



Jason A. Higginbotham
Associate General Counsel

4720 Piedmont Row Drive/PNG 04C
Charlotte, NC 28210

o: 704.731.4015

Jason.Higginbotham@duke-energy.com

OFFICIAL COPY

Mar 03 2023

March 3, 2023

VIA ELECTRONIC FILING

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

**RE: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC
February 27, 2023 PSCSC Allowable Ex Parte Briefing on Winter
Storm Elliott
Docket No. M-100, Sub 163**

Dear Ms. Dunston:

On February 27, 2023, Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP” and together with DEC, “Duke Energy” or the “Companies”) participated in an Allowable Ex Parte Briefing to the Public Service Commission of South Carolina (“PSCSC”) on the impact of and the Companies’ response to Winter Storm Elliott. The Companies hereby enclose for filing a copy of the presentation provided to the PSCSC during that briefing.

As you will see, the February 27 presentation is largely identical to the presentation the Companies provided to the North Carolina Utilities Commission on January 3, 2023 and also filed in this docket. There are certain updates and revisions included in the February 27 presentation that reflect information the Companies have refined or further developed since the January 3 briefing. Much of the information included in the updated presentation was also provided in the Companies’ responses to the Public Staff’s Data Request No. 2, which have been filed in this docket.

The table below provides a high-level summary of the differences between the January 3 and February 27 presentations.

Comparison of DEC/DEP January 3, 2023 and February 27, 2023 Winter Storm Elliott Briefings	
Slide Number	Addition or Revision
Slide No. 7	Revision: Corrects that 120 MW (not 305 MW, as provided in the 1/3/23 Presentation) was lost from a DEP network customer that lost firm purchase. The revision was based on corrected information provided by the wholesale customer.
Slides Nos. 8 – 10	Addition: Adds new “Procurement and PJM” Section.
Slide No. 17	Addition: Adds discussion about the impact of events to certain Customer Channels at 6:37AM on 12/24/22.
Slide No. 18	Addition: Adds discussion about status of certain Customer Channels at 8:24AM on 12/24/22.
Slide No. 19	Addition: Adds discussion about status of certain Customer Channels at 10:36AM on 12/24/22.
Slide No. 24	Addition: Adds “Event Review and Lessons Learned” Section.

A video presentation of Duke Energy's February 27 Allowable Ex Parte Briefing to the PSCSC on Winter Storm Elliot is available at the following link: <https://www.sctv.org/live/public-service-commission>.

If you have any questions, please let me know.

Sincerely,


Jason A. Higginbotham

Enclosure

cc: Parties of Record

Duke Energy | Dec. 24, 2022, Load Shed Event

Today's Presenters:

Introduction

Mike Callahan – South Carolina State President

Panel One

Sam Holeman – VP Transmission System Planning & Ops

Nelson Peeler – SVP, Transmission and Fuels Strategy and Policy

Paul Draovitch – SVP, Chief Regulated & Renewable Energy Officer

Panel Two

Scott Batson – SVP & Chief Distribution Officer

Bonnie Titone – SVP and Chief Information Officer

Taryn Sims – VP Marketing, Insight & Customer Engagement



Duke Energy Carolinas | **Event Timeline**

Friday, 12/23



6:00 PM

Forecast showed that we could meet peak demand with more than **1500 MW** in operating reserve



7:00 PM

Customer demand in DEC saw modest divergence from forecast



10:00 PM

Still projected to meet peak demand with **900 MW** in operating reserve



First indication operating reserves were tighter than desired

Saturday, 12/24



12:00 AM

Due to cold weather Dan River derated resulting in a **360 MW** loss



2:00 AM

Customer demand continued to outpace projections and showed we were down to **200 MW**





2:00 AM – 6:00 AM

Several events caused DEC to go into negative operating reserves

400 MW of **firm purchase** supply and 250 MW of **non-firm purchase** supply was cut resulting in a loss of 650 MW of supply

Third party that provides firm purchase generation tripped resulting in a loss of 350 MW between 4:00 AM – 6:00 AM

Between these events we lost nearly **1000 MW** of resources



6:00 AM

By this time, Area Control Error (ACE) continued to grow more negative



6:14 AM

Load-shedding event triggered our load shedding protocols



Duke Energy Progress | **Event Timeline**

Friday, 12/23



6:00 PM

Forecast showed that we could meet peak demand with more than **1100 MW** in operating reserve



Saturday, 12/24



2:00 AM

Still projected to meet peak demand with **1000 MW** in operating reserve



2:30 AM

Roxboro unit three derated – losing approximately **325 MW**



5:00 AM

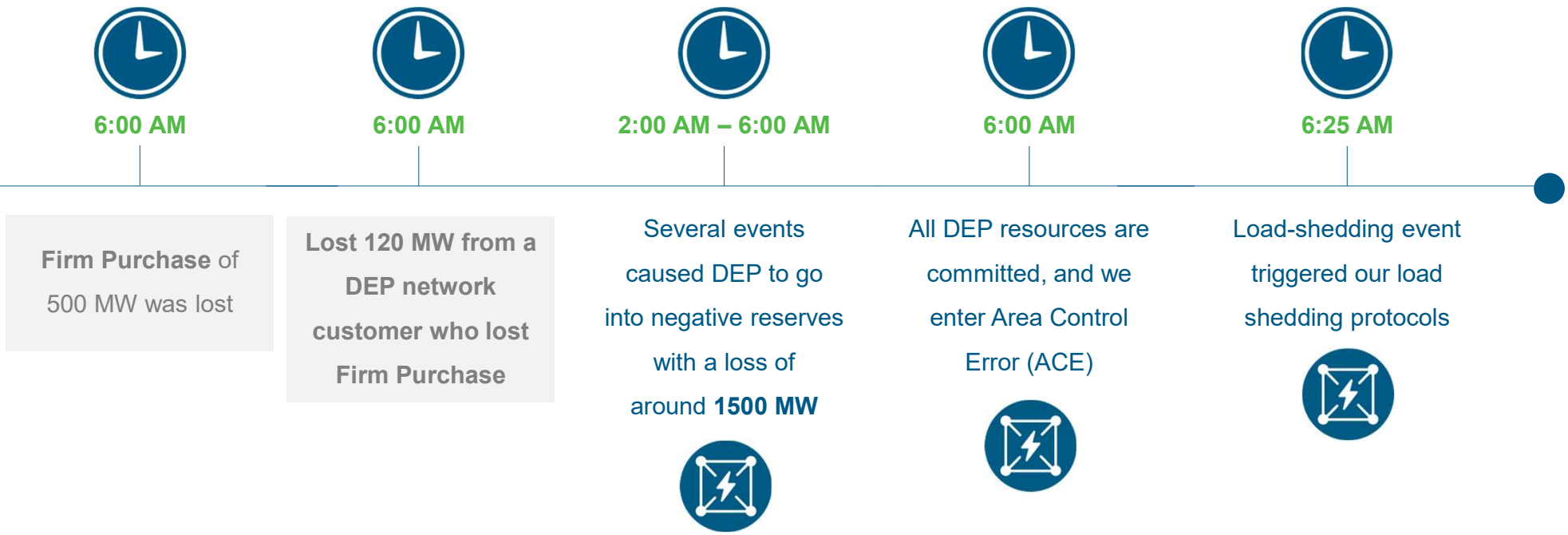
Customer demand began to outpace projection in DEP for the first time



6:00 AM

Mayo was derated resulting in a loss of **350 MW**





Procurement and PJM

PJM**Early Morning Dec. 24***

During the morning peak hours, DEP and DEC power purchases originating in PJM were cut. (900 MW of firm capacity and 250 MW non-firm energy)

PJM has since reported that their “Actual load came in over 10% over forecast”

In the early morning hours of Dec. 24, PJM experienced an escalating amount of generators fail to perform due various causes, including start failures and unit trips

“Over 92% of all outages were reported to us with less than an hour’s notice or with no notice at all.”

“Between forced outages, derates, generators that did not start on time, and the inability to fill pumped storage hydro ponds, PJM was dealing with ~57 GW of generator unavailability for the Dec. 24 morning peak.”

“Dec 23 – PJM began curtailing exports as our capacity position deteriorated due to the generation failures that we were having”

*SOURCE: <https://www.pjm.com/-/media/committees-groups/committees/mic/2023/20230111/item-0x---winter-storm-elliott-overview.ashx>

PJM**Early Morning Dec. 24***

After 4 a.m., PJM entered EEA2, issued a Max Generation Emergency Action, made an Emergency Energy Request and cut schedules exporting energy from PJM.

Across the morning peak on Dec. 24, PJM was a net importer of energy.

Energy sales into the DEC and DEP balancing authorities originating in PJM were cut during the morning peak hours of Dec 24.

Included Duke purchases and third-party purchases to serve load in the Duke BAs

*SOURCE: <https://www.pjm.com/-/media/committees-groups/committees/mic/2023/20230111/item-0x---winter-storm-elliott-overview.ashx>

Generation Performance



Actions to Implement Load Shed

Saturday, 12/24



6:20 AM

Initial load shed request from the Energy Control Center (ECC) (**400 MW** for DEC and **600 MW** for DEP)



6:30 AM

Requested load reductions were initiated using the automated Rotational Load Shed (RLS) tool



6:45 AM

Automated tool worked properly for **400 MW** reduction in DEC and began cycling through 15-minute outages



7:00 AM

Automated tool worked properly for **600 MW** reduction in DEP – stopped responding before the cycling process completed



7:05 AM

Second request to reduce load an additional **600 MW** for DEC and **200 MW** for DEP





7:10 AM

Automated tool does not respond to additional load reduction requests, requiring manual load reduction activities



7:35-8:00 AM

Energy Control Center (ECC) tripped two transmission lines to maintain integrity of the grid



8:00 AM

Operators successfully completed required manual load reductions – total of 269 circuits out of service – began process to restore circuits manually



8:00 AM & 9:30 AM

Assessed system conditions and began restoration












8:00 AM – 4:00 PM

Restored all 269* circuits manually

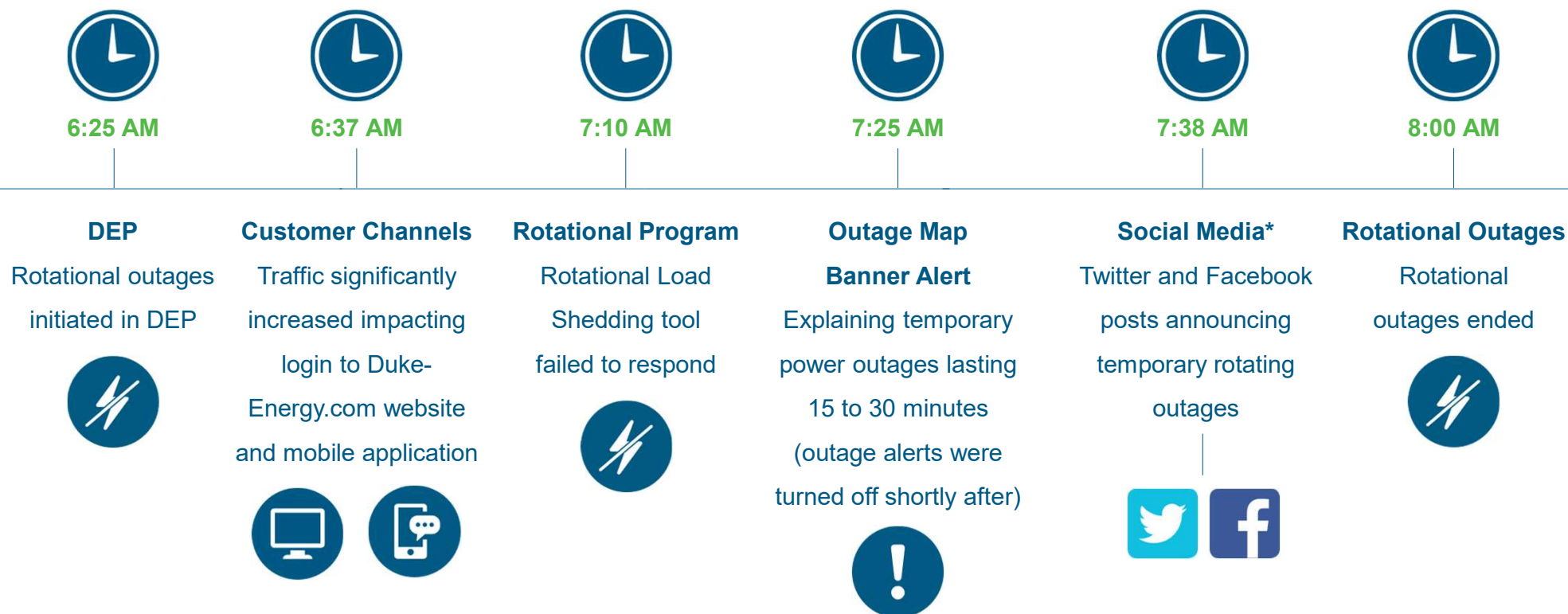


*~5% of customers restored after 4 p.m.

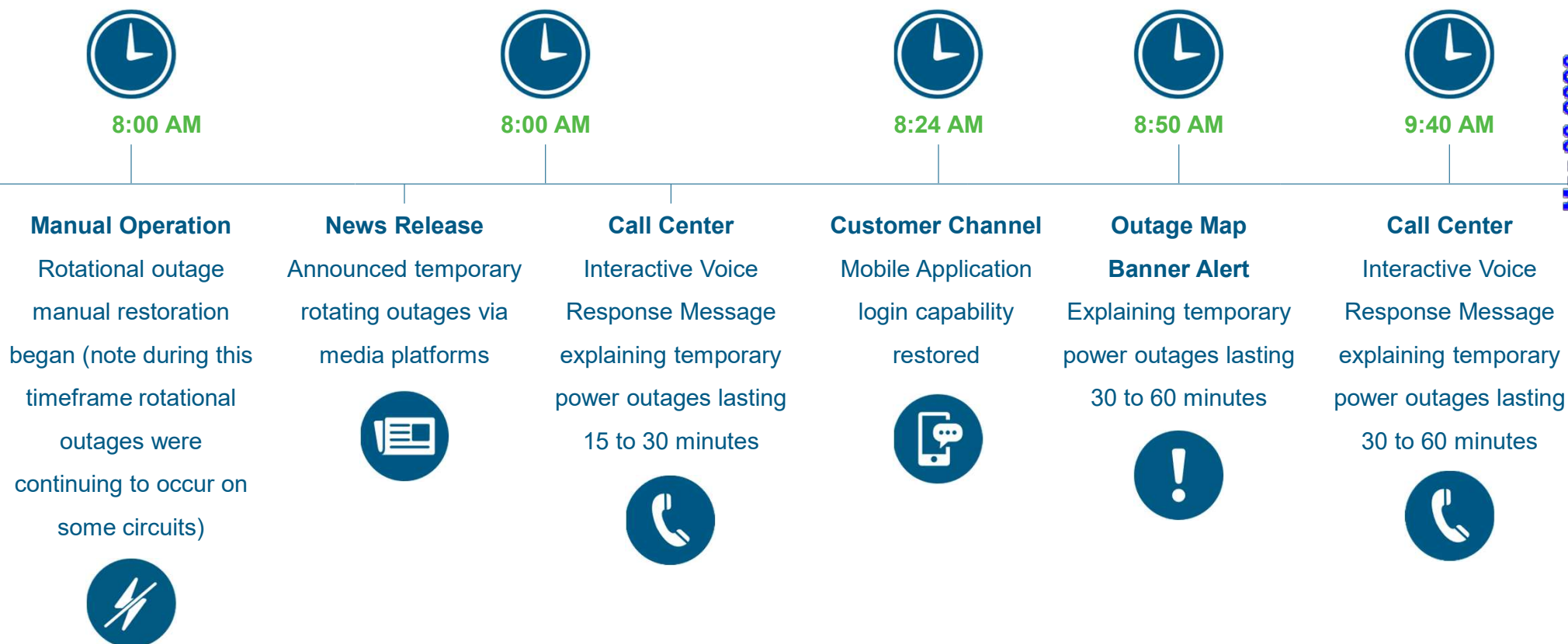
Carolinas Customer and Media Communications Timeline

Wednesday, 12/21	Thursday, 12/22	Friday, 12/23	Saturday, 12/24	
			 4:45 AM	 6:15 AM
SMS Text Messages and Calls*	Mass Messaging	Targeted Communications	News Release	DEC
Medical alert and critical healthcare notifications were sent in anticipation of winter wind event	Additional preparatory messages sent to customers ahead of wind event	Targeted and mass communications distributed regarding the impacts of the wind event	Requesting energy conservation	Rotational outages initiated in DEC
 				

*Appendix Slide 32



*Appendix Slide 33





10:36 AM



11:15 AM



12:45 PM



1:11 PM



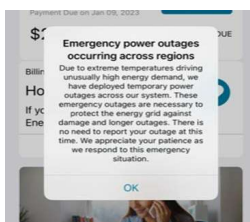
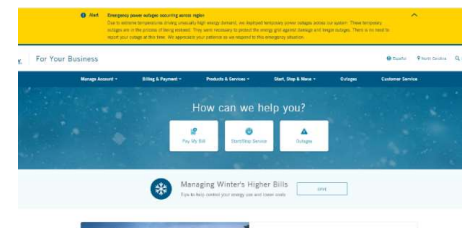
2:10 PM

Customer Channel

Duke-Energy.com

website functionality
restored**Duke Energy
Website**News banner
update explaining
emergency power
outages in progress**Emergency power outages in progress**

The extreme cold has placed an unusual strain on the energy grid. These brief, temporary outages are necessary to protect the system.

**Duke Energy
Mobile App***News banner update
explaining emergency
power outages in
progress**Social Media**Twitter and Facebook
post updates on power
restoration**Duke Energy
Website***Global Alert banner
update explaining
emergency power
outages in progress**Outage Map
Banner Alert****Explaining temporary
power outages were
deployed and in the
process of being
restored

*Appendix Slide 34; **Appendix Slide 35



3:31 PM

News Release*

Shared power restoration and continued energy conservation request



3:45 PM

Social Media

Twitter and Facebook post updates on power restoration and request for energy conservation



4:00 PM

Rotational Outages

Rotational outages manually restored



4:27 PM

Duke Energy Website

Global Alert banner update explaining emergency power outages in progress and asking for energy conservation



5:56 PM

Social Media

Asking customers to continue energy conservation efforts and thanking them for their cooperation and patience.



*Appendix Slide 36



6:00 PM

SMS Text Messages

Alert asking for energy conservation to help prevent need for further load shedding on Sunday



6:21 PM

Duke Energy Updates Website

Dedicated website updated during the day to inform customers about the emergency outages, FAQs and request for energy conservation



6:30 PM

SMS Text Messages and Calls

Alerts to ~2000 customers affected by wind event originally expected to be restored by midnight, would now extend until Dec. 25



6:58 PM

Outage Map Banner Alert

Explaining temporary power outages were in the process of being restored



7:01 AM

Outage Map Banner Alert

Update on power restoration efforts in progress



Sunday, 12/25



7:40 AM

Duke Energy

Mobile App*

Alert asking for energy conservation through 10 a.m. Dec. 26 and thanking customers for their efforts



3:46 PM

Social Media***

Twitter and Facebook appeal for ongoing energy conservation through 10 a.m.

Dec. 26



3:51 PM

News Release

Thanking customers and asking for ongoing energy conservation through 10 a.m.

Dec. 26



5:30 PM

SMS Text**

Alert asking customers to conserve energy through 10 a.m. Dec. 26 to help avoid additional rotating outages



6:42 PM

Duke Energy

Website*

Global alert banner asking for energy conservation through 10 a.m. Dec. 26 and thanking customers for their efforts



*Appendix Slide 37; **Appendix Slide 38; ***Appendix Slide 39

Monday, 12/26



11:12 AM

News Release

Duke Energy resumes normal power operations



12:44 PM

Duke Energy Updates Website

Thanked customers for conservation efforts, no further emergency outages anticipated



Duke Energy Updates

We successfully met the expected peak energy demand in the Carolinas on Sunday, Dec. 25, and Monday, Dec. 26, thanks in large part to customer efforts to conserve power after the weekend's winter blast placed an unusual strain on the energy grid. As a result of gradually warming temperatures and improved power availability, no additional conservation measures are needed from customers at this time.

The emergency power outages and requests for energy conservation are a rare occurrence – and a situation we always strive to avoid. Unfortunately, in this unique case, the temporary outages were necessary to protect the grid from more extensive damage, which would have meant lengthier repairs and longer, more widespread power outages.

Latest News



1:03 PM

Email*

Thanking customers for their conservation efforts and patience during the outages



3:30 PM

Duke Energy Updates Website

Explained that expected peak energy demand was met and thanked customers for conservation efforts



*Appendix Slide 40

Event Review and Lessons Learned



Enhancing situational awareness and coordinated internal response to events (generation, market, weather, etc.)

Addressing additional energy supply maintenance processes and equipment preparedness



Implementing customer communications improvements

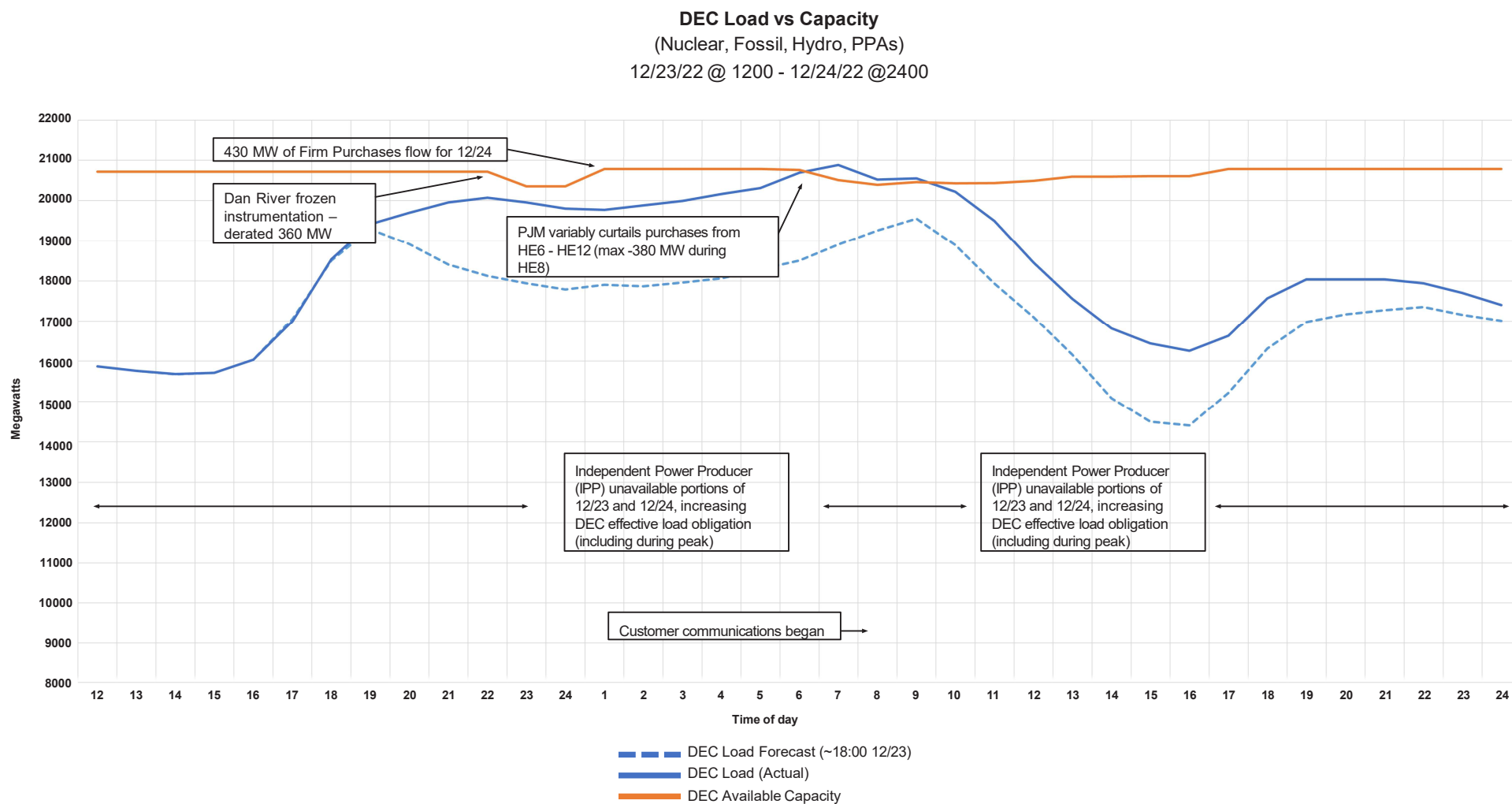
Addressing automated load shed technology issues

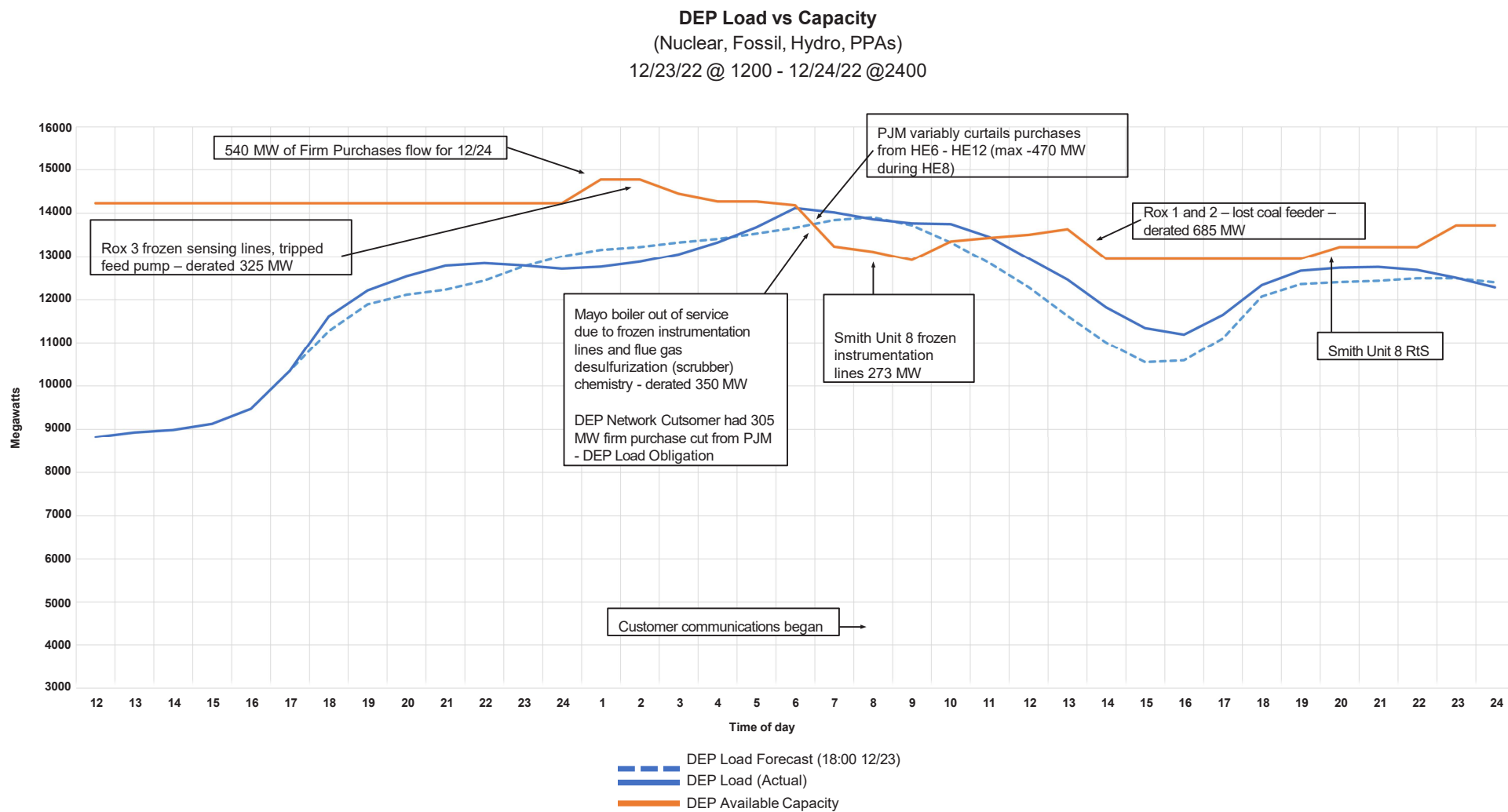


Questions?



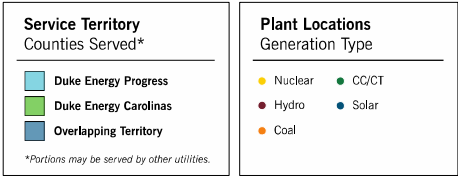
Appendix





Carolinas Service Territory Map

Carolinas Service Territory



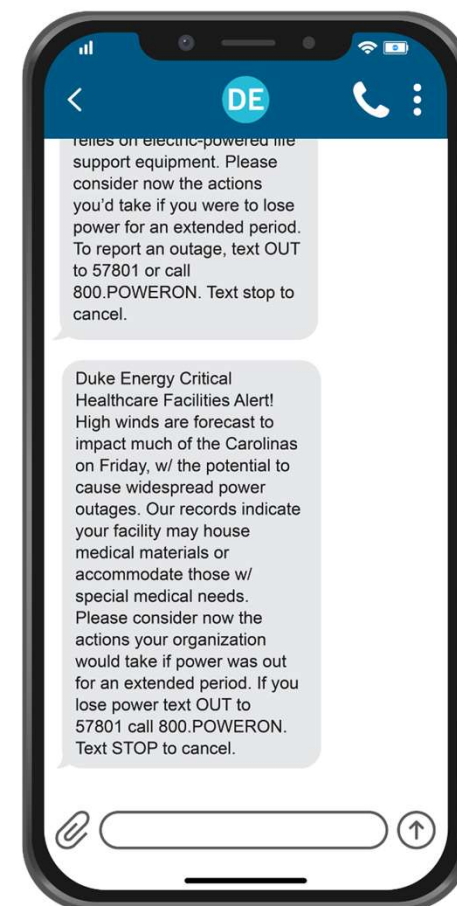
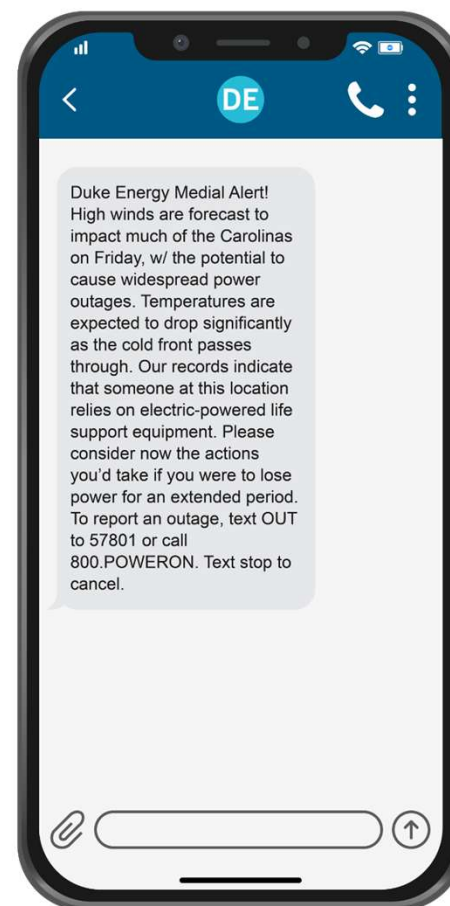
Communication Samples

Wednesday, 12/21



SMS Text Messages and Calls

Medical alert and
critical healthcare
notifications were sent
in anticipation of winter
wind event



Saturday, 12/24



Social Media

Twitter and Facebook
posts announcing
temporary rolling
outages



As extreme temps drive unusually high energy demand across the Carolinas we have begun short, temporary power outages. These emergency outages are necessary to protect the energy grid against longer, more widespread outages. We appreciate your patience. spr.ly/60163zi6k



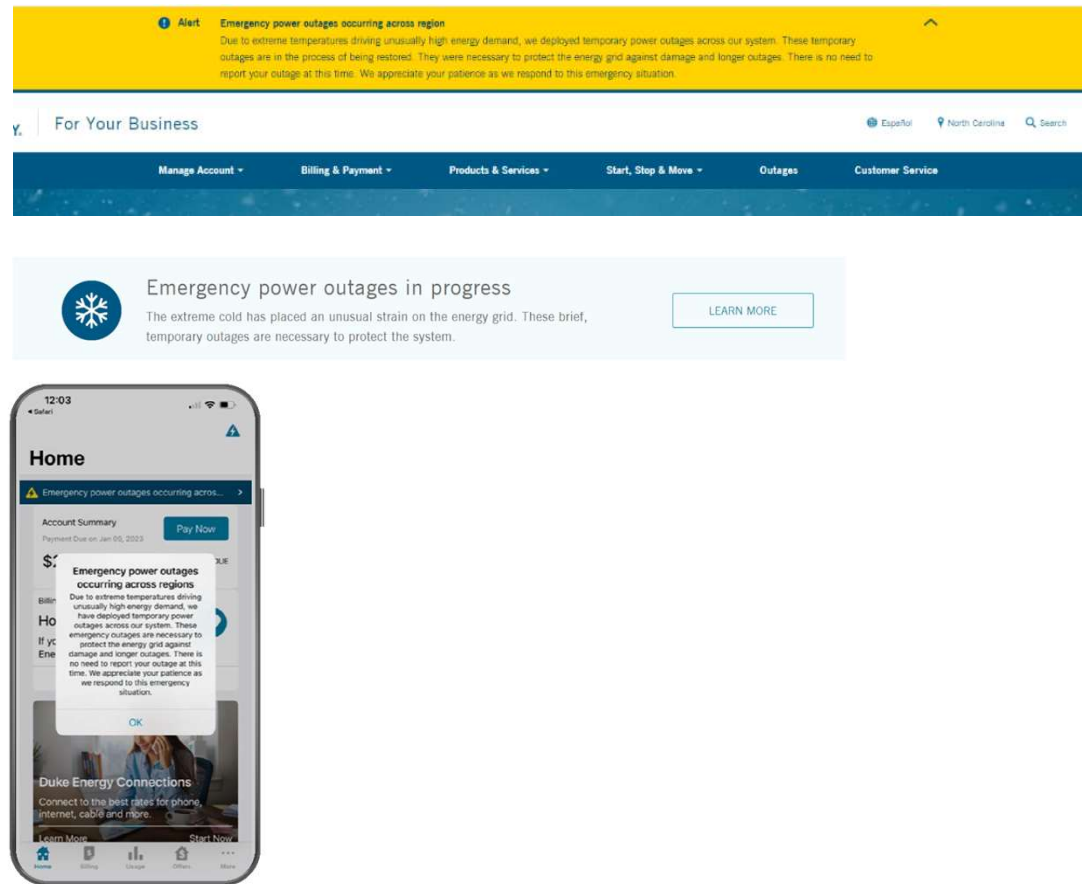
7:38 AM · Dec 24, 2022

Saturday, 12/24



Web & Mobile

Messages posted and
updated on the website
and mobile app



Saturday, 12/24



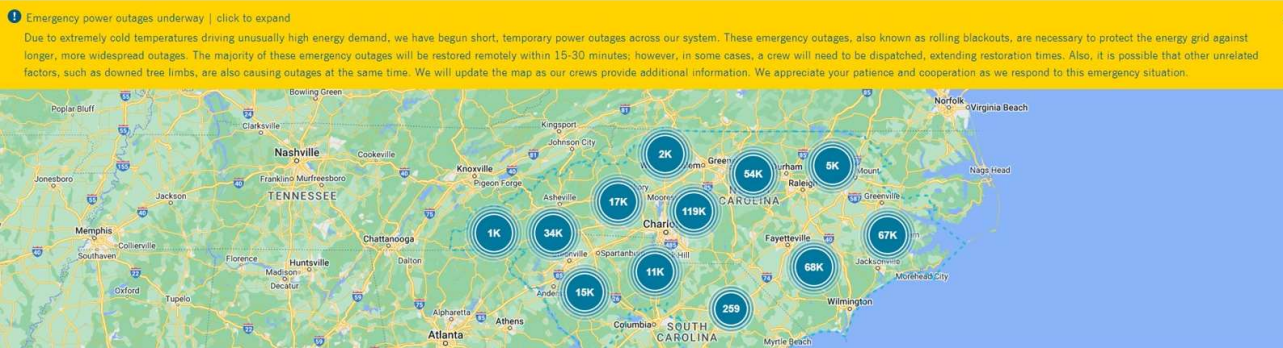
Outage Map

Banner Alert

Explaining temporary
power outages –
message updated
throughout the day



DUKE ENERGY Outages in the Carolinas



DUKE ENERGY Outages in the Carolinas



Saturday, 12/24



News Release

Shared power
restoration and
continued energy
conservation request



BUILDING A SMARTER ENERGY FUTURE[®]

News Release

24-Hour: 800.559.3853

Dec. 24, 2022

Duke Energy asks for continued energy conservation as power restoration continues following extreme winter temperatures

- **Saturday's rotating outages to protect overall energy grid concluded**
- **Crews continue to restore power from Friday's winter weather**

CHARLOTTE – Duke Energy asked customers to conserve energy usage as crews restored power following rotating outages in the Carolinas in response to high-energy demand Saturday morning.

Due to extreme cold weather causing increased demand and a shortage of available power in the Southeast region, the company was forced to interrupt service to about 500,000 customers to maintain the energy grid and prevent further disruptions. Power is currently being restored and should be completed today.

"This winter blast and customer demand has been unprecedented in recent history of

Saturday, 12/24



Web & Mobile

Continued to update
web-specific content to
add context to event
and reiterate
conservation tips



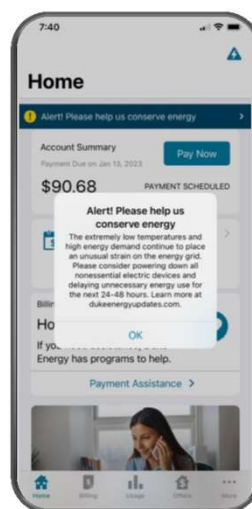
Duke Energy Updates

The extremely low temperatures and high energy demand continue to place an unusual strain on the energy grid. Please consider powering down all nonessential electric devices and delaying unnecessary energy use for the next 24-48 hours to help avoid rotating outages.

Customers can help us by taking the following steps:

- Select the lowest comfortable thermostat setting and bump it down several degrees whenever possible.
- Avoid using large appliances – this means appliances with a three-pronged plug, such as dishwashers, ovens and dryers – during high-demand periods like early winter mornings.
- Shift nonessential activities, like laundry, to late evening hours, when power demand is lower.
- Charge electric vehicles overnight.
- If you have an electric water heater, limit the use of hot water as much as possible.

Emergency power outages were implemented on Saturday, Dec. 24. [Learn more](#) about what led to these actions.



Saturday, 12/24 & Sunday, 12/25



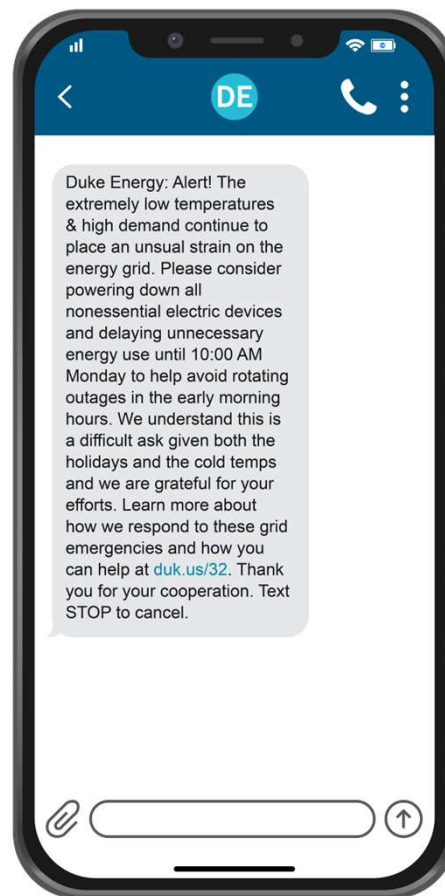
SMS Text Messages

Alerts asking for energy

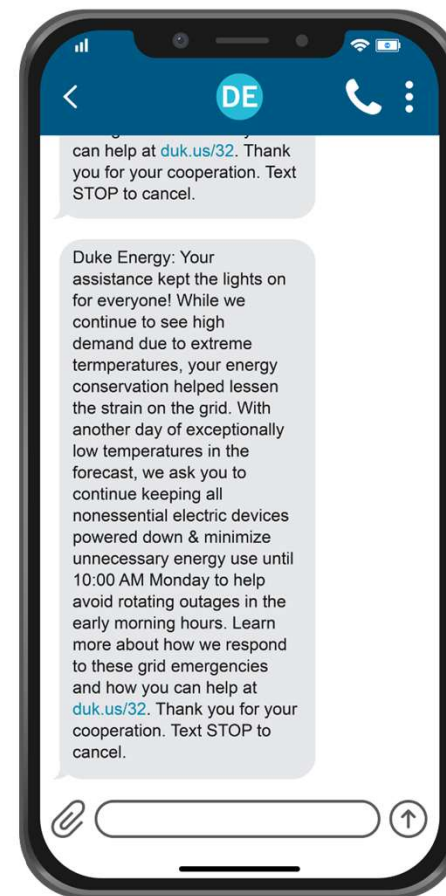
conservation



12/24



12/25




Sunday, 12/25



Social Media

Twitter and Facebook
appeal for ongoing
energy conservation



**Duke Energy**
December 24 · 🌐

UPDATE 12/25/22 at 3:30 PM - Extreme cold and high energy demand continues to strain the grid in the Carolinas. Please continue conserving energy and consider shutting nonessential lights until 10 a.m. Monday, Dec. 26 to avoid possible rotating outages. We are grateful for your efforts. Be safe. More info available: <https://news.duke-energy.com/.../duke-energy-thanks-customers...>

Extremely cold temperatures across the region have created extraordinary high demands on the power system. Crews are restoring customers impacted by emergency, temporary outages from this morning and remaining storm outages. We are asking customers to help by reducing electricity use as much as possible without sacrificing safety.

Please turn off non-essential electric lights and appliances and postpone using appliances like dishwashers and clothes dryers. Minor adjustments to thermostats and other measures can make a significant difference. We understand that cutting back on use of electricity can be inconvenient and uncomfortable, especially during the holidays. We appreciate the help and patience as we manage this unprecedented demand. Your support can make a difference in helping keeping power on for all.

**Duke Energy** 🟡
@DukeEnergy

Sunday, 12/26



**Press Release &
Email**
Customer
appreciation through
the winter weather
event



Whether you lost power – or conserved power – we are grateful to you.

For many across the Carolinas, 2022's holiday season has been uniquely difficult. First, the gale-force winds ravaging across the U.S. took out trees, power lines and poles – leaving many in the dark. And then record cold set in, driving up energy demand and further taxing the grid.

We are grateful to all of you for your patience and understanding. First to all who lost power from that initial storm and had to wait in the bitter cold. Second, to those who lost power during the emergency outages that followed and had to wait – sometimes longer than anticipated – for power to be restored. And finally, to all who generously delayed extra energy use during this critical period to help keep the lights on for others.

The emergency power outages and requests for energy conservation are a rare occurrence – and a situation we always strive to avoid. Unfortunately, in this case, the temporary outages were necessary to protect the grid from more extensive damage, which would have meant lengthier repairs and longer, more widespread power outages.

Again, our thanks to everyone – and especially to those who had to wait, sometimes for hours longer than planned over a holiday weekend, for their power to be restored. We have never been more grateful to serve this strong and generous community.



CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC February 27, 2023 PSCSC Allowable Ex Parte Briefing on Winter Storm Elliott, in Docket No. M-100, Sub 163, has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1st Class Postage Prepaid, properly addressed to parties of record.

This the 3rd day of March, 2023.



Jason A. Higginbotham
Associate General Counsel
Duke Energy Corporation
4720 Piedmont Row Drive/PNG 04C
Charlotte, NC 28210
Tel 704.731.4015
Jason.Higginbotham@duke-energy.com