



Kathleen H. Richard  
Counsel

Mailing Address:  
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: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's  
Informational Letter Regarding Implementation of Standardized AMI  
Meter Programming  
Docket No. E-100, Sub 161**

Dear Ms. Dunston:

The purpose of this letter is to provide the North Carolina Utilities Commission (the "Commission") with an update regarding the upcoming implementation of Standardized AMI Meter Programming for Duke Energy Progress, LLC's ("DEP") and Duke Energy Carolinas, LLC's ("DEC" and together with DEP, the "Companies") North Carolina operations. While no action from the Commission is needed at this time as it relates to these meter programming activities, the Companies are filing this letter to make the Commission aware of the project and the benefits it provides to the Companies and their customers.

The Companies' new customer information system ("Customer Connect") enables the completion of customer rate changes without requiring a physical meter change at a customer premise. Eliminating the premise visit will result in timely completion of the rate change, reduce operational costs, and eliminate an outage at the customer premise. To take advantage of this new Customer Connect capability, the Companies will deploy a single standard meter program to all AMI meters in the service territory. Duke Energy has already implemented Standardized AMI Meter Programming in its Florida jurisdiction ("DEF"), and other utilities in the country have implemented similar meter programming as a best practice.

Standardized AMI Meter Programming will provide the following benefits:

- **Rate Flexibility for Customers** – A future benefit associated with the Customer Connect platform is the ability to perform rate reviews and offer rates that may provide an opportunity for customer to save money on their electric bill. Moving to a standard meter program allows most customers to change rates without the need for a meter

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APR 25 2022

change. This will become even more beneficial as more complex time-of-use and critical peak pricing rates are introduced in the future.

- Customer Satisfaction – If a customer does request a rate change, most will not have to wait for their meter to be changed or experience an outage associated with it.
- Customer Convenience – For customers with meter access issues at their premise (locked gates, dogs, etc.), most will no longer need to be at home for the meter change.
- Reduced Customer Liability –Minimizes potential liability of the customer associated with a person on their property.
- Employee Safety – Eliminates a Company meter technician having to program meters in the field. This reduces drive time and potential personal injury associated with the meter change.
- Cost Savings – Eliminates most meter changes when a customer requests a rate change, and the operational costs associated.
- Human Performance Risk – Eliminates the potential for a meter to be manually programmed incorrectly.

Standardized AMI meter programming will not impact customers' ability to access their billing details and energy usage information. Today, the Companies provide several meter data access and energy information tools for customers via their online account portal and call center support. Totalized energy usage and generation meter readings (where applicable) will continue to be displayed on the face of the meter for all customers. Additional details are included in Exhibit A attached.

The Companies have met with and provided this information to the Public Staff, and they have expressed their support of the project. Accordingly, the Companies intend to proceed with the project upon the filing of this informational letter to the Commission.

If you have any questions, please let me know.

Sincerely,



Kathleen H. Richard

Enclosure

cc: Parties of Record

**Proposal for a Standard AMI Meter Program**

April 22, 2022

BUILDING A SMARTER ENERGY FUTURE<sup>SM</sup>

1

**Proposal for a Standard AMI Meter Program**

**Summary:**  
 Duke Energy's new customer information system enables the completion of most customer rate changes without requiring a meter change. Eliminating the premise visit will result in timelier completion of the rate change, reduced costs, and an avoided customer outage. In order to take advantage of this new capability, Duke Energy will need to implement a standard meter program in all meters. This standard program simplifies the meter display for customers on interval billed rates. Duke Energy has implemented a standard meter program in its Florida jurisdiction (DEF), and other utilities have implemented a standard AMI meter program as a best practice.

**Proposal:**

- AMI meters will have one standard meter program, and will require no programming, regardless of customer rate
- The standard meter program will display a reading for total usage, and a reading for total generation (See Appendix 1-3 for current & proposed meter displays)
- Approximately 86% of meters in DEC and DEP will continue to be scalar billed, and the only impact will be an additional reading on the display for total generation. This will remain at zero unless a Net Metering rider is in place.

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### Standard AMI Meter Program – Benefits

- **Meter provides flexibility for any rate** – A future benefit associated with Customer Connect Program is the ability to perform “Rate Reviews” and offer rates that may allow the customer to save money. Moving to a standard meter program allows most customers to change rates without the need for a meter change. This becomes even more beneficial as additional, and potentially more complex rates are introduced
- **Customer satisfaction** – A customer initiated complex rate change does not need to wait for a meter change
- **Customer convenience** – For customers with meter access issues (locked gates, dogs, etc.), it can be inconvenient and costly to be home for a meter change
- **Reduced customer liability** – There is potential liability to the customer whenever someone enters their property
- **Safety** – Eliminate a meter tech having to program meters in the field. Reduce drive time and potential personal injury by eliminating a meter change for most customer complex rate changes

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### Standard AMI Meter Program – Benefits (Cont.)

- **Cost savings:**
  - Eliminate a meter change for most customer initiated complex rate changes
  - Eliminate the meter programming step for most meter changes (when required)
  - Reduce time spent managing and maintaining specialty meter programs (TOU, Net Metering, etc.)
- **Eliminate human performance risk** – By eliminating most meter programming, it eliminates the risk that the meter will be manually programmed incorrectly
- **Reduce technical risk** – Over-the-air meter firmware and meter program updates are periodically required. The technical risk associated with these updates is greatly reduced due to the reduction of meter programs

4

4



## Standard AMI Meter Program – Addressing Customer Billing Concerns

For customers on interval billed rates, the standard meter program will not impact their ability to address billing questions (i.e. High Bill Concerns). Billing questions can be addressed by accessing information via the Online Experience and/or by contacting the Call Center.

- **Online Experience for Bill Verification** – Provides customers with the ability to access billing details in a centralized location:
  - View/Download invoices (PDF), payment history, and energy usage
  - View energy usage graphs with options to drill into various time increments based on meter type  
*See Appendix 4 & 5 for additional details on the customer tools available for online bill verification*
- **Call Center Tools for Bill Verification** – Provides a Call Center Specialist with billing details needed to support customer calls:
  - View invoice images and payment history via the Customer Connect Application
  - View energy usage via the Customer Connect Bill Analyzer Tool and AMI Portal / Meter Data Management (MDM) System
  - Provide the same online view available to the customer via the Web Portal Administration Tool  
*See Appendix 6 for additional details on the call center tools available for bill verification*

*Note – Call Center Specialists are trained to answer customer billing questions. Call Center processes and training have been updated to support the removal of rate specific readings from the meter display*

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5



## Appendix 1-3 (Meter Displays)

- 1 - Current Meter Displays for Time of Use Rates
- 2 - Proposed Meter Displays for Time of Use Rates
- 3 - Current and Proposed Meter Displays for Energy Only and Demand Rates

6

6



### Appendix 1 Current Meter Displays for Time of Use Rates



Date



Time



Total Reading/Usage



Summer On Peak Reading/Usage



Summer On Peak Demand



Winter On Peak Reading/Usage



Winter On Peak Demand

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### Appendix 2 Proposed Meter Displays for Time of Use Rates (Standard AMI Meter Program)



Total Reading/Usage



Total Reading/Generation

- Proposed energy usage displays for a Time of Use meter (Standard AMI Meter Program):
  - Total Reading/Usage
  - Total Reading/Generation

7

8



### Appendix 3 Current Meter Displays for Energy Only and Demand Rates



Total Reading/Usage

- Total Reading/Usage is currently the only energy usage display for Energy Only and Demand Rate meters
- Demand/kW is not displayed on meters used for Demand Rates

### Proposed Meter Displays for Energy Only and Demand Rates (Standard AMI Meter Program)



Total Reading/Usage



Total Reading/Generation

- Proposed energy usage displays for Energy Only and Demand Rate meters (Standard Meter Program):
  - Total Reading/Usage
  - Total Reading/Generation

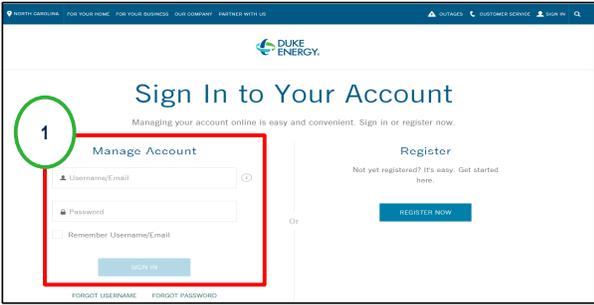


## Appendix 4 Customer Tools for Online Bill Verification – Residential Customers



## Getting Started - Residential Customer


**Customer Connect**  
 Simplify. Strengthen. Advance.



**1** Sign In to Your Account

Managing your account online is easy and convenient. Sign in or register now.

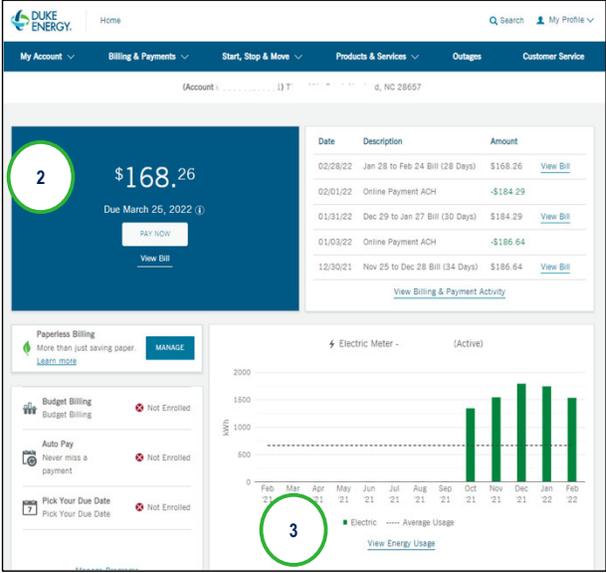
**Manage Account**

Username/Email

Password

Remember Username/Email

**REGISTER NOW**



**2** \$168.26

Due March 26, 2022

**3** View Energy Usage

Jonathan can use online resources to help understand usage patterns to validate the details displayed on his bill

- Customers will have the ability to create a profile to manage their account(s) in an authenticated digital experience.
- After signing in, the customer will arrive at their account dashboard where they can access billing and payment history, program offerings, and usage details quickly
- By selecting "View Energy Usage" from their account dashboard, customers can quickly navigate to their usage information to explore more details.

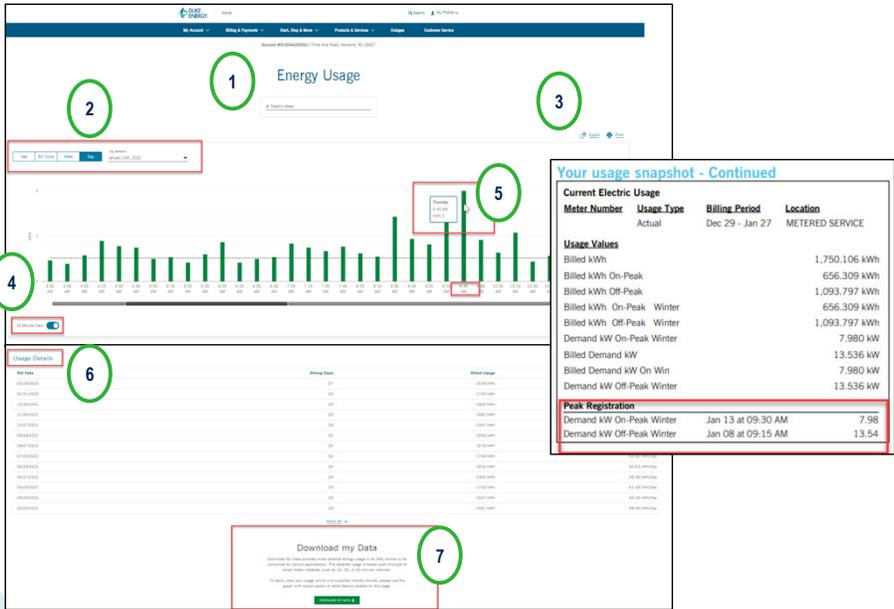
All data and customer information used in this presentation is for illustrative purposes only.

13

13

## View Energy Usage - Residential Customer


**Customer Connect**  
 Simplify. Strengthen. Advance.



**1** Energy Usage

**2** [Filter/View Options]

**3** [Download/Print Options]

**4** [Usage Chart]

**5** Your usage snapshot - Continued

Meter Number	Usage Type	Billing Period	Location
Actual		Dec 29 - Jan 27	METERED SERVICE
<b>Usage Values</b>			
Billed kWh		1,750.106 kWh	
Billed kWh On-Peak		656.309 kWh	
Billed kWh Off-Peak		1,093.797 kWh	
Billed kWh On-Peak Winter		656.309 kWh	
Billed kWh Off-Peak Winter		1,093.797 kWh	
Demand kW On-Peak Winter		7.980 kW	
Billed Demand kW		13.536 kW	
Billed Demand kW On Win		7.980 kW	
Demand kW Off-Peak Winter		13.536 kW	
<b>Peak Registration</b>			
Demand kW On-Peak Winter	Jan 13 at 09:30 AM	7.98	
Demand kW Off-Peak Winter	Jan 08 at 09:15 AM	13.54	

**6** Usage Details

**7** Download my Data

Jonathan can view more detailed energy usage details including the ability to export the graphical data or see various usage increments

- Customers with more than one meter can easily toggle between the meters to view the energy usage
- Customer's can choose to view and export usage data by year, bill cycle, month, or day.
- Easily export the graphical data to an Excel file for tracking purposes, or print the graph as needed
- Toggle on the option to view smaller time slices based on the type of meter installed – typically, customers can select to view 30- or 15-minute intervals
- View usage details by hovering over the bar in the chart
- View additional usage details by bill period in table format for quick reference
- The ability to 'download my data' provides usage details in a format that can be consumed by other applications the customer may be using to manage their usage data.

All data and customer information used in this presentation is for illustrative purposes only.

14

14



# Appendix 5

## Customer Tools for Online Bill Verification – Non-Residential Customers

### The Non-Residential Customer Experience



Jami owns her own business and is working hard to manage her energy costs. She has implemented new energy efficient heating systems and upgraded her equipment recently. Jami received her monthly invoice and feels as though the bill is too high. She is enrolled in a Time of Use rate and uses tools to manage her on peak and off peak usage. She would like to verify the information on her bill and investigate her electric energy usage further.

**DUKE ENERGY** 800.653.5327

**Your Energy Bill** Page 1 of 3  
 Service address: [Redacted] Bill date: Feb 14, 2022  
 For service: Jan 10 - Feb 9, 31 days

**Billing summary**

Previous Amount Due	\$30,713.40
Payment Received Feb 01	-30,713.40
Current Electric Charges	26,081.12
Taxes	5,829.68
<b>Total Amount Due Mar 11</b>	<b>\$27,090.68</b>

**Your usage snapshot**

Electric usage history graph showing usage from Feb 2021 to Feb 2022.

**Average temperature in degrees**

Month	Current Month	Feb 2021	12 Month Usage	Avg Monthly Usage
Electric kWh	514,280	492,000	7,844,365	662,030

12 month usage based on most recent history.

**DUKE ENERGY** 800.653.5327

**Your usage snapshot - Continued** Page 3 of 3

**Current Electric Usage**

Meter Number	Usage Type	Billing Period
Actual	Actual	Jan 10 - Feb 9
Actual	Actual	Jan 10 - Feb 9

**Usage Details**

Billed kWh	\$14,279,800 kWh
Billed kWh On Peak	11,807,600 kWh
Billed kWh Off Peak	402,473,200 kWh
Actual Demand kW On Peak Wtn	1,085,400 kW
Actual Demand kW Off Peak	1,181,400 kW
Billed Demand kW On Peak Wtn	1,085,400 kW
Economy Demand	96,000 kW

**Peak Registration**

Actual Demand kW On Peak Wtn	Feb 09 at 12:00 PM	1,085.40
Actual Demand kW Off Peak	Feb 03 at 04:00 PM	1,181.40

**Billing details - Electric**

Billing Period: Jan 10 to Feb 09

Basic Facility Charge	\$32.17
Energy Charge On Peak	6,960.51
Energy Charge Off Peak	9,277.08
Demand Charge On Pk Wtn	9,411.18
Economy Demand Charge	723.58
Renewable Energy Rider	5.14
Smart Recovery Charge	70.46
Extra Facility Charge	100.00
<b>Total Current Charges</b>	<b>\$26,081.12</b>

**Billing details - Taxes**

Sales Tax For Utility	\$1,829.68
<b>Total Taxes</b>	<b>\$1,829.68</b>

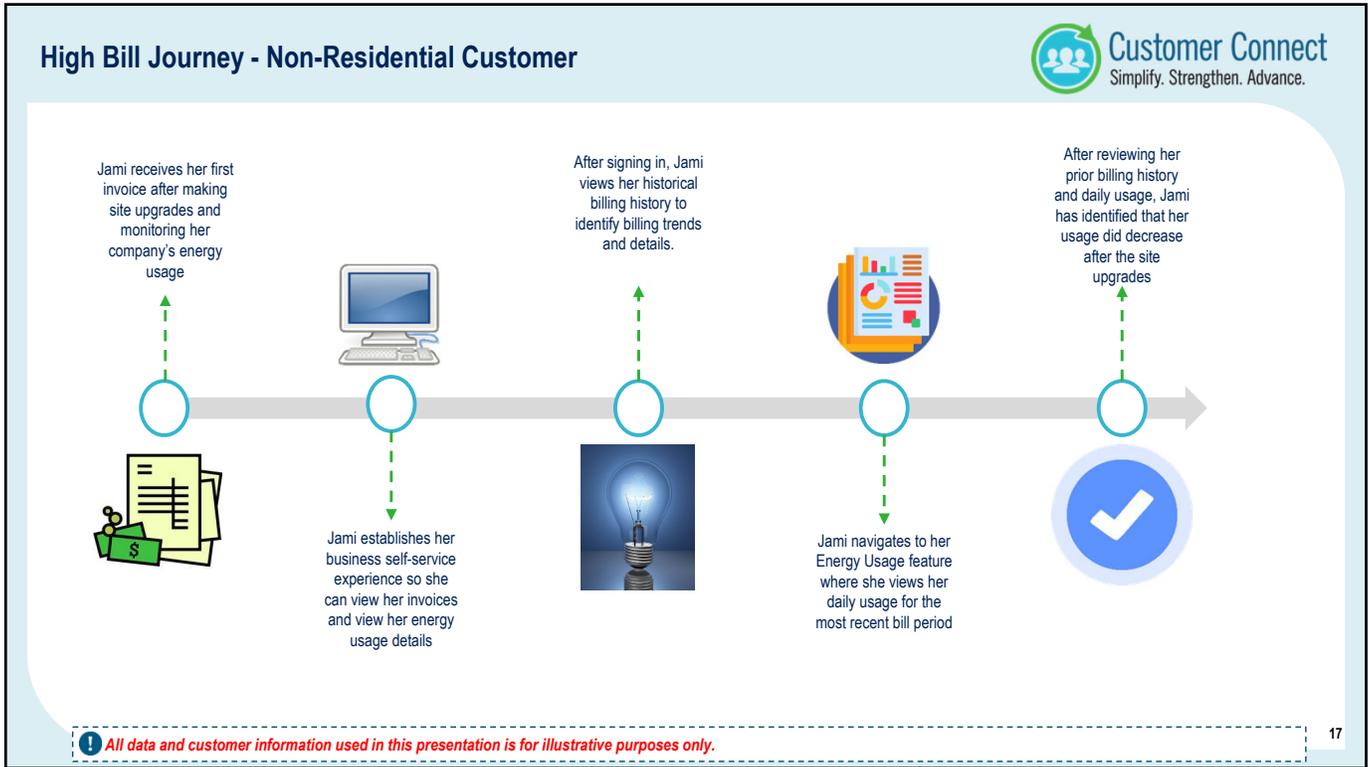
Your current rate is Optional Power Time of Use, Voltage Differential, Secondary Metering (OPV).

For a complete listing of all North Carolina rates and riders, visit [dukeenergy.com/rates](http://dukeenergy.com/rates).

Customers have access to online information through their authenticated self-service experience that enables them to gain further insights about their energy usage:

- View PDF copy of their monthly invoice
- Energy usage graph with options to drill into various time increments based on the meter type
- Export view of data populating the energy usage graph
- Billing and usage exports to provide flexibility in evaluating monthly billing details in a centralized location
- Continued access to third party tools for further energy analysis (EPO)
- Ability to download energy usage details in a machine readable format (CSV files) that enable those details to be utilized with other applications

**All data and customer information used in this presentation is for illustrative purposes only.**



17

### Getting Started - Non-Residential Customer

**Customer Connect**  
Simplify. Strengthen. Advance.

1 Jami can use online resources to help resolve her high bill concerns and validate the details displayed on her bill

1. Customers have the ability to create a profile to manage their account(s) in an authenticated digital experience.
2. After signing in, the customer will arrive at their account dashboard where they can access quick links to frequently used features such as viewing energy usage

2

1 All data and customer information used in this presentation is for illustrative purposes only.

18

18

## View Billing and Payment History - Non-Residential Customer

**Customer Connect**  
Simplify. Strengthen. Advance.

Initially, Jami may choose to navigate to view historical invoices or export additional billing information to help view billing trends and details to make decisions on how to proceed before exploring specific usage details

1. From the customer's account dashboard, they will navigate to the Billing and Payments menu option
2. Here, they will find their Billing & Payment Activity feature
3. The Billing & Payment Activity feature enables the customer to view a history of their bills and payments for the account(s) selected
4. All customers will have the ability to view a PDF version of their actual invoice
5. Customers may choose to 'download' the information from the Billing History or Payment History views. This will result in an Excel spreadsheet replicating the details seen in this table view
6. Business customers who need additional billing details may choose to download additional details for up to 24 months of history for a single account selected

! All data and customer information used in this presentation is for illustrative purposes only.

## View Energy Usage - Non-Residential Customer

**Customer Connect**  
Simplify. Strengthen. Advance.

Now that the Jami has reviewed her bill history, she can navigate to more detailed energy usage history to view usage trends

1. The customer can navigate to the Energy Usage feature to view their Electric usage details
2. They may select an account and the associated meter to populate the usage graph
3. For a non-AMI customer, they will be presented with only the billing month view and can choose which bill period they would prefer to view
4. Customers may toggle on a comparison of current and previous year's usage. Hovering over the bar on the graph will provide customer with the actual kWh usage value for the time period selected
5. For AMI customers, including Time of Use, the customer can choose to view and export usage in time increments relevant to their meter configuration (i.e. Hourly, 30 minute, 15 minute intervals) for the day selected
6. *Time of Use Details Box is Illustrative – Anticipate that Time of Use details will be available in the future. In the meantime, these details are viewable on the customer's invoice which is available in PDF format within their online experience*

! All data and customer information used in this presentation is for illustrative purposes only.

### Viewing Interval Data - Non-Residential Customer

Now that Jami knows more about her usage trends, she can use her interval information to take a closer look at her usage patterns during on peak and off peak times

1. Based on the meter type and configuration, a customer may view and export hourly, 30 minute, or 15 minute intervals of data for the day selected. They can review the time periods considered on peak and off peak to determine any usage trends that may have impacted their bill. **Daily usage is available for the day prior so customers may view unbilled usage as soon as the next day without needing to wait for a new bill.** ★
2. Customers may export the energy usage information that is populating the graph into an Excel document to view the details in a consolidated way for the time period selected

! All data and customer information used in this presentation is for illustrative purposes only.

21



# Appendix 6

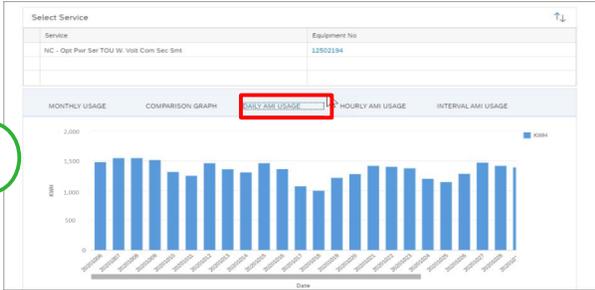
## Call Center Tools for Bill Verification

22

## View Customer Usage Data – High Bill Analyzer Tool


**Customer Connect**  
 Simplify. Strengthen. Advance.

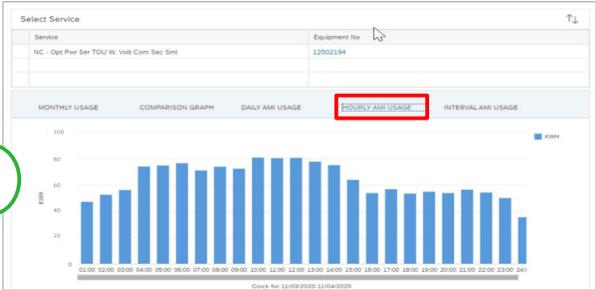
**1**



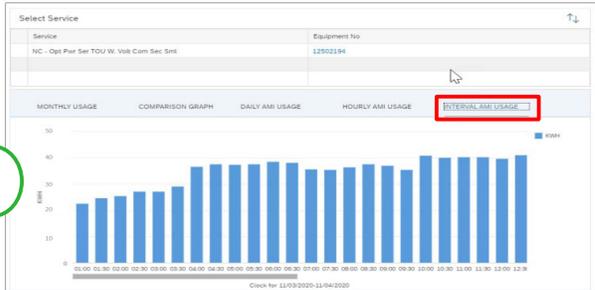
To assist customers with questions related to high bill inquiries or other usage-related questions, Call Center Specialists will utilize the High Bill Analyzer Tool in the Customer Connect Application to view the following information for previously billed periods in one of three available graphical views for usage:

1. Daily kwh
2. Hourly kwh
3. Interval kwh usage (15 or 30 minute data based on meter type)

**2**



**3**



All data and customer information used in this presentation is for illustrative purposes only.

23

23

## View Customer Peak Demand/kW – Customer Bill Image


**Customer Connect**  
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**Your usage snapshot - continued**

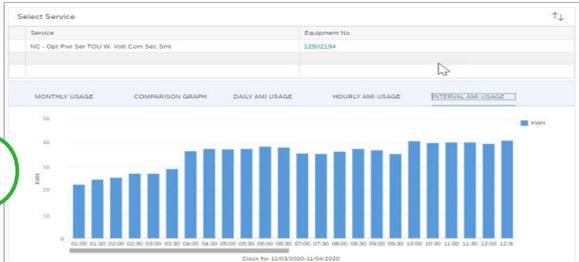
Current Electric Usage	
Meter Number	Billing Period
██████████	Oct 6 - Nov 4
Usage Values	
Billed kWh-On Peak	9,531 kWh
Billed kWh-Off Peak	30,754 kWh
Actual Demand-kW On Peak Win.	82.18 kW
Actual Demand kW Off Peak	81.79 kW
Billed Demand-kW On Peak Win.	82.18 kW
Peak Registration	
Actual Demand kW Off Peak	Nov 03 at 4:00 am 81.79
Actual Demand-kW On Peak Win.	Nov 03 at 6:30 am 82.18

**1**

To assist customers with questions about Demand/kW billing, the Call Center Specialist have been trained to navigate to the customer's bill image in the Customer Connect Application to locate the date and time of the peak demand from the "Peak Registration" section of the bill. The Call Center Specialist can then navigate to the interval usage graph in the High Bill Analyzer Tool to discuss the period of peak demand with the customer.

1. Peak Registration - Peak date and time for demand/kW on the Customer's Bill Image
2. Interval kwh usage during peak demand/kW period (15 or 30 minute data based on meter type) – High Bill Analyzer Tool

**2**



All data and customer information used in this presentation is for illustrative purposes only.

24

24



### View Customer Usage Data Since Last Bill – AMI Portal / MDM

360° View

Measuring Component Overview

Measuring Component: 77684763-C&M-NC015C01 / 1 / 07549679956 / Electric, Interval kWh Delivered, 30min

Device Configuration Overview

Type	Information	Value
Interval / 7 Measuring Component(s) / Active		360
3 Duke Register	102 / 87131618949 / Electric, kWh Use Directional, Daily Scalor	360
4 Duke Register	102 / 72226561458 / Electric, kWh Received, Daily Scalor	360
5 Duke Register	101 / 80513205884 / Electric, kWh Delivered, Daily Scalor	360
6 Duke Register	105 / 76415650334 / Electric, kWh Received, Daily Scalor	360
7 Duke Register	104 / 28878913213 / Electric, kWh Delivered, Daily Scalor	360
Duke Interval Channel	77684763-C&M-NC015C01 / 2 / 47914444004 / Electric, Interval kWh Delivered, 30min	360
Duke Interval Channel	77684763-C&M-NC015C01 / 1 / 07549679956 / Electric, Interval kWh Delivered, 30min	360
Duke Service Point	361 / 107181871-BELMONT, NC, 28812, USA / 16002627026 / Electric, Small CM / Meter Read Cycle 6 - SAP / Certified	360

360° View

Current Device Configuration

Field Values Overlay

Measuring Component: 77684763-C&M-NC015C01 / 1 / 07549679956 / Electric, Interval kWh Delivered, 30min

Value Identifier Type: Interval kWh, 30min(s)

Start Date/Time: 10-06-2020 00:00:00 EDT

End Date/Time: 11-05-2020 00:00:00 EDT

Values to Graph

Measurement Data

10-06-2020 0:00:00 EDT - 11-05-2020 0:00:00 EDT

To assist customers with questions about their energy usage since the last bill period, the Call Center Specialist have been trained to use the AMI Meter Data Management (MDM) system. The MDM system is accessed via an “AMI Portal” link provided to Specialists. Once in MDM, the Call Center Specialist can select and view the desired usage data.

1. Select the desired usage data (Example - Interval kWh Delivered)
2. Specify the desired date range to view the “Measurements Data” usage graph
3. View interval usage values by day, for the desired bill service dates

Initial Measurement Data	Quick Edit	Measurement Count	Count	Total	Minimum	Maximum
10-06-2020 0:00:00 EDT - 10-07-2020 0:00:00 EDT / Finalized	✓	48	48	1,482.62	25.15	37.06
10-07-2020 0:00:00 EDT - 10-08-2020 0:00:00 EDT / Finalized	✓	48	48	1,549.25	24.96	38.02
10-08-2020 0:00:00 EDT - 10-09-2020 0:00:00 EDT / Finalized	✓	48	48	1,543.68	25.34	37.25
10-09-2020 0:00:00 EDT - 10-10-2020 0:00:00 EDT / Finalized	✓	48	48	1,484.16	25.15	37.44
10-10-2020 0:00:00 EDT - 10-11-2020 0:00:00 EDT / Finalized	✓	48	48	1,312.70	24.96	33.98
10-11-2020 0:00:00 EDT - 10-12-2020 0:00:00 EDT / Finalized	✓	48	48	1,278.53	24.58	34.37
10-12-2020 0:00:00 EDT - 10-13-2020 0:00:00 EDT / Finalized	✓	48	48	1,454.02	23.23	35.14

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### Support The Customer Online Experience

DUKE ENERGY | Web Portals Administration Tool

User: NAM/T28364 Ashley Newman Email: Ashley.Newman@duke-energy.com Login: 02/25/2021 10:23:55 PM Role: ADMIN\_SUPER\_USER

Profile Search

Internal Id

Jami.Jenkins@gmail.com

Partial Filter: All

SEARCH

Call Center Specialists have access to a Web Portal Administration Tool that enable them to impersonate the customer’s online experience. This provides the Call Center Specialist with the same online view as the customer, allowing them to help the customer navigate the online experience.

1. Search for a customer’s email address to access the customer’s online experience

*Impersonating a customer’s online experience is not co-browsing, and a Call Center Specialist can not make changes in the customer’s online experience*

All data and customer information used in this presentation is for illustrative purposes only.

**CERTIFICATE OF SERVICE**

I certify that a copy of Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Informational Letter Regarding Implementation of Standardized AMI Meter Programming, in Docket No. E-100, Sub 161, 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 25<sup>th</sup> day of April 2022.



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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](mailto:kathleen.richard@duke-energy.com)