STATE OF PLAY:
Factors Shaping the Public Power Landscape

ElectriCities Annual Conference
August 2021
Topics

Community Perspectives
Kelsey Lawhead, Manager, Educational Programs

Wholesale Power
Kathy Moyer, Vice President, Operations

Technology
Connell Price, Vice President, Information Technology

Legislative
Drew Elliot, Manager, Government Affairs

Competitive Analysis
Andy Fusco, Vice President, Member Services & Corporate Planning
COMMUNITY PERSPECTIVES
Kelsey Lawhead
Manager, Educational Programs
Where We Have Been…

In 2013, interviews were conducted with BOD and BOC members to obtain their views on the key issues facing NC Public Power

- **The Value of ElectriCities**: ElectriCities must clearly communicate the value that it delivers to its stakeholders.

- **The Value of Public Power**: ElectriCities must help members sell the value of public power to the general public.

- **Better Planning**: Lack of strategic planning/rate planning has historically hurt ElectriCities.

- **Leadership**: ElectriCities must establish a leadership position on emerging issues and new technologies.

- **Rates**: ElectriCities must be more proactive on rate planning and related communications to manage expectations.
What keeps our utility directors up at night?

1. Attracting & retaining qualified workers
2. Ability to keep up with technology (up from #5 in 2017)
3. Ability to compete with other utilities
4. External political issues
5. High Rates

Sources 2021 ElectriCities Utility Assessment
Value of Public Power

*Members are looking to ElectriCities to help communicate & define the Value of Public Power*

**Good News**

We know our members ARE providing value. Through ElectriCities “Economic Benefit Study” program, we have documented a research-based financial value for six members. Across those members:

*The total estimated annual benefit: $23,120,095*

**Less Good News**

We are trailing our state-wide competition in the customer’s perspective on Value for the cost of electricity. (8 points behind Co-ops & 1 point behind IOU)
Customers are becoming more engaged with energy, expecting new services and more sustainable energy generation

- This year's customer survey again demonstrated, over half of customers want more engagement with their utility.
- Most sought-after programs:
  - Customer education
  - Solar programs
  - Rebates

Modern trends for electric customers
- Consumers are making the connection between smart energy and slowing climate change
- Consumers across all segments are interested in smart energy-enabled products
- Lower-income consumers are keenly interested in smart energy and the environment
- Consumers need more education on how to assess a program or technology

Sources: 2021 State of the Consumer. Atlanta, GA; Smart Energy Consumer Collaborative, 2021
Consumer Engagement Trends

- Smart Home is no longer a distant future.
- Residential solar capacity has grown over **800%** since 2013
- EV Adoption has grown over **300%** since 2010
"I really am not being hyperbolic when I say that, as CEOs, this is the challenge of our time. Because for all the talk about the worries over digitization, transformation and disruption, the best-laid plans to address those issues can be derailed by failures in talent acquisition and talent retention."

--Johnny C. Taylor, Jr.
President, Society for Human Resources Management
Digitization is proceeding rapidly in the Energy industry, leading to demand for digital skills in both new and traditional jobs.
Workforce Skills Gap

Digitization is proceeding rapidly in the Energy industry, leading to demand for digital skills in both new and traditional jobs.
Competition for Talent

Competition will increase across industries for skills in short supply
Demand for key talent will continue to drive wage competition

Historical Hourly Rate for Journey Lineworkers

Sources:
Employee Expectations

Gen Z and Young Millennials (1989-2001)
- Purpose-driven
- Seek organizations with values like their own
- Value authenticity
- Desire meaningful work
- Entrepreneurial
- Embrace and expect diversity and inclusivity

83% of employees identify a hybrid "Productive Anywhere" model as being most optimal – 64% when sampling utility employees specifically

39% of employees would consider quitting if their employer was not flexible about remote work

Workplaces that support equity, transparency, flexibility and purpose take top marks among millennial employees, according to the 2021 Fortune Best Workplaces for Millennials™ survey.

-Great Place to Work Institute

Sources: wespire.com; Great Place to Work Institute; Accenture Future of Work Study 2021; May 2021 Morning Consult Poll
Turnover Tsunami

- More than 50% of employees are projected to look for new employment in 2021

- Voluntary turnover is replacing retirement concerns in Energy organizations, especially in the first 5 years when many employees will leave:
  - 65% of lineworkers
  - 58% of engineers
  - 57% of employees ages 23-37

Sources: [www.shrm.org](http://www.shrm.org); Center for Energy Workforce Development Gaps in Energy Surveys
Turnover Tsunami

- Unplanned turnover is expensive and time consuming
  - NC Public Power takes from 6-12 months to replace an experienced lineworker and up to 6 months to replace an engineer

### National Energy Voluntary Turnover

<table>
<thead>
<tr>
<th>Year</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>10%</td>
</tr>
<tr>
<td>2017</td>
<td>14%</td>
</tr>
<tr>
<td>2019</td>
<td>13%</td>
</tr>
</tbody>
</table>

### NC Public Power Voluntary Turnover

<table>
<thead>
<tr>
<th>Category</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry &amp; Apprentice Lineworkers</td>
<td>16%</td>
</tr>
<tr>
<td>Total Lineworkers</td>
<td>21%</td>
</tr>
<tr>
<td>Engineers</td>
<td>9%</td>
</tr>
</tbody>
</table>

Sources: ElectriCities 2020 Utility Assessment Survey per year average 2018-2020
WHOLESALE
POWER SUPPLY
Kathy Moyer
Vice President, Operations
Traditional Wholesale Power Supply

On average wholesale power makes up 70% of your annual electric fund costs.
Wholesale Power Supply Trends Towards Decarbonization

U.S. Electricity Generation From Selected Fuels

Source: U.S. Energy Information Administration, Annual Energy Outlook 2021
Since 2018 we have continued to see the shift to renewables and clean energy. In NC renewables increased by 8% in two years and 3% nationally.

Nuclear has remained stable and in North Carolina has captured its top spot as the largest source of North Carolina’s electricity generation.

Coal has continued to decline with plant retirements and some natural gas plant build has stalled.

Wholesale Power Supply Transformation in North Carolina

Source: NC and US EIA; NCEMPA and NCMPA1 based on 2020 Rating Agency Questionnaire
Wholesale Power Supply
The Decentralized Interactive Grid

Where do Distributed Energy Resources (DERs) fit in?

Distributed Energy Resources (DERs) are shown in red.
Wholesale Power Supply
The Decentralized Interactive Grid

Where do Distributed Energy Resources (DERs) fit in?

Past
Traditional Power Grid

Emerging
The Energy Cloud

Central, One-Way Power System, focused on Safe, Reliable and Affordable power

Distributed, Cleaner, Two-Way Power Flows, Mobile energy resources, new digital Energy Cloud platforms

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### Wholesale Power Supply The Decentralized Interactive Grid Taking it Further into the Future

<table>
<thead>
<tr>
<th>INTEGRATED DER</th>
<th>TRASPORATION 2GRID</th>
<th>BUILDING2GRID</th>
<th>INTERNET OF ENERGY</th>
<th>TRANSACTIVE ENERGY</th>
<th>SMART CITIES</th>
<th>NEURAL GRID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated DER Platforms could support more than $3-4 trillion in value within the next two to three decades.</td>
<td>By 2020, more than 6,000 GWh of electricity is expected to be consumed by plug-in EVs annually in the US, giving rise to Transportation 2Grid.</td>
<td>means leveraging more than $50 billion of anticipated investments in behind-the-meter integrated energy assets for residential and commercial customers within the next five years.</td>
<td>More than $1 trillion in projected cumulative global revenue is at stake over the next decade across Internet of Energy platforms.</td>
<td>Transactive energy platforms are expected to see billions of dollars in software-related investments, technology integration and fees by 2030.</td>
<td>More than $250 billion in cumulative investments focused on smart cities energy projects alone are anticipated through 2030.</td>
<td>Investments in neural grid infrastructure and emerging technologies through 2030 are expected to exceed $700 billion.</td>
</tr>
</tbody>
</table>

**ENERGY CLOUD ORCHESTRATOR**

…and orchestrators will be the fastest growing and most profitable business model category across the utility value chain by leveraging assets and customer networks.

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Wholesale Power Supply Future Grid is Sustainable and Resilient

Customers expect Wholesale Power Supply to adapt and recover to Weather Events and Man-made Threats

More customer education is needed to integrate customer technologies into Wholesale Power Supply as a resource.

- Reliable
- Renewable
- Clean
- Affordable

- Hardened Infrastructure
- Decentralized
- Adaptable
- Autonomous

Sustainable

Resilient
STATE OF PLAY:
Technology
Connell Price
VP, Information Technology
Technology Is Trending Forward…

**Past**
Traditional Power Grid

Central, One-Way Power System, focused on Safe, Reliable and Affordable power

**Emerging**
The Energy Cloud

Distributed, Cleaner, Two-Way Power Flows, Mobile energy resources, new digital Energy Cloud platforms
Technology Predictions Are Now Occurring…

INTEGRATED DER
Integrated DER Platforms could support more than $3-4 trillion in value within the next two to three decades.

TRANSPORTATION 2GRID
By 2020, more than 6,000 GWh of electricity is expected to be consumed by plug-in EVs annually in the US, giving rise to Transportation 2Grid.

BUILDING2GRID
Building2Grid means leveraging more than $50 billion of anticipated investments in behind-the-meter integrated energy assets for residential and commercial customers within the next five years.

INTERNET OF ENERGY
More than $1 trillion in projected cumulative global revenue is at stake over the next decade across Internet of Energy platforms.

TRANSACTIVE ENERGY
Transactive energy platforms are expected to see billions of dollars in software-related investments, technology integration and fees by 2030.

SMART CITIES
More than $250 billion in cumulative investments focused on smart cities energy projects alone are anticipated through 2030.

NEURAL GRID
Investments in neural grid infrastructure and emerging technologies through 2030 are expected to exceed $700 billion.

ENERGY CLOUD ORCHESTRATOR
…and orchestrators will be the fastest growing and most profitable business model category across the utility value chain by leveraging assets and customer networks.

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Necessary Technologies

Emerging technologies lean heavily on cloud services and data analytics to define new customer preferences, segmentation and analysis.
The Smart City and the Smart Customer
Where is Technology Taking Us…?


The Smart City and the Smart Customer
Where is Technology Taking Us…?

The Smart City and the Smart Customer
Where is Technology Taking Us…?

**The Challenge:** Can we create a digital (virtual) community experience like our original hometown model?


#ECAC21
New Forms of Digital Customer Engagement Become Necessary

*Internal Influences*

- Skillsets are required to be more tech savvy
- Customer Service functions are expected to be more virtual
The Virtual Influence

- Virtual local communities
- Virtual workplaces
- Higher degree of skilled (technology) workers
- More load for broadband

How have you branded your municipality’s virtual community?

New Forms of Digital Customer Engagement Become Necessary

*External Influencers*
- COVID Pandemic
- Malicious Cyber Threat Actors
The Municipality’s Challenge: Engaging Customers

The COVID-19 crisis has accelerated the digitization of customer interactions by several years.

Average share of customer interactions that are digital, %

<table>
<thead>
<tr>
<th>Region</th>
<th>Adoption acceleration</th>
<th>Pre-crisis</th>
<th>COVID-19 crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>3 years</td>
<td>32</td>
<td>53</td>
</tr>
<tr>
<td>Europe</td>
<td>4 years</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>North America</td>
<td>3 years</td>
<td>18</td>
<td>65</td>
</tr>
</tbody>
</table>

*Years ahead of the average rate of adoption from 2017 to 2019.

Malicious Cyber Threat Actors

- **February 2021**: Florida water system attack
- **May 2021**: Colonial Pipeline attack

Closer to home
North Carolina cyber attacks

- Chatham County (October 2020 Ransomware)
- Rocky Mount (August 2020 Ransomware)
- Haywood County Schools (August 2020 Ransomware)
- Durham City & County (March 2020 Ransomware)
- Lincoln County (August 2019 Ransomware *2nd attack in 1 year)
- Anson County (July 2019 Ransomware)
- Greenville, NC (April 2019 Ransomware)
- Orange County (March 2019 Ransomware *3rd attack in 6 years)
- Davidson County (February 2018 Ransomware)
- Mecklenburg County (December 2017 Ransomware)

1,644 North Carolina data breaches in 2020 - N.C. Attorney General
Malicious Cyber Threat Actors

- Criminals
- Hacktivists
- Criminal Hackers
- Competitors
- Foreign Nations
- Disgruntled Employees

Mass Untargeted — Targets Individuals
Malicious Cyber Threat Actors

Types of Cybersecurity Threats

- Malware
- Phishing
- Spear Phishing
- Man in the Middle Attack
- Denial of Service Attack
- SQL Injection
- Zero-day Exploit
- Advanced Persistent Treats
- Ransomware
- DNS Attack
Where Is The Municipality In All Of This?

Have utility companies figured out the new-age consumer?

The Municipality Must Prepare To Answer The Challenge

*Understanding the changing age demographics and preferences.*

What identifies each generation?

- **Z Generation** (under 23 years)
  - Critical and selective
  - Digital natives
  - Self-taught online

- **Y Generation** (24-34 years)
  - Culture of interactivity
  - Keen on labor mobility
  - Highly aware and vocal about social issues

- **X Generation** (35-45 years)
  - Open-minded regarding diversity
  - World citizens
  - Competitive

- **Baby Boomers** (46-60 years)
  - Great dedication to work
  - Ability to forge a career
  - Commitment

- **Veterans** (over 61 years)
  - Extensive experience
  - Loyalty to the company
  - Appreciate sacrifice

[https://wmkagency.com/blog/generation-marketing-how-to-reach-consumers-at-every-age](https://wmkagency.com/blog/generation-marketing-how-to-reach-consumers-at-every-age)
The Municipality Must Prepare To Answer The Challenge

Understanding the changing age demographics and preferences.

Number of people using social media platforms, 2004 to 2018

Estimates correspond to monthly active users (MAUs). Facebook, for example, measures MAUs as users that have logged in during the past 30 days. See source for more details.

https://wmkagency.com/blog/generation-marketing-how-to-reach-consumers-at-every-age
The Municipality Must Prepare To Answer The Challenge

Understanding the changing age demographics and preferences.
Attracting the tech savvy next generation consumer

https://m.economictimes.com/topic/tech-savvy-consumers/4
The Municipality Must Prepare To Answer The Challenge

Digitizing your community presence...
LEGISLATIVE AND REGULATORY FACTORS:
How Industry and Technological Change is Enabling and Accelerating Regulatory and Legislative Trends (and Vice-versa)

Drew Elliot
Manager, Government Relations
Overview

- Setting the Stage 1: The Traditional Utility Model and its impact on Public Power
- Setting the Stage 2: Technological Advancements
- Trends threatening the traditional model
- Trend Analysis: Decarbonization
- Trend Analysis: Distributed Energy Resources
- Trend Analysis: Cybersecurity
- The Opportunity for Public Power
Setting the Stage 1: The Traditional Utility Model

- Generation
- Transmission
- Distribution

- Industrial
- Commercial
- Residential
Setting the Stage 1: The Traditional Utility Model

Less Than 1 Outage Per Year  |  Power On 99.98% Of The Time
Setting the Stage 1: The Traditional Model’s Impact on Public Power

- NCEMPA
- NCMPA1

AMOUNTS SHOWN IN 2020$
Setting the Stage 2: Technological Advancements

- Broadband Internet
- Automated Meter Infrastructure
- Battery Energy Storage Systems
- Off-shore Wind
- Small Modular Nuclear
- Solar Photovoltaic
- Electric Vehicles
- Distributed Energy Resources
- Smart Home/Smart Building
Trends Threatening The Traditional Model

- Move away from fossil fuels
  - Reasons to replace coal
  - Anti-pipeline strategy
- Federalization
- Customer Choice movements
  - Mega-firms pressuring to access wholesale markets
  - Green choice programs
- Waning political influence of investor-owned utilities
- Corporate sustainability goals
Trends Threatening The Traditional Model

Figure 7: Flow of Money into Sustainable Funds vs. Utility Adoption of Carbon-Reduction Targets

Source: Smart Electric Power Alliance, 2021. With data adapted from Morningstar.15
Trend Analysis: Decarbonization

- How fast can/should the U.S. decarbonize?
- Who will make the decisions?
**Trend Analysis: Decarbonization**

<table>
<thead>
<tr>
<th>Proponent/Plan</th>
<th>Interim Goal</th>
<th>Final Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov. Cooper - E.O. 80</td>
<td>70% by 2030</td>
<td>Carbon-neutral by 2050</td>
</tr>
<tr>
<td>Duke Energy</td>
<td>50% by 2030</td>
<td>Net-zero by 2050</td>
</tr>
<tr>
<td>N.C. Electric Co-ops</td>
<td>50% by 2030</td>
<td>Net-zero by 2050</td>
</tr>
<tr>
<td>Clean Future bill (Congress/Biden)</td>
<td>80% by 2030</td>
<td>Net-zero by 2035</td>
</tr>
</tbody>
</table>
Trend Analysis: Distributed Energy Resources

**DER Issues**
- Penetration accelerating
- Ownership and control
- Cost allocation
- Data
Trend Analysis: Cybersecurity
The Opportunity for Public Power
STATE OF PLAY:
Competitive Positioning

Andrew Fusco
VP, Member Services and Corporate Planning
Overview

- Dimensions of Competitiveness
  - Retail rates
  - Reliability
  - Technology
  - Workforce
  - Sustainability

- Identify gaps

- SWOT Analysis
Dimensions of Competitiveness: Retail Rates

**Reality**

![Bar chart showing residential rates for different entities like Asheville, DEC, Handmade, Strike, Energy United, DEP, NCEMA, Wake, Union, and NCEMA 1.]
Dimensions of Competitiveness: Retail Rates

Perception (residential customers)

“Please rate your utility on providing good value for the cost of electricity.”

“Would you say the prices you pay to your utility are higher, lower, or about the same as surrounding utilities?”

<table>
<thead>
<tr>
<th>Dimensions of Competitiveness: Retail Rates</th>
<th>Coop Customers</th>
<th>IOU Customers</th>
<th>Public Power Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Positive Impressions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Dimensions of Competitiveness: Reliability

**Reality**

<table>
<thead>
<tr>
<th></th>
<th>Avg. Length of Outage/ Customer (Min.)*</th>
<th>Avg. Number of Outages/ Customer*</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC Public Power</td>
<td>56.51</td>
<td>0.75</td>
</tr>
<tr>
<td>Coops</td>
<td>165.81</td>
<td>1.42</td>
</tr>
<tr>
<td>Duke Energy Progress</td>
<td>151.60</td>
<td>1.32</td>
</tr>
<tr>
<td>Duke Energy Carolinas</td>
<td>183.20</td>
<td>1.11</td>
</tr>
<tr>
<td>Dominion</td>
<td>128.20</td>
<td>1.09</td>
</tr>
</tbody>
</table>

* Averaged over the period from 2016 to 2020
Dimensions of Competitiveness: Reliability

Perception

“Please rate your utility on providing reliable electric service.”

Percent Perceiving High Reliability

- NC Public Power Customers
- IOU Customers
- Coop Customers

<table>
<thead>
<tr>
<th>Year</th>
<th>Healthy</th>
<th>NC Public Power</th>
<th>IOU Customers</th>
<th>Coop Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>92%</td>
<td>90%</td>
<td>93%</td>
<td>91%</td>
</tr>
<tr>
<td>2018</td>
<td>94%</td>
<td>91%</td>
<td>93%</td>
<td>92%</td>
</tr>
<tr>
<td>2019</td>
<td>92%</td>
<td>90%</td>
<td>93%</td>
<td>92%</td>
</tr>
<tr>
<td>2020</td>
<td>94%</td>
<td>91%</td>
<td>93%</td>
<td>92%</td>
</tr>
<tr>
<td>2021</td>
<td>96%</td>
<td>92%</td>
<td>93%</td>
<td>94%</td>
</tr>
</tbody>
</table>
Dimensions of Competitiveness: Technology

**Reality**

![AMI Meters as a Percentage of Total Meters](chart.png)

- NC Coops, 88%
- National Municipal, 60%
- NC IOU, 56%
- NC Public Power, 35%
- NCEMPA, 28%
- NCMPA1, 5%

*AMI Meters as a Percentage of Total Meters for 2017 and 2020.*
Dimensions of Competitiveness: Technology

Perception

“Please rate your utility on providing services and products that I expect from a modern utility.”
Dimensions of Competitiveness: Workforce

Perception
Dimensions of Competitiveness: Workforce

Reality
## Dimensions of Competitiveness: Environmental Sustainability

### Reality

<table>
<thead>
<tr>
<th>CO2 Emissions Rate (lbs./kWh)</th>
<th>NC Public Power</th>
<th>NCMPA1</th>
<th>NCEMPA</th>
<th>Duke Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCMPA1</td>
<td>0.0035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCEMPA</td>
<td>0.5625</td>
<td></td>
<td></td>
<td>0.5635</td>
</tr>
<tr>
<td>Duke Energy</td>
<td>0.5635</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Rebates for Solar Panels     | None            | None   | Yes, up to $6,000 per/install |
| Net Metering/Billing         | 11%             | 23%    | Yes                           |
| Time Varying Rate Plans      | 8%              | 69%    | Yes                           |
| Community Solar              | 1%              | 46%    | Yes                           |
Dimensions of Competitiveness: Environmental Sustainability

**Perception**

Q: How important is renewable energy to you?

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Important</td>
<td>78.2%</td>
</tr>
<tr>
<td>Total Unimportant</td>
<td>14.8%</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>7.0%</td>
</tr>
</tbody>
</table>
Dimensions of Competitiveness: Environmental Sustainability

Perception

“Please rate your utility on if you view them as a responsible steward of the environment.”
Dimensions of Competitiveness: Environmental Sustainability

**Perception**

30% of Fortune 500 Companies have set CO₂ emissions reduction targets*

Source: 2020 Natural Capital Partners
Spend Money Wisely…But You Need To Spend It

*Investing in the upkeep of your system is a good investment. Don’t let it fall into disrepair.*
Spend Money Wisely…But You Need To Spend It

High system losses have a negative impact on your rate competitiveness. Minimize them.

Distribution System Losses

All Members
National Public Power
National Utility Average
Spend Money Wisely…But You Need To Spend It

*Pay competitively. You get what you pay for.*
Spend Money Wisely…But You Need To Spend It

Other must have investments:

- **Technology** – your customers want it
- **Cyber Security** – municipalities are targets
- **Safety** – you can’t afford not to
Customer Opinion Matters

“Please rate your overall satisfaction with your electric utility.”

“If given a choice, what is the likelihood that you would continue purchasing from your current electric utility?”

<table>
<thead>
<tr>
<th>Year</th>
<th>NC Public Power Customers</th>
<th>IOU Customers</th>
<th>Coop Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>70%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>2018</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
</tr>
<tr>
<td>2019</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>2020</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>2021</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of Customers that Would Stay with Current Electric Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>50%</td>
</tr>
<tr>
<td>2019</td>
<td>55%</td>
</tr>
<tr>
<td>2020</td>
<td>60%</td>
</tr>
<tr>
<td>2021</td>
<td>65%</td>
</tr>
</tbody>
</table>
Customer Opinion Matters

Customer Awareness of Public Power

51.9% residential customers are aware their utility is municipally owned (Compared to 57.0% in 2020)

64.4% commercial customers are aware their utility is municipally owned (Compared to 66.0% in 2020)
Strengths

“Public Power” is a proven successful business model

General Resiliency

Trends provide opportunity for wholesale and retail rates

Favorable customer perception in several areas

NCMPA1 CO₂ emissions provide sustainability opportunities
Weaknesses

- Need succession of visionary leaders and long-term plan
- Competing objectives within a municipality
- Limited opportunities for economies of scale in small to mid-sized members
- Lack of customer awareness of Public Power and its benefits
- Under investment in electric utility
- Lagging competitors in customer offerings
Opportunities

- Turn customers into advocates
- Develop new customer programs related to clean energy
- More collaboration among our members
- When surpluses exist, lower rates or invest appropriately
- Mid-term flexibility with power supply options
Threats

- Low customer opinion results in regulatory risks
- Risk of adverse legislation and regulations
- Technology threats (obsolescence and cyber)
- Lack of customer loyalty
- Competitors on the move
The Opportunity for Public Power
THANK YOU

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