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July 21, 2021

**VIA ELECTRONIC FILING**

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

**RE: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Rate Design Study Quarterly Report  
Docket Nos. E-7, Sub 1214 and E-2, Sub 1219**

Dear Ms. Dunston:

Pursuant to the North Carolina Utilities Commission's March 31, 2021 *Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice* in Docket No. E-7, Sub 1214 and its April 16, 2021 *Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice* in Docket No. E-2, Sub 1219, Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively "Duke Energy") enclose for filing in the above-referenced dockets Duke Energy's first Rate Design Study Quarterly Status Report.

If you have any questions, please do not hesitate to contact me. Thank you for your attention to this matter.

Sincerely,

Jack E. Jirak

Enclosures

cc: Parties of Record

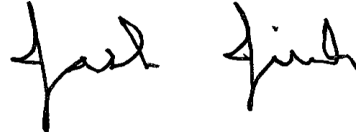
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**CERTIFICATE OF SERVICE**

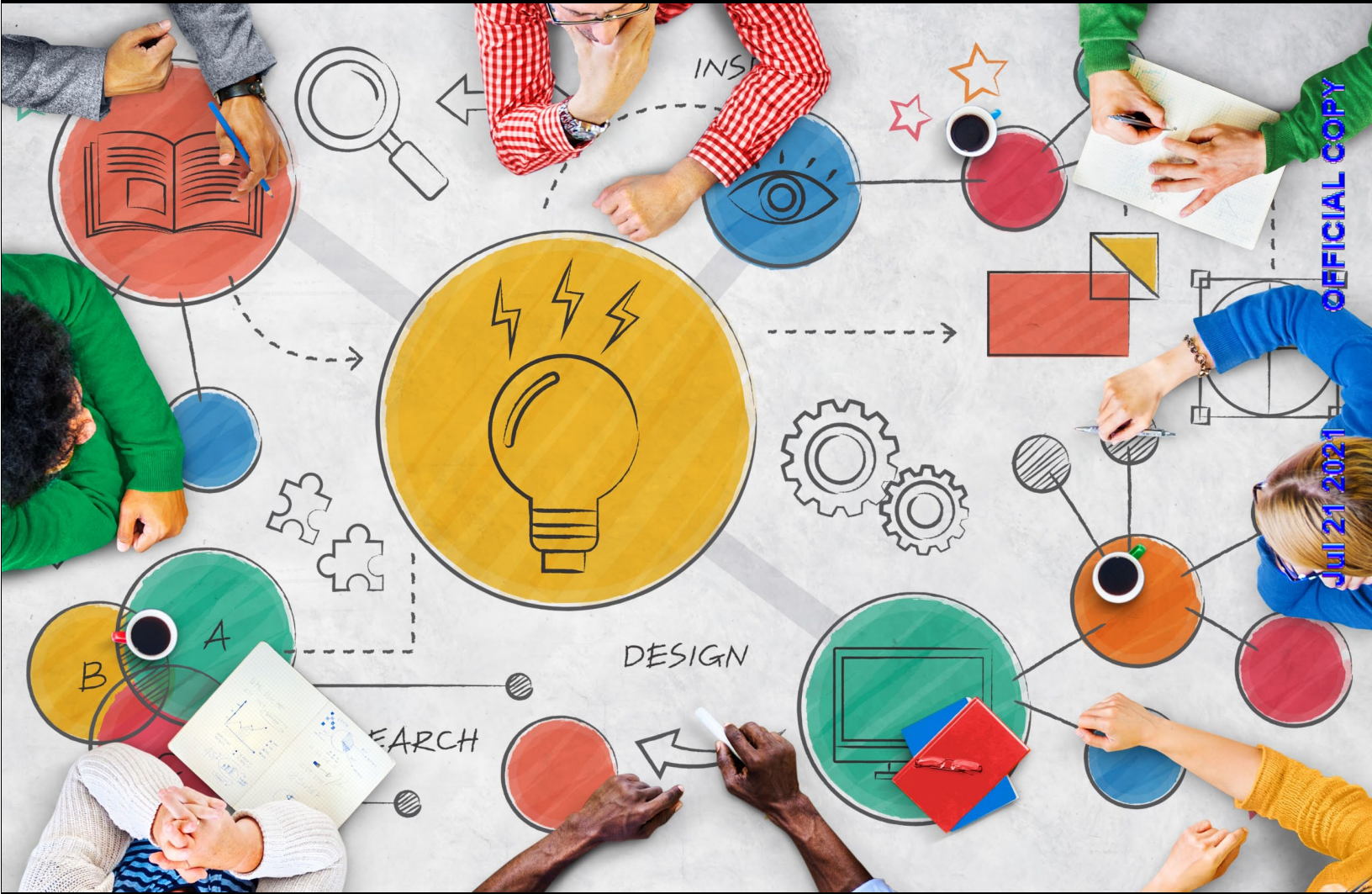
I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Rate Design Study Quarterly Report, in Docket Nos. E-7, Sub 1214 and E-2, Sub 1219, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid, to parties of record.

This the 21<sup>st</sup> day of July, 2021.



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# Duke Energy Rate Design Study Quarterly Status Report

Q2 2021

7/19/2021

Prepared by ICF on behalf of Duke Energy



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# 1. Executive Summary

Duke Energy (Duke) is conducting a Comprehensive Rate Design Study to provide new pricing options for its customers and explore the creation of a unified pricing theory to improve consistency between Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP). On March 31, 2021, the North Carolina Utilities Commission (NCUC) approved Duke's recommendation to conduct the study. The Study will span 12 months and include quarterly status reports on the work of the Rate Design Study participants over the previous quarter, including objectives achieved and anticipated work to be undertaken. This is the first of the NCUC-directed quarterly reports.

On May 18, 2021, Duke held a Rate Design Study Stakeholder Engagement Kick-Off Meeting which, initiated the stakeholder process and announced the role of ICF as a third-party facilitator. Since the kick-off, Duke has hosted two Rate Design Training Sessions and has developed surveys to solicit perspectives from stakeholders, with responses expected back by the end of July. In addition, ICF has conducted interviews with six stakeholder parties representing various perspectives. ICF has also scheduled or completed kick-off meetings for four Working Groups covering a suite of rate design topics that are of interest to stakeholders, including topics the NCUC directed Duke to include in the Study.

The following provides a short overview of each stakeholder engagement session or opportunity hosted or initiated in Q2 2021. Each was conducted virtually.

- The **Rate Design Study Stakeholder Engagement Kick-Off Meeting**, hosted by Duke on May 18, 2021, set the stage for the Rate Design Study and the associated stakeholder engagement process. Duke presented the objectives and scope of the Rate Design Study and introduced ICF as a third-party facilitator that would be planning and leading most subsequent sessions.
- The two **Rate Design Training Sessions**, hosted by Duke on June 7 and 9, 2021, were intended to provide basic information for stakeholders looking to enhance their understanding of rate design. Session 1 covered the basics of ratemaking, cost of service, and how prices are set for customers. Session 2 discussed a customer's perspective on understanding electric rates and utility bills and the Rate Design Study process.
- **5 stakeholder interviews with 7 interviewees** were conducted by ICF in June 2021. The interviews were used to gauge stakeholder opinions on current Duke rates in DEC and DEP and gather thoughts on new rates, the Rate Design Study, and the associated stakeholder engagement process.
- A **stakeholder survey** for collaborative participants was distributed in early July, and a survey for residential customers will be distributed soon. The surveys aim to solicit perspectives from a broad set of stakeholders and residential customers as a complement to the interviews above.
- **4 stakeholder Working Groups** were formed covering fast track topics (including time-of-use (TOU) rates, net energy metering (NEM), electric vehicle (EV) rates, and more), hourly pricing and economic development rates, residential rates, and non-residential rates. During Q2, scopes were set, volunteer participants were identified, and initial sessions were scheduled for each Working Group.

Stakeholders who were unable to attend the previously hosted sessions, or that are unable to attend the sessions scheduled going forward, are able to engage in the process by visiting Duke's [Comprehensive Rate Review and Design Information Portal](https://www.duke-energy.com/Our-Company/Rate-Review) (<https://www.duke-energy.com/Our-Company/Rate-Review>) or by emailing Duke directly at [RateReview@duke-energy.com](mailto:RateReview@duke-energy.com).

## 2. Q2 2021 Activities

### 2.1. Stakeholder Engagement Kick-Off Meeting

#### 2.1.1. Session Overview

The Rate Design Study Stakeholder Engagement Kick-off Meeting for the comprehensive North Carolina and South Carolina rate review was held on May 18, 2021 from 9:00 – 11:30 AM EDT. During the session, Duke covered topics including an overview of the NCUC Order and Rate Design Study requirements, an overview of upcoming stakeholder engagement and introductions to the facilitator (ICF), discussion of the Rate Design Study process, and details on upcoming information sessions. 106 stakeholders attended the virtual event, and a breakdown of the attendees by category can be found below.

Table 1. Duke Rate Design Kick-off Meeting Attendees by Category

Industry Category	Number of attendees
Customers	18
Environmental	10
Government	28
Legal/Consulting	12
Renewable/DER	7
Utilities	31
<b>Total</b>	<b>106</b>

Table 2. Duke Rate Design Kick-off Meeting Agenda and Presenters

Agenda Item	Presenter/Facilitator
Welcome	<ul style="list-style-type: none"> <li>Jack Floyd (Public Staff – North Carolina Utilities Commission, Energy Division)</li> <li>Lon Huber (Duke Energy – Vice President, Rate Design and Strategic Solutions)</li> </ul>
Opening Comments	
Overview of NCUC Order and Rate Design Study Requirements	<ul style="list-style-type: none"> <li>Jonathan Byrd (Duke Energy – Managing Director, Rate Design and Regulatory Solutions)</li> </ul>
Overview of Stakeholder Engagement/Introduction of Facilitator	<ul style="list-style-type: none"> <li>Jonathan Byrd (Duke)</li> <li>Jake Berlin (ICF)</li> <li>Maureen Quinlan (ICF)</li> <li>Katie Van Horn (ICF)</li> </ul>
Discussion of Rate Design Study Process	<ul style="list-style-type: none"> <li>Jonathan Byrd (Duke)</li> </ul>
Information Sessions/Dates	
Questions and Discussion	

#### 2.1.2. Key Themes and Takeaways

- Participants ended the session with an understanding of the general process and structure of the rate review, as well as next steps on participation. Expectations were aligned around Working Groups to cover

typically related items in more frequent meetings but with regular communications back to the larger collaborative group. Communication and flexibility were highlighted as key elements of success. Finally, timeline expectations were set with a high-level calendar covering major milestones during the full 12 months of the study.

## 2.2. Rate Design Training Sessions

### 2.2.1. Session Overview

Two Rate Design Training Sessions were hosted by Duke on June 7 and 9, 2021. Session 1 covered the basics of ratemaking, cost of service, and how prices are set for customers. Session 2 discussed a customer's perspective on understanding electric rates and utility bills and the Rate Design Study process. The customer presentation featured in Session 2 was delivered by Steven Chriss (Walmart – Director, Energy Services). The rest of the presentation topics were covered by Duke representatives. 89 total stakeholders attended the Rate Design Training Sessions. A breakdown of the stakeholders by category is provided below.

Table 3. Duke Rate Design 101 Session Attendees by Category

Category	Number of attendees	
	Session 1	Session 2
	1	2
Customers	7	7
Environmental	5	5
Government	22	19
Legal/Consulting	7	7
Renewable/DER	8	8
Utilities	32	35
Unknown	8	4
<b>Total</b>	<b>89</b>	<b>85</b>

#### Session 1

- Jack Floyd from the Public Staff began the meeting covering the four main goals of rate design, including:
  1. Utility receives sufficient revenue to covers costs and earn a fair return.
  2. Rate design follows, as closely as possible, cost causation for all customer classes. The utility does not serve customers by pitting one group against another, but sometimes the inability to mitigate this causes cross-subsidization. The goal of the utility should be to minimize cross-subsidization.
  3. Rate design subsequently addresses statutory or regulatory policies that may cause drift from cost causation.
  4. Rate design must recognize and fairly compensate distributed energy resources (DERs). Rate design must also balance DER benefits with the costs exerted on the utility’s system when DERs are not available.
- Bradley Harris and Leland Snook from Duke Energy provided an overview of the basics of rate design. The presentation covered:
  - Cost of Service
    - Described how ratemaking is a blend of embedded and marginal cost perspectives

- Discussed how rate design can result in cross-subsidization
- Described the processes of cost functionalization, classification, and allocation on a high level and how these processes form the basis for rate design
- Designing Rates
  - Explained high-level rate design goals including recognizing cost causation, incenting beneficial consumption patterns, recovering revenue requirements, and meeting public policy goals
  - Discussed Bonbright’s principles of rate design
  - Explained different types of charges and rate structures

Session 2

- The meeting was led by Steve Chriss from Walmart and covered multiple topics, including:
  - Regulatory paradigm and how utilities recover costs through rate cases or riders
  - Different types of costs, including generation, transmission, distribution, and customer costs
  - How rates are set, including how the revenue requirement is established and allocated, and how rates are designed to recover revenue requirements
  - Different types of charges and rate structures and how closely they follow Bonbright’s principles
  - Presentation materials and Q&A were provided after the meetings via Duke’s dedicated website

**2.2.2. Key Themes and Takeaways**

The sessions were used to inform stakeholders of the ratemaking process, emphasizing the fundamental principles of revenue requirements, cost allocation, and rate design. Both sessions provided an overview of the cost of service process and how this process is the foundation for rate design. Guiding principles of rate design were then discussed along with rate components and potential variations.

**2.3. Stakeholder Interviews**

**2.3.1. Interview Overview**

In June 2021, ICF conducted interviews with six stakeholder groups across a range of perspectives. Surveys have also been sent to other collaborative participants to solicit feedback (see Section 3.1).

Through this process, ICF sought insights into interviewee thoughts and priorities regarding the Rate Design Study, the associated stakeholder process, and Duke rates more generally. Takeaways from the discussions are being used to structure future engagements including stakeholder technical Working Group sessions and broader stakeholder Forums. Table 4 displays the interviewed stakeholder parties.

*Table 4. Duke Rate Design Study Stakeholder Interview Participants*

Category
Large Industrial Customer Group
Solar/Storage Advocate
Regulatory
Large Industrial Customer
Solar/Storage Developer
Solar/Storage Advocate



Discussions between ICF and the participants were considered “off the record” and used to gain a broad, baseline understanding of stakeholder objectives, concerns, and views. Takeaways from the interviews are summarized below.

### 2.3.2. Key Interview Themes

#### 1. Maintain and improve current customer rates

- Maintain the current rate structures which customers are familiar with and understand in DEP and DEC service territories, while increasing options for interested customers.
- Some residential and solar stakeholders expressed challenges in managing energy usage for the purpose of reducing or maintaining bills when residential TOU rates include demand charges.
- Some industrial stakeholders are dissatisfied with demand charge structures during times when facilities were not running consistently throughout a given month. For example, they cited difficulties with demand charges during COVID-19 shutdowns.
- Keep fixed costs low on bills to allow customers to more actively manage their energy costs through new technologies (e.g., solar PV) and load shifting.

#### 2. Expand rate options that customers can choose from

- Adding more TOU rate options for customers of all classes
- Expanding Real-Time or Hourly Pricing options
- Expanding “greener” tariff options for customers
- Adding a voltage-differentiated option in DEP
- Adding an option for commercial and industrial customers to adopt a single consistent tariff for their facilities
- Exploring a high-load factor rate option (such as the one utilized in Duke Indiana service territory)
- Increasing incentives available from demand response (DR) programs

**3. Net Energy Metering (NEM):** Many stakeholders expressed a desire to adopt a NEM design in North Carolina that mirrors the [recent NEM settlement in South Carolina](#).

**4. Transparency in rate calculation and cost of service:** Stakeholders discussed tying rates to actual cost of service for each customer and/or customer class as much as possible, with transparency in the way the rates are calculated.<sup>1</sup>

**5. Principles of Rate Design:** Most stakeholders were comfortable with the rate design guiding principles that Duke laid out in the stakeholder kick-off, which were based on Bonbright’s principles of public utility rates<sup>2</sup>. They provided the following reflections on these principles:

- **Reflect cost causation:** Rates should reflect actual cost of service for customers; avoid collecting demand-based costs in volumetric rates; wide-ranging views on how to reflect the winter peaking nature of the DEP/DEC system; rates should reflect the value of services that customer devices can bring to the grid.
- **Promote efficient use:** Customers prefer rate options that they can exercise to take control of their energy usage to save money. Customer choice was an area of emphasis for many stakeholders.

<sup>1</sup> It is important to note the difference between tying rates to “cost of service” vs. “cost causation.” “Cost of service” refers to the concept that customers and/or customer classes should pay an amount that reflects the actual cost for the utility to serve them. “Cost causation” refers to the concept that pricing structures should reflect the origin of Company costs to the degree possible (e.g., utility costs incurred from demand obligations should be collected within customer demand charges, utility costs incurred from volumetric obligations should be collected within customer volumetric charges).

<sup>2</sup> Bonbright, James C. Principles of public utility rates. 1961.

- **Stability and predictability:** Interviewees from across the spectrum expressed concern over potential “rate shock” as a result of the process, and generally favor gradualism when it comes to introducing new or altered rates.
- **Fairness in cost apportionment:** No customer or customer class should be subsidizing the rates of others with their bills. Stakeholders recognized the importance of equity and the challenges of defining it.
- **Practical – simple, understandable, feasible application:** Customers are much less likely to adopt rates that are overly complex.

### 2.3.3. Incorporating Interview Feedback

Stakeholders are looking for a transparent process that focuses on consensus building, with open and frequent communication between Duke and stakeholders. Stakeholders want to be informed about the activities going on in all Working Groups and understand how the work is progressing. Based on this feedback, ICF and Duke will develop and send a periodic email digest to all enrolled stakeholders summarizing activities to date and upcoming opportunities to engage. These emails will augment the three overarching stakeholder Forums that will provide the primary opportunity for cross-working-group awareness and collaboration.

Based on the feedback collected through the interviews, ICF recommends that the following topics be considered in the scope of one or more Working Groups:

Table 5. Stakeholder Priority Topics for Working Groups

Rate Design Topic	Applicable Working Group(s)
Net Metering Time of Use Rates Electric Vehicle rates	Fast Track, Residential, Non-residential
Expanded hourly pricing rate options Expanded Economic Development options Customer Baselines for hourly pricing rates	Hourly pricing and Economic Development
Fixed Charges Green tariff Demand Response	Residential, Non-residential
High Load Factor Rates Voltage Differentiated Rates Standby Charges Optionality (e.g., consolidating multiple buildings onto one rate)	Non-residential

## 3. Future Activities

### 3.1. Stakeholder Surveys

Duke distributed stakeholder surveys for those not participating directly in interviews with ICF approximately between July 9 – July 16. Responses are expected by the end of July. A Mass Market Rate Design Survey will also be distributed to residential customers in DEC and DEP service territories in waves beginning in late-July. Stakeholders who do not receive a survey but would like to participate can email [RateReview@duke-energy.com](mailto:RateReview@duke-energy.com) and request to be included.

### 3.2. Stakeholder Working Groups

ICF has assembled four stakeholder Working Groups covering fast track topics (including TOU rates, NEM, EV rates, and more), hourly pricing and economic development rates, residential rates, and non-residential rates. Kick-off sessions have been scheduled or completed for each of the Working Groups. Table 5 depicts a brief description of each working group. Stakeholders who would like to participate can email [RateReview@duke-energy.com](mailto:RateReview@duke-energy.com) for more information.

Table 6. Stakeholder Working Group Descriptions and Kick-Off Session Schedules

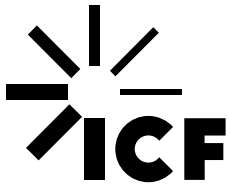
Working Group	Description	Scheduled Date/Time for Kick-Off Session
Fast Track Topics	<p>Scope includes existing and potential future rates that support innovation and meet the evolving needs of customers in DEC/DEP service territories. Topics may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• TOU Refresh</li> <li>• Net metering</li> <li>• Electric vehicles</li> </ul>	<p>July 9, 2021 11:30 AM – 12:00 PM ET</p>
Hourly Pricing and Economic Development	<p>Scope includes existing and potential future dynamic rates for customers in DEC/DEP service territory. Topics may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Hourly pricing</li> <li>• Economic development riders and programs</li> </ul>	<p>July 21, 2021 1:30 – 2:00 PM ET</p>
Residential Rates	<p>Scope includes existing and potential future rates for residential customers in DEC/DEP service territory. Topics may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Evaluation of existing residential tariffs</li> <li>• Rate availability</li> <li>• Further segmentation of rates (e.g., all-electric rates)</li> <li>• Consideration of new dynamic features and minimum bills</li> <li>• Other new rate designs</li> </ul>	<p>August 4, 2021 1:00 – 1:30 PM ET</p>
Non-Residential Rates	<p>Scope includes existing and potential future rates for non-residential customers in DEC/DEP service territory. Topics may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Evaluation of existing non-residential tariffs</li> <li>• Rate availability</li> <li>• Consideration of new rate design features</li> <li>• Create of new non-residential rate designs (e.g., HLF rate options)</li> </ul>	<p>July 14, 2021 10:00 – 10:30 AM ET</p>

### 3.3. Comprehensive Rate Design Study Stakeholder Forum 1

ICF will plan and facilitate an initial virtual rate design study forum (Forum 1), to take place on August 25, 2021. The focus of Forum 1 will be to establish a common understanding for the Rate Design Study process that Duke and stakeholders are undertaking, and to report on the working group structure and progress to date. While ICF will be facilitating the forum, the team hopes to engage stakeholders to present and report during the event.

## 4. Related Efforts

- **Low-Income Collaborative:** The Collaborative aims to evaluate a broad spectrum of regulatory programs and protections for low-income customers, ranging from affordability programs to potential new tariffs and other initiatives. The goal is to reach consensus on new low-income programs for the North Carolina Utilities Commission to consider for implementation. As of June 4, 2021, Duke had identified stakeholders interested in participating in the Low-Income Collaborative, issued an RFP seeking an independent facilitator for associated stakeholder efforts, and established a [Low-Income Collaborative Informational Portal](https://www.duke-energy.com/our-company/low-income-collaborative) website (<https://www.duke-energy.com/our-company/low-income-collaborative>). Duke filed an [update](#) on the Collaborative with the NCUC on June 4, 2021.
- **Electric Transportation Stakeholder Collaborative:** The Electric Transportation Stakeholder Collaborative established by order of the North Carolina Utilities Commission has met several times and at length. The meetings discuss pilots, program offerings, and rate designs that can support EV adoption in the Carolinas at levels that would meet the goals stated by Governor Roy Cooper in Executive Order 80 while also promoting equitable opportunities for EV adoption across urban, rural, and low-to-moderate income communities and in multi-family dwellings. With the benefit of stakeholder input, Duke has already filed for approval of programs that would support EV make ready infrastructure in homes and businesses, a pilot offering that would allow customers to pay a monthly rental fee for customer-operated Duke-owned charging equipment, and pilots that support public charging (Level 2 and DC fast charging), charging station installations at multi-family dwellings, and EV school bus adoption. Future sessions are expected to focus to a greater degree on residential and commercial (including fleet conversion) rate design concepts.
- **Time-of-Use Rates with Critical Peak Pricing:** Duke Energy Carolinas filed for approval of replacement rates for existing pilot critical peak pricing rates in Docket No. E-7, Sub 1253. The replacement rates provide, for both residential and small general service customers, time-of-use rates with improved windows reflecting on-peak and off-peak times, a discount period reflecting times of low energy costs, and critical peak periods reflecting times of unusual grid constraints. These redesigned rates provide more economic charging options for EV customers and expanded opportunities for energy cost management for customers able to adjust consumption based on price signals. The proposed prices and TOU periods reflect system costs and encourage system beneficial consumption behavior. The Company designed the rates leveraging advanced metering infrastructure (AMI) interval data from more than 1 million customers. Insights from the design approach and final proposed structure of these rates will inform the design and/or redesign of other rates through the Comprehensive Rate Design Study.



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#### About ICF

ICF (NASDAQ:ICFI) is a global consulting and digital services company with over 7,000 full- and part-time employees, but we are not your typical consultants. At ICF, business analysts and policy specialists work together with digital strategists, data scientists and creatives. We combine unmatched industry expertise with cutting-edge engagement capabilities to help organizations solve their most complex challenges. Since 1969, public and private sector clients have worked with ICF to navigate change and shape the future. Learn more at [icf.com](https://www.icf.com).