6%	1.0% 6.8%	0.6% 5.4%	0.2%	0.2% 3.3%	0.1% 1.1%	0.0%	- 0.1%
<150% FPL 150%-200% FPL	0.6% 3.6% 2.1%	1.0% 6.8% 5.2%	0.6% 5.4% 3.9%	0.2% 2.1% 1.2%	0.2% 3.3% 3.1%	0.1% 1.1% 1.3%	0.0% 0.5% 0.7%	- 0.1% 0.2%



## Arrearage Status

Total Numbers	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
Meets Arrears Definition	103,427	191,924	97,482	34,301	85,574	37,974	15,555	2,995
Does not Meet Arrears Definition	483,001	1,019,664	531,751	133,562	459,727	345,984	294,471	125,343
Percentage of Cu	<b>stomers in ea</b> City & Surrounding Areas	<b>ch Segment</b> Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
Meets Arrears Definition	4.2%	7.7%	3.9%	3.9%	3.4%	1.5%	0.6%	0.1%
Does not Meet Arrears Definition	19.4%	41.0%	21.4%	21.4%	18.5%	13.9%	11.8%	5.0%





Total Numbers		Creallan						
	Surrounding Areas	Smaller g Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
LIEAP/CIP	2,648	4,105	1,953	656	984	288	-	-
<150% FPL	7,312	9,625	5,172	2,147	2,497	678	168	- 6
150%-200% FPL	3,290	5,448	3,202	1,216	2,206	668	234	-
>200%	16,721	25,496	9,600	3,049	10,439	5,827	2565	603
Total	29,971	44,674	19,927	7,068	16,126	7,461	-	659
Percentage of Cus	stomers in th	at Segment D	ONP (i.e., Perce	ntage of <\$100	,000 customers	that were DNF	<b>)</b> )	
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
LIEAP/CIP	18.9%	16.3%	13.7%	14.5%	16.3%	17.7%	17.6%	10.0%
<150% FPL	8.4%	5.8%	3.9%	4.2%	3.1%	2.5%	1.3%	0.9%
150%-200% FPL	6.4%	4 40/	2 /10/	4.0%	2.00/	2 1%	1 4%	0.5%
		4.4%	3.470	4.070	2.9%	2.1/0	1.470	0.570



## DNP Notifications

otal Numbers								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
Non-DNP/DLQ	399,552	860,367	456,484	109,457	382,864	302,042	269,018	116,783
10-Day Notice	186,876	351,220	172,748	58,405	162,437	81,916	41,008	11,555
24-Hour Notice	126,384	227,356	109,864	39,066	101,501	46,705	19,807	4,580
ONP	29,971	44,674	19,927	7,068	16,126	7,461	-	659

Percentage of Customers in that Segment DNP Received a DNP Notification (i.e., Percentage of <\$100,000 customers that received a 10-Day Notice)

	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
Non-DNP/DLQ	68.1%	71.0%	72.5%	65.2%	70.2%	78.7%	86.8%	91.0%
10-Day Notice	31.9%	29.0%	27.5%	34.8%	29.8%	21.3%	13.2%	9.0%
24-Hour Notice	21.6%	18.8%	17.5%	23.3%	18.6%	12.2%	6.4%	3.6%
DNP	5.1%	3.7%	3.2%	4.2%	3.0%	1.9%	-	0.5%

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Total Numbers								
	City & Surrounding Areas	Smaller g Suburbs & Towns	Rural	<\$100,000	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$499,999	\$500,000+
Electric Heat	157,915	437,836	282,551	58,703	229,745	138,982	86,332	24,943
Other Primary Fuel Sources	270,100	550,939	260,614	88,038	246,138	192,530	182,551	85,801

Percentage of Cu	Percentage of Customers in each Segment												
	City &	Smaller											
	Surroundin	g Suburbs			\$100,000-	\$200,000-	\$300,000-						
	Areas	& Towns	Rural	<\$100,000	\$199,999	\$299,999	\$499,999	\$500,000+					
Electric Heat	6.4%	17.6%	11.4%	2.4%	9.2%	5.6%	3.5%	1.0%					
Other Primary													
Fuel Sources	10.9%	22.2%	10.5%	3.5%	9.9%	7.7%	7.3%	3.5%					



### Analysis by Race and Age of the Account Holder

Race: African American, Asian, Hispanic, White Age of Account Holder: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+



### Average Monthly Usage by Income for Race and Age of the Account Holder



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

### Average Monthly Usage per Square Foot by Income for Race and Age of the Account Holder



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

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## Average Monthly Usage by Arrearage Status for Race and Age of the Account Holder



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

### Average Monthly Usage per Square Foot by Arrearage Status for Race and Age of the Account Holder



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

# Puke Percentage of Customers in Arrears Definition for Race and Age of the Account Holder



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

## Percentage of DNP by Income for Race and Age of the Account Holder



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

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### ENERGY. Percentage of DNP Notifications by Notification Type for Race and Age of the Account Holder



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

#### DUKE ENERGY. Average Electricity Burden by Heating Source for Race and Age of the Account Holder



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



Total Numbe	Total Number of Customers in each Segment													
	African	<b>A</b>			18-24	25-34	35-44	45-54	55-64	65-74				
	American	Asian	Hispanic	white	years	years	years	years	years	years	75+ years			
LIEAP/CIP	18,509	306	2,348	26,355	1,617	8,778	10,489	9,454	10,740	8,051	4,391			
<150% FPL	59,739	5,272	26,773	239,271	14,945	53,015	62,326	63,061	59,109	53,766	78,031			
150%-											6			
200% FPL	31,573	3,872	14,034	184,245	6,513	30,506	45,017	51,861	50,425	42,012	44,647			
>200%	167,309	45,006	76,216	1,316,849	29,571	198,463	275,619	333,796	364,996	309,137	203,998			
Total	277,130	54,456	119,371	1,766,720	52,646	290,762	393,451	458,172	485,270	412,966	331,067			

Percentage of Customers in each Segment													
	African				18-24	25-34	35-44	45-54	55-64	65-74			
	American	Asian	Hispanic	White	years	years	years	years	years	years	75+ years		
LIEAP/CIP	0.8%	0.0%	0.1%	1.1%	0.1%	0.4%	0.4%	0.4%	0.4%	0.3%	0.2%		
<150% FPL	2.5%	0.2%	1.1%	9.9%	0.6%	2.2%	2.6%	2.6%	2.4%	2.2%	3.2%		
150%-													
200% FPL	1.3%	0.2%	0.6%	7.6%	0.3%	1.3%	1.9%	2.1%	2.1%	1.7%	1.8%		
>200%	6.9%	1.9%	3.1%	54.3%	1.2%	8.2%	11.4%	13.8%	15.0%	12.7%	8.4%		

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## Arrearage Status

Total Numbe	e <b>rs</b> African American	Asian	Hispanic	White	18-24 vears	25-34 vears	35-44 vears	45-54 vears	55-64 vears	65-74 vears	75+ vears
Meets Arrears Definition	93,473	2,819	21,424	230,942	12,274	64,618	90,117	95,648	73,717	36,793	19,404
Does not Meet Arrears											2C 3C
Definition	183,657	51,637	97,947	1,535,778	40,372	226,144	303,334	362,525	411,553	376,175	311,664
Percentage o	of Customer	s in each	Segment								
Percentage o	o <b>f Customer</b> African American	<b>s in each</b> Asian	<b>Segment</b> Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
Percentage of Meets Arrears Definition	o <b>f Customer</b> African American 3.8%	s in each Asian 0.1%	Segment Hispanic 0.9%	White 9.3%	18-24 years 0.5%	25-34 years 2.6%	35-44 years 3.6%	45-54 years 3.8%	55-64 years 3.0%	65-74 years 1.5%	75+ years 0.8%
Percentage of Meets Arrears Definition Does not Meet Arrears	of Customer African American 3.8%	s in each Asian 0.1%	Segment Hispanic 0.9%	White 9.3%	18-24 years 0.5%	25-34 years 2.6%	35-44 years 3.6%	45-54 years 3.8%	55-64 years 3.0%	65-74 years 1.5%	75+ years 0.8%

Total Numbe	ers										9
	African American	Asian	Hispanic	White	18-24 years old	25-34 years old	35-44 years old	45-54 years old	55-64 years old	65-74 years old	75+ years old
LIEAP/CIP	3,325	-	420	3,738	425	2,297	2,147	1,604	1,314	628	291
<150% FPL	5,236	147	1,682	9,302	2042	5,731	4,968	3,966	2,542	1,380	1,462
150%- 200% FPL	2,283	-	717	5687	812	2,609	2,846	2,553	1,617	841	654
>200%	11,403	559	3,289	28,401	2,744	11,002	12,037	11,582	8,113	4,099	2,225
Total	22,247	817	6,108	47,128	6,023	21,639	21,998	19,705	13,586	6,948	4,632
Percentage c	of Customers	s in that S	Segment DN	P (i.e., Per	centage of 1	18-24 years	old custom	ers that we	re DNP)		
	African American	Asian	Hispanic	White	18-24 years old	25-34 years old	35-44 years old	45-54 years old	55-64 years old	65-74 years old	75+ years old
LIEAP/CIP	18.0%	-	17.9%	14.2%	26.3%	26.2%	20.5%	17.0%	12.2%	7.8%	6.6%
<150% FPL	8.8%	2.8%	6.3%	3.9%	13.7%	10.8%	8.0%	6.3%	4.3%	2.6%	1.9%
150%- 200% FPL	7.2%	_	5.1%	3.1%	12.5%	8.6%	6.3%	4.9%	3.2%	2.0%	1.5%
>200%	6.8%	1.2%	4.3%	2.2%	9.3%	5.5%	4.4%	3.5%	2.2%	1.3%	1.1%

DNP

The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis



## DNP Notifications

Total Numbers	<b>s</b> African American	Asian	Hispanic	White	18-24 years old	25-34 years old	35-44 years old	45-54 years old	55-64 years old	65-74 years old	75+ years old
Non- DNP/DLQ	142,059	46,741	73,388	1,331,163	29,284	177,862	239,375	290,373	347,921	338,994	29,0276
10-Day Notice	135,071	7,715	45,983	435,555	23,362	112,900	154,076	167,800	137,349	73,974	40,790
24-Hour Notice	102,118	4,050	28,620	269,947	16,304	78,110	106,486	112,487	86,004	42,231	21,653
DNP	22,247	817	6108	47,128	6,023	21,639	21,998	19,705	13,586	6,948	4,632
Percentage of Notice)	<b>Customers</b> African American	in that Se	egment Rec Hispanic	ceived a DNF White	<b>Notificatio</b> 18-24 years old	n (i.e., Perc 25-34 years old	entage of 18 35-44 years old	<b>3-24 years o</b> 45-54 years old	ld custome 55-64 years old	r <b>s received a</b> 65-74 years old	1 <b>0-Day</b> 75+ years old
Percentage of Notice) Non- DNP/DLQ	Customers African American 51.3%	Asian	egment Red Hispanic 61.5%	white 75.3%	Notificatio 18-24 years old 55.6%	n (i.e., Perc 25-34 years old 61.2%	entage of 18 35-44 years old 60.8%	<b>3-24 years o</b> 45-54 years old 63.4%	ld custome 55-64 years old 71.7%	rs received a 65-74 years old 82.1%	<b>10-Day</b> 75+ years old 87.7%
Percentage of Notice) Non- DNP/DLQ 10-Day Notice	Customers African American 51.3% 48.7%	Asian 85.8%	Hispanic 61.5% 38.5%	ceived a DNP White 75.3% 24.7%	<b>Notificatio</b> 18-24 years old 55.6% 44.4%	n (i.e., Perco 25-34 years old 61.2% 38.8%	entage of 18 35-44 years old 60.8% 39.2%	<b>3-24 years o</b> 45-54 years old 63.4% 36.6%	Id customer 55-64 years old 71.7% 28.3%	rs received a 65-74 years old 82.1% 17.9%	10-Day 75+ years old 87.7% 12.3%
Percentage of Notice) Non- DNP/DLQ 10-Day Notice 24-Hour Notice	Customers African American 51.3% 48.7% 36.8%	Asian 85.8% 14.2% 7.4%	egment Red Hispanic 61.5% 38.5% 24.0%	ceived a DNP White 75.3% 24.7% 15.3%	P Notificatio 18-24 years old 55.6% 44.4% 31.0%	n (i.e., Perco 25-34 years old 61.2% 38.8% 26.9%	entage of 18 35-44 years old 60.8% 39.2% 27.1%	<b>3-24 years o</b> 45-54 years old 63.4% 36.6% 24.6%	Id customer 55-64 years old 71.7% 28.3% 17.7%	rs received a 65-74 years old 82.1% 17.9% 10.2%	<b>10-Day</b> 75+ years old 87.7% 12.3%

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## Electricity Burden

Total Num	<b>bers</b> African				18-24	25-34	35-44	45-54	55-64	65-74	
	American	Asian	Hispanic	White	years	years	years	years	years	years	75+ years
Electric Heat	98,444	12,677	46,895	655,327	12,964	96,126	141,467	170,500	185,412	159,655	111,768
Other Primary Fuel											
Sources	116,682	32,401	52,363	823,332	7,998	84,361	165,190	215,166	234,875	202,810	169,324
Percentag	e of Custome	rs in each	Segment								
	African				18-24	25-34	35-44	45-54	55-64	65-74	
	American	Asian	Hispanic	White	years	years	years	years	years	years	75+ years
Electric Heat	4.0%	0.5%	1 9%	26.4%	0.5%	3 0%	5 7%	6.9%	7 5%	6.4%	1 5%
Other Primary Fuel	4.070	0.570	1.570	20.470	0.370	3.370	5.770	0.576	7.370	0.470	4.370
Sources	4.7%	1.3%	2.1%	33.1%	0.3%	3.4%	6.6%	8.7%	9.5%	8.2%	6.8%



### Analysis by Number of People in the Household

Number of People in the Household: 1, 2, 3, 4, 5, 6, 7+





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

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#### Average Monthly Usage per Square Foot by Income for Number of People in the Household



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

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## Average Monthly Usage by Arrearage Status for Number of People in the Household



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





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

#### Percentage of Customers in Arrears Definition for Number of People in DUKE ENERGY. the Household



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

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

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## Percentage of DNP by Income for Number of People in the Household



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

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## Percentage of DNP Notifications by Notification Type for Number of People in the Household



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

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#### DUKE ENERGY. Average Electricity Burden by Heating Source for Number of People in the Household



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



Total Numbers							
	1	2	3	4	5	6	7+
LIEAP/CIP	21,430	16,234	8,759	3,955	1,805	865	474
<150% FPL	81,114	106,919	91,606	43,273	30,440	20,783	11,204
150%-200% FPL	37,590	85,572	55,531	55,592	20,083	9,074	7,990
>200%	475,987	506,518	390,254	193,028	95,313	38,548	17,308
Total	616,121	715,243	546,150	295,848	147,641	69,270	36,976
Percentage of Cu	ustomers in each	Segment					
	1	2	3	4	5	6	7+
LIEAP/CIP	0.9%	0.7%	0.4%	0.2%	0.1%	0.0%	0.0%
<150% FPL	3.3%	4.4%	3.8%	1.8%	1.3%	0.9%	0.5%
150%-200% FPL	1.5%	3.5%	2.3%	2.3%	0.8%	0.4%	0.3%
>200%	19.6%	20.9%	16.1%	8.0%	3.9%	1.6%	0.7%



## Arrearage Status

Total Numbers							
	1	2	3	4	5	6	7+
Meets Arrears Definition	122,457	111,342	78,781	42,469	21,501	10,363	5,920
Does not Meet Arrears Definition	493,664	603,901	467,369	253,379	126,140	58,907	31,056

Percentage of Customers in each Segment									
	1	2	3	4	5	6	7+		
Meets Arrears Definition	4.9%	4.5%	3.2%	1.7%	0.9%	0.4%	0.2%		
Does not Meet Arrears Definition	19.9%	24.3%	18.8%	10.2%	5.1%	2.4%	1.2%		



	1	2	3	4	5	6	7+
LIEAP/CIP	3,637	2,520	1,375	645	317	142	-
<150% FPL	6,578	6,616	3,993	2,104	1,420	912	486
150%-200% FPL	25,88	4,379	1,967	1,844	658	291	213
>200%	23,029	14,736	8,131	3,494	1,577	592	258
Total	358,32	28,251	15,466	8,087	3,972	1,937	-

Percentage of Customers in that Segment DNP (i.e., Percentage of 2 people household customers that were DNP)

	1	2	3	4	5	6	7+
LIEAP/CIP	17.0%	15.5%	15.7%	16.3%	17.6%	16.4%	-
<150% FPL	8.1%	6.2%	4.4%	4.9%	4.7%	4.4%	4.3%
150%-200%							
FPL	6.9%	5.1%	3.5%	3.3%	3.3%	3.2%	2.7%
>200%	4.8%	2.9%	2.1%	1.8%	1.7%	1.5%	1.5%



otal Number of Customers in each Segment									
	1	2	3	4	5	6	7+		
Non-DNP/DLQ	399,035	512,264	402,466	217,979	108,189	50,228	26,242		
10-Day Notice	217,086	202,978	143,684	77,869	39,451	19,042	10,734		
24-Hour									
Notice	147,737	132,337	90,940	49,098	24,785	11,950	6,757		
DNP	35,832	28,251	15,466	8,087	3,972	1,937	-		

Percentage of Customers in that Segment Received a DNP Notification (i.e., Percentage of 2 people household customers that received a 10-Day Notice)

	1	2	3	4	5	6	7+
Non-DNP/DLQ	64.8%	71.6%	73.7%	73.7%	73.3%	72.5%	71.0%
10-Day Notice	35.2%	28.4%	26.3%	26.3%	26.7%	27.5%	29.0%
24-Hour							
Notice	24.0%	18.5%	16.7%	16.6%	16.8%	17.3%	18.3%
DNP	5.8%	3.9%	2.8%	2.7%	2.7%	2.8%	-



Total Numbers							
	1	2	3	4	5	6	7+
Electric Heat	222,442	254,231	198,759	109,163	54,727	25,528	13,452
Other Primary Fuel Source	227,146	314,288	265,199	146,943	74,321	34,974	18,782

Percentage of Customers in each Segment										
	1	2	3	4	5	6	7+			
Electric Heat	9.0%	10.2%	8.0%	4.4%	2.2%	1.0%	0.5%			
Other Primary Fuel Source	9.1%	12.6%	10.7%	5.9%	3.0%	1.4%	0.8%			



## Analysis by Home Subcategory – Owner

Home Subcategory: Condo, Mobile Home, Multi-Family Miscellaneous, Single Family Dwelling, Unknown



## Average Monthly Usage by Income for Home Subcategory – Owner



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



#### Average Monthly Usage per Square Foot by Income for Home Subcategory – Owner



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



### Average Monthly Usage by Arrearage Status for Home Subcategory – Owner



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

## DUKE Average Monthly Usage per Square Foot by Arrearage Status for Home Subcategory – Owner



\*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

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#### DUKE ENERGY. Percentage of Customers in Arrears Definition for Home Subcategory -Owner b



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

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## Percentage of DNP by Income for Home Subcategory – Owner



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



### Percentage of DNP Notifications by Notification Type for Home Subcategory – Owner



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

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#### DUKE ENERGY. Average Electricity Burden by Heating Source for Home Subcategory -Owner



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



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Total Numbers				
	MF Dwelling	Mobile Home	SF Dwelling	Unknown
LIEAP/CIP	311	1,495	8,025	11,595
<150% FPL	5,528	12,310	136,063	72,113
150%-200% FPL	5,840	9,063	126,367	56,713
>200%	71,915	28,665	990,264	265,464
Total	83,594	51,533	1,260,719	405,885

Percentage of Customers in each Segment								
	MF Dwelling	Mobile Home	SF Dwelling	Unknown				
LIEAP/CIP	0.0%	0.1%	0.3%	0.5%				
<150% FPL	0.2%	0.5%	5.6%	3.0%				
150%-200% FPL	0.2%	0.4%	5.2%	2.3%				
>200%	3.0%	1.2%	40.8%	10.9%				



Fotal Numbers				
	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Meets Arrears Definition	76,625	9,653	131,912	73,257
Does not Meet Arrears Definition	6,969	41,880	1,128,807	332,628

#### Percentage of Customers in each Segment

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Meets Arrears Definition	3.1%	0.4%	5.3%	2.9%
Does not Meet Arrears				
Definition	0.3%	1.7%	45.4%	13.4%



#### Total Number of Customers in each Segment

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
LIEAP/CIP	-	181	1,167	1,554
<150% FPL	158	417	3,653	3,091
150%-200% FPL	126	273	3,027	2,380
>200%	1,252	876	16,086	9,035
Total	_	1,747	23,933	16,060

#### Percentage of Customers in that Segment DNP (i.e., Percentage of mobile homes that were DNP)

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
LIEAP/CIP	-	12.1%	14.5%	13.4%
<150% FPL	3%	3.4%	2.7%	4.3%
150%-200% FPL	2%	3.0%	2.4%	4.2%
>200%	2%	3.1%	1.6%	3.4%



Total Number of Customers in each Segment				
	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Non-DNP/DLQ	67,475	35,366	988,085	281,364
10-Day Notice	16,119	16,166	272,634	124,520
24-Hour Notice	9,098	10,578	158,271	83,250
DNP	_	1,747	23,933	16,060

Percentage of Customers in that Segment DNP Received a DNP Notification (i.e., Percentage of mobile homes that received 10-Day Notice)

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Non-DNP/DLQ	80.7%	68.6%	78.4%	69.3%
10-Day Notice	19.3%	31.4%	21.6%	30.7%
24-Hour Notice	10.9%	20.5%	12.6%	20.5%
DNP	_	3.4%	1.9%	4.0%



Total Numbers				
	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Electric Heat	29,631	34,432	429,189	157,256
Other Primary	22 772			470.050
Fuel Source	38,752	12,765	681,680	170,050

#### Percentage of Customers in each Segment

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Electric Heat	1.2%	1.4%	17.3%	6.3%
Other Primary				
Fuel Source	1.6%	0.5%	27.4%	6.8%



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## Analysis by Home Subcategory – Renter

Home Subcategory: Condo, Mobile Home, Multi-Family Miscellaneous, Single Family Dwelling, Unknown



## Average Monthly Usage by Income for Home Subcategory – Renter



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



#### Average Monthly Usage per Square Foot by Income for Home Subcategory – Renter



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



### Average Monthly Usage by Arrearage Status for Home Subcategory – Renter



\*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

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## DUKE Average Monthly Usage per Square Foot by Arrearage Status for Home Subcategory – Renter



\*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

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# Percentage of Customers in Arrears Definition for Home Subcategory-Rentero



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



#### Percentage of DNP by Income for Home Subcategory – Renter



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



### Percentage of DNP Notifications by Notification Type for Home Subcategory – Renter



#### DUKE ENERGY. Average Electricity Burden by Heating Source for Home Subcategory – Renter



\*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

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Total Numbers					
	MF Dwelling	Mobile Home	SF Dwelling	Unknown	Ö
LIEAP/CIP	231	244	1833	29,788	
<150% FPL	1,165	1,089	11,208	145,863	2
150%-200% FPL	966	852	9103	62,528	25 20
>200%	9,785	2,806	60,355	287,702	Apr.
Total	12,147	4,991	82,499	525,881	

Percentage of Customers in each Segment					
	MF Dwelling	Mobile Home	SF Dwelling	Unknown	
LIEAP/CIP	0.0%	0.0%	0.1%	1.2%	
<150% FPL	0.0%	0.0%	0.5%	6.0%	
150%-200% FPL	0.0%	0.0%	0.4%	2.6%	
>200%	0.4%	0.1%	2.5%	11.9%	


otal Numbers						
	MF Dwelling	Mobile Home	SF Dwelling	Unknown		
Meets Arrears Definition	9,495	1,392	18,623	148,375		
Does not Meet Arrears Definition	2,652	3,599	63,876	377,506		

Percentage of	Customers in each Segment
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	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Meets Arrears Definition	0.4%	0.1%	0.7%	6.0%
Does not Meet Arrears				
Definition	0.1%	0.1%	2.6%	15.2%



#### Total Number of Customers in each Segment

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
LIEAP/CIP	-	-	429	5220
<150% FPL	-	-	888	13,716
150%-200% FPL	-	-	643	5,339
>200%	564	202	3,012	20,790
Total	814	386	4,972	45,065

Percentag	ze of Customers in that S	egment DNP (i.e.	. Percentage	e of mobile homes that were DNP	

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
LIEAP/CIP	-	-	23.4%	17.5%
<150% FPL	-	-	7.9%	9.4%
150%-200% FPL	_	-	7.1%	8.5%
>200%	6.0%	7.2%	5.0%	7.2%



# DNP Notifications

otal Number of Customers in each Segment						
	MF Dwelling	Mobile Home	SF Dwelling	Unknown		
Non-DNP/DLQ	7,410	2,661	49,158	284,884		
10-Day Notice	4,737	2,330	33,341	240,997		
24-Hour Notice	3,268	1,610	22,757	174,772		
DNP	814	386	4,972	45,065		

Percentage of Customers in that Segment DNP Received a DNP Notification (i.e., Percentage of mobile homes that received a 10-Day Notice)

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Non-DNP/DLQ	61.0%	53.3%	59.6%	54.2%
10-Day Notice	39.0%	46.7%	40.4%	45.8%
24-Hour Notice	26.9%	32.3%	27.6%	33.2%
DNP	6.7%	7.7%	6.0%	8.6%



Total Numbers				
	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Electric Heat	3,947	3,048	21,897	198,902
Other Primary Fuel Source	3,301	997	38,673	135,435

#### Percentage of Customers in each Segment

	MF Dwelling	Mobile Home	SF Dwelling	Unknown
Electric Heat	0.2%	0.1%	0.9%	8.0%
Other Primary				
Fuel Source	0.1%	0.0%	1.6%	5.5%



# Analysis of Billing Data



### Median Monthly kWh



- 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

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### Median kWh per sq ft



- 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

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#### Median Monthly New Bills 80



New Bill Amount by Arrears Definition



- Directly correlated with kWh usage
- LIEAP/CIP customers have higher bills in the winter, lower in the summer
- Customers struggling with arrears have new charges that are 16% higher year-round and 23% higher in the winter



#### Median Monthly Past Due Amounts



- LIEAP/CIP customers owe 3 times more in arrears at the end of summer and winter than customers above 200% FPL
- Median summer and winter peaks in arrears are over \$230 and occur at the end of each season for customers who meet the arrears definition



Median Total Monthly Bills





- 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



## Analysis of Interval Data



## Average Weekday Load Shape by Season & Income Segmentation



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# Peak Day Load Shape by Season & Income Segmentation





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### Average Weekday Load Shapes By Season & Arrearage Status



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# Peak Day Load Shapes by Season & Arrearage Status





The data included in this presentation is specific to eligible accounts from March 2019 - February 2020 for purposes of Low-Income Affordability Collaborative analysis

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#### CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC,, Duke Energy Progress, LLC and the Public Staff's Joint NC Low-Income Affordability Collaborative Quarterly Progress Report, in Docket Nos. E-7, Sub 1213, E-7, Sub 1214 and E-7, Sub 1187 and E-2, Sub 1219 and E-2, Sub 1193, has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1<sup>st</sup> Class Postage Prepaid, properly addressed to parties of record.

This the 25<sup>th</sup> day of April, 2022.

NR

Kathleen H. Richard Counsel Duke Energy Corporation P.O. Box 1551/NCRH 20 Raleigh, North Carolina 27602 Tel. 919.546.6776 Kathleen.richard@duke-energy.com