Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation (version 2)

Rural Electric Management Development Council

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Table of Contents

| Executive Summary | 4 |
|---|----|
| Introduction to the Rural Electric Management Development Council (REMDC) | 6 |
| Acknowledgments | 8 |
| INDUSTRY SHIFTS | 9 |
| The Smart Home and IOT | 9 |
| Expanding Member Expectations | 12 |
| Trusted Energy Advisor | 15 |
| Increased Regulatory Involvement/Impact | 19 |
| Beneficial Electrification | 21 |
| Workforce | 24 |
| The Evolution of Board Governance and Operations | 28 |
| Transmission | 32 |
| Generation Market Forces | 35 |
| Gas & Electric Coordination | |
| Virtual Power Plants | 42 |
| Billing Models | 47 |
| Data Analytics and AI | 49 |
| Increasing Financial Needs | 51 |
| Physical and Cyber Security | 53 |
| Risk Management | 56 |
| Supply Chain | 59 |
| Reliability | 61 |
| The Need for Broadband and Communication Networks | 64 |
| Megaloads | 67 |
| BUSINESS FUNCTIONS | 70 |
| CEO/Board Functions | 70 |
| Billing and Collections | 75 |
| Communications and Marketing | 77 |
| Community/Economic Development | 79 |

| Cyber and Physical Security | 81 |
|-----------------------------------|-----|
| Data Analytics | 84 |
| Data Communications | 85 |
| Energy Services | 86 |
| Engineering and Planning | 88 |
| Finance and Accounting | 91 |
| Human Resources | 94 |
| Information Technology | 96 |
| Key Accounts | 98 |
| Legal/Risk Management | |
| Member Services | |
| Operational Technology (OT) | |
| Operations | |
| Power Supply | |
| Procurement | 111 |
| Regulatory/Legislative Affairs | |
| Safety | 116 |
| Strategic Planning and Leadership | 117 |
| Subsidiary Business | 119 |
| Training/Employee Development | 121 |
| CONCLUSION | 123 |

Executive Summary

Cooperation among Cooperatives

A key attribute that defines successful electric cooperative leaders is simply openness to new ideas. Cooperatives are unique in that they do not compete with one another and enjoy the opportunity to share ideas, lessons learned, and operational success stories. It is in that spirit that the "Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation" white paper was created in 2019 and revised in 2024.

The Need for New Concepts and Ideas

The electric industry will always be in a state of transition and, while there are many factors that impact the evolution of electric cooperatives, a number of key factors driving major change to existing operations or shifting cooperative resources to an entirely different and unique direction. A few of the major disruptors in today's environment are regulatory and political pressure, power supply, member expectations, and connectivity.

Political actions have set the stage for a significant disruption in the industry to occur. This disruption is primarily driven by the sheer amount of federal and state dollars flowing into renewables and other distributed energy resources, DER. As cooperatives identify how this will impact the business model, they must also be concerned about market limitations on firm power generation, availability, and the increasing cost impact to members. The uncertainty of how this will work together in harmony, the "new" concepts and complexities, and the timing of it all leaves cooperatives with the challenge (or opportunity) to figure it out on their own by more aggressively (or passively) evaluating what it means to become a distribution system operator (DSO).

There is also a growing expectation from members and their elected officials for co-ops to provide extremely reliable electric service during normal operations and to minimize downtime associated with storms and other disruptions, offer nontraditional products and services, and have information pushed to/from them through various mediums. This change must be managed in a workplace environment that is drastically different from five years ago, much less 50 years ago. The unifying factor among all areas of disruption and change always involves real-time connectivity to all devices, be it the meter, reclosers or distributed energy resources of all types.

The Authors and Why

The Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation (version 2) white paper is a collection of concepts, ideas, and considerations from thought leaders within the electric cooperative space who are also members of the Rural Electric Management Development Council (REMDC). This group of leaders, from varying sizes of cooperatives, is

motivated to solve the problems of today and predict the industry shifts of tomorrow with a goal of driving collaboration and conversation to position cooperative leaders to be successful.

The Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation (version 2) White Paper

The paper is divided into two primary sections, one being "Industry Shifts" and the other as "Business Functions." Each section attempts to highlight key considerations for cooperative leaders and Boards of Directors/Trustees.

The first section, Industry Shifts, focuses on new ideas and perspectives that arise from the major disruptors. The topics are structured with a leading overview of each idea or concept, followed by a bulleted calls to action list and concluding with a more detailed summary of each call to action.

The second section, Business Functions, attempts to note specific areas within the cooperative organization that might deserve targeted focus in addressing the industry shifts as well as in addressing current and future issues. In larger cooperatives, this could require a specific department or staff person responsible for the area. In smaller cooperatives, this may result in a role that encompasses multiple functions within a singular job role. The separate functions are briefly described in an overview, followed by bulleted key considerations for organizations to consider and a final summary describing the key considerations in context of the current environment.

Use the Information

The REMDC group hopes that you find the information thought-provoking and valuable. All ideas contained in the paper come from experienced leaders in the utility industry. A great way to spread this information is to use it! Many cooperatives have taken previous REMDC whitepapers and used them to help guide thought and categorize concepts for strategic planning purposes. Take time, review the information with an open mind and consider what tomorrow may bring to your cooperative. Let's have a conversation!

Introduction to the Rural Electric Management Development Council (REMDC)

The function and purpose of the Rural Electric Management Development Council (REMDC), since its inception in 1958, has been to explore ways to improve the effectiveness of management at rural electric cooperative systems. Each of the rural electric cooperative systems that are members of the REMDC acquired that membership by being able to demonstrate they were not only practicing modern management, but they were willing to share their successes and failures with others and contribute to research in finding ways to improve the practice of management at rural electric systems.

The REMDC is comprised of about 65 rural electric cooperative systems from across the country from the Pacific Northwest to Florida—and continues to add members that wish to experience the benefits of being a part of the REMDC organization. Member systems range in size from fewer than 5,000 members, to systems with well over 300,000 members. The members of the REMDC serve over 1 million consumers nationally. All the members of the REMDC are also members of the National Rural Electric Cooperative Association (NRECA).

The REMDC membership reflects the size and demographic profile of the rural electric cooperative program of the 21st century. We feel strongly that the challenges to today's rural electric cooperative systems are best met by a highly skilled team comprised of a professional management staff and CEO, board members who understand and are trained in the practice of their trusteeship responsibilities, and a competent, informed and motivated work force who have a vision and commitment to meet the challenges of the rapidly changing business climate in which rural electric cooperatives systems must function.

Today's rural electric cooperative systems need leadership and vision that recognize not only the diversity of needs and interests that exist nationally among rural electric cooperative systems, but also the diversity of needs and interests that exist locally among the members they serve.

REMDC has a clear vision and objectives for the membership of the organization.

Statement of Viewpoints

• We believe the objectives of the rural electric program can best be achieved through dynamic management and leadership that is based on sound cooperative philosophy and coupled with modern management principles and techniques.

• We believe cooperative philosophy and management principles and techniques must receive constant study and scrutiny, and that research and development of new concepts and approaches must be undertaken if rural electric systems are to effectively fulfill the responsibilities inherent in the objectives of the Rural Electric Program.

• We believe there exists within rural electric cooperatives, and their industry associations, the knowledge, experience, and the professional perspective necessary to identify industry needs and solutions.

• We believe there exists among rural electric cooperatives, and their industry associations, those who are willing to innovate, evaluate and improve cooperative management principles and practices, and who will then translate the results of such studies into meaningful programs.

• We believe rural electric system management will be enhanced where there has been a free exchange of ideas and experiences among those organizations that are innovating, studying, and applying contemporary principles and techniques.

• We believe all member-owned rural electric systems should have the opportunity to share conclusions stemming from such management practice innovation, and further that such shared information can best be provided through NRECA and other associated organizations.

Statement of Objectives

• To assemble rural electric management professionals who have exemplified the application of contemporary cooperative philosophies, management principles and techniques, and who exhibit an interest and willingness to contribute to further study, research and innovation sought in the application of effective management concepts and techniques in rural electric system operations.

• To enhance overall electric system management through management research in areas of current concern and interest.

• To develop new cooperative management concepts, approaches and techniques that help identify and provide the resources and leadership required for meeting the needs of cooperative members in an ever-changing environment. To develop the means where such management research and innovation can be interpreted and widely disseminated to rural electric systems, and to encourage its effective application.

Acknowledgments

The DSO/EaaS subcommittee (committee) of the REMDC was created in June 2018. The committee published the Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation in November 2019. In October 2023, another committee was created to update the paper; the Opportunities for Cooperatives to Lead Transformational Change Through Energy Innovation (version 2). Cooperative members of the committee include:

- Cameron Smallwood, CEO (United Cooperative Services, Burleson, Texas) Committee Chair
- Mike Aulgur, Sr. VP & Chief Financial and Strategy Officer (Shenandoah Valley Electric Cooperative, Rockingham, VA)
- Blake Beavers, Sr. VP Corporate Strategy & Member Services (United Cooperative Services, Burleson, Texas)
- Nate Boettcher, CEO (Pierce Pepin Cooperative Services, Ellsworth, WI)
- Jim Coleman, General Manager (Jackson Electric Cooperative, Edna, Texas)
- Damien Coleman, Manager of Engineering (Jackson Electric Cooperative, Edna, Texas)
- Thomas Golden, CEO (EnergyUnited, Statesville, NC)
- Amy Grice, Chief Operating Officer (Peninsula Light Company, Gig Harbor, WA)
- Marty Haught, COO (United Cooperative Services, Burleson, Texas)
- Neil Hesse, CEO (PenTex Energy, Muenster, TX)
- Eric Jung, CEO (Northeastern REMC, Columbia City, IN)
- Lindsey Mobley, Executive Assistant (United Cooperative Services, Burleson, Texas)
- Peter Muhoro, Chief Strategy, Technology & Innovation Officer (Rappahannock Electric Cooperative, Fredericksburg, VA)
- Julie O'Dell, Sr. VP and Chief Administrative Officer, (Blue Ridge Energy, Lenoir, NC)
- Zac Perkins, CEO (Tri-County Electric Cooperative, Hooker, OK)
- Steve Rhodes, CEO (CHELCO, DeFuniak Springs, FL)
- Hunter Robinson, CEO (Central Rural Electric Cooperative, Stillwater, OK)
- Carrie Vugteveen, VP of Public Relations (Sioux Valley Energy, Colman, SD)

Special thanks to others assisting on the committee including:

- CoBank (Tamra Reynolds, Managing Director)
- CFC (Jan Ahlen, VP, Utility Research and Policy)
- EnerVision (Elaine Johns, CEO)
- EnerVision (Josh Warmack, VP and Managing Partner)
- Federated (Andrew Reed, Director of Underwriting Services)
- Meridian (Brandon Robison, COO)
- Milsoft (Brian Lassiter, VP of Product and Corporate Strategy)
- Milsoft (Greg Shirek, Director of Engineering Analysis)
- NISC (Steve Pascoe, Product Marketing Manager)
- NRECA (Lidija Sekaric, VP, Innovation and Emerging Technologies)
- NRECA (Justin Luebbert, Principal Cybersecurity Compliance Solutions)
- NRTC (Greg Santoro, SVP, Chief Marketing and Strategy Officer)

INDUSTRY SHIFTS

The Smart Home and IOT

OVERVIEW:

The exponential growth of the Internet of Things (IOT) in the home is neither a fad nor a trend; it is a reality. Cooperatives must be aware of the risk, opportunities, and rewards from the integration of "smart and automated" items within members' homes. Long gone are the days when electric co-ops can comfortably sit as the incumbent without worrying that a third party, or the members themselves, can shift and manage loads in a way that could either be beneficial or harmful to the operations of a cooperative.

CALL TO ACTION:

- Cooperatives should engage in supporting avenues for establishing critical connectivity for members. Options could be partnering with local telecoms for pole access with a promise to serve everyone, supporting grant applications for broadband funds or when possible, offering ISP services to members.
- The market is changing; be cautious in having a focus on one digital platform, (Samsung, Google, Apple, Honeywell). Look for integrators who use services such as Matter and offer interconnectivity among disparate technology providers.
- Cooperatives should consider providing services to members to allow multi-beneficial energy monitoring systems like Sense, E-gauge, etc., to enable home, feeder and total sub level energy consumption or energy production data disaggregation. This can be critical to understanding how to establish proper downline device settings which adjust in real time as load changes. This information would also help create innovative rates.
- Cooperatives could be at risk of losing revenue predictability and stability if behind the meter energy management through IOT is not considered in full context. Somebody will fill the gap, whether it be the co-op or a disrupter.
- Member expectations require cooperatives to be aware of in-home connected IOT devices. This could lead to an opportunity to steer members in a particular direction using rebates and establish a new Geek Squad-type business or help desk to manage members' energy resources. Ensure employees are properly educated on IOT basics to better support members and evaluate opportunities.
- Do not overlook AMI. Fully test and research all opportunities it offers.

CONNECTIVITY

The future of the electric grid, and modern society, revolves around the availability of connectivity. Cooperatives must think out of the box and become a catalyst for supporting connectivity to rural areas. As a member-owned organization, there is great benefit to either providing the service or forming formal relationships with local providers that leads to an

improved quality of life for all members. This becomes more critical as members desire a quality of life equal to those in urban areas. Cooperatives have a chance to leverage their footprint or member equity to make a positive change for the member.

DIGITAL PLATFORM INTEGRATORS

There is no current winner in the IOT-everything race. Cooperative leaders should proceed with caution as investments in specific companies such as Google, Apple, etc., could end up being exclusionary of what will become the market leader of the future. Considering a deliberate and methodical approach to IOT and various energy management platform investments leaves room for market shifts to occur without risking a substantial amount of stranded investment. In the immediate, some investments must be made to take advantage of market opportunities that exist, but cooperatives should look for platform integrators who use standards such as Matter for a future solution. Platform integrators work to develop the relationship with all the market players in a manner that allows cooperatives access to IOT devices of all manufacturers.

DATA AGGREGATORS

The electric grid is becoming more volatile and difficult to predict. The integration of an evergrowing amount of distributed generation or IOT in the home that allows loads to shift or drop at the push of a button—which we may not control—creates challenges when establishing safe and effective control and trip schemes for the grid. Cooperatives should identify partners or technology that could aggregate data, starting at the home to the feeder and substation level. Having access to real-time aggregation of renewable data or volatile load shifts allows for the real-time adjustment in downline equipment to occur. Behind the meter data aggregation could either be the collective knowledge from all IOT in the home, individual breaker CT monitoring or a whole-home behind the meter metering device, which operates in real time and communicates through IP addressing.

BEHIND THE METER ENERGY MANAGEMENT

For years, the risk of third parties taking control of members' energy consumption was a topic of concern and discussion. These concerns are now a reality as markets operate with limited resources and market volatility leads to an exponential increase in value. Cooperatives should find ways to help members benefit from the market volatility through the creation of innovative lifestyle and time-based rates that are tailored to specific needs. If cooperatives do not become a part of the cost control solution with members, members will seek third party aggregators to manage the process.

BUSINESS OPPORTUNITIES

The importance of managing members' energy habits cannot be overstated. Cooperatives could build on the trusted energy advisor role and become the trusted IOT advisor. Members are looking for answers to how to better control energy consumption in an affordable manner, but

it is confusing. Many cooperative members may struggle with technology and have no place to turn and receive the benefits from IOT. Cooperatives could build on this need and create a business opportunity for their members. This would benefit the cooperative two-fold; access, or recommendations for IOT devices could be made and the relationship between cooperative and member grows and evolves into more than just the company for which they pay a bill. New opportunities could strengthen the relationship as we move into the future.

AMI DATA OPPORTUNITIES

With AMI systems and a tremendous amount of data, cooperatives could consider using platforms such as Bidgely or other products to assist members in determining categories of use through disaggregation analysis. These types of services can be offered to allow members to have a better sense of their usage without installing products and services behind the meter.

Expanding Member Expectations

OVERVIEW:

Member expectations change at breakneck speed today. While some consumers still engage their electric utility via a simple monthly billing transaction or occasional outage event, that consumer segment is contracting rapidly while a quickly growing consumer segment now seeks more involvement and support from electric utilities in how they should use, obtain, manage, and implement their energy-related desires. Therefore, the manner in which utilities engage members and consumers is a moving target that necessitates cooperatives demonstrate the agility to change how they maintain relevancy in meeting members' needs.

CALL TO ACTION:

- Cooperatives must continue to actively monitor consumer expectations through regular surveying and open dialog.
- Cooperatives should work to amplify digital strategies that provide accurate and balanced content energy topics to reinforce the cooperative's position as the leading provider of objective and reliable information.
- Engage members in dialogue about change and challenges that the cooperative and the electric industry are facing.
- Be able to provide balanced and objective advice to members who want to know more about technology that could impact consumption.
- Utilize technology that will enhance member experience and provide solutions to meet the member's changing energy needs.
- Embrace the reality that AI is here and determine how to leverage it in ways that strengthen relationships with members while demonstrating the cooperative as a thought and practice leader in this space.
- Continue to build on the cooperative's reputation as the trusted energy advisor by providing balanced content on energy topics of interest to members.
- Cooperatives should be economically and socially engaged in their communities. Budgetary consideration should be given to activities such as donations, grants, sponsorships, economic development programming, community involvement, employee volunteerism.

DETAIL

According to an E Source report, there are five shifts occurring with consumer expectations in the utility sector:

- More buying choices
- Social status
- Convenience and flexibility
- Speed and efficiency

• Custom options

With regard to buying choices, the energy management sector already has an abundance of options available for energy management. In addition, smart home devices powered by AI, such as virtual assistants and smart thermostats, enhance convenience and efficiency. Products and services like Alexa and Google Home have become ubiquitous in American homes, expanding consumer expectations for cooperatives to obtain and share their expertise with every new innovation that hits the market. Consider that it's already been several years that consumers were given the ability to use a simple voice command to their "pal" Alexa to manage their home energy load shape. Rather than manually flipping a switch or pushing a button on a thermostat to manage energy usage, technology such as this now provides gadget-crazed, energy-conscious consumers another way to demonstrate their modernization to friends and family.

EV LANDSCAPE

EV adoption has seen considerable growth in the last five years. In 2019, there were 15 fully electric vehicles available for purchase in the United States. Today, there are more than 40 models, and EV sales have grown from nearly 326,000 in 2019 to 1.4 million in 2023, according to DOE¹. Further, as the EV charger landscape continues to evolve with nearly 900 new chargers activated each week, the EV adoption rate is only going to expand. It's essential to meet the members' needs in this area and to help them understand their charger energy demand times can be scheduled so that EV charging is mutually beneficial for the cooperative and the membership.

HOME ENERGY MANAGEMENT ADOPTION

The adoption of smart home and web-enabled technologies is an obvious example of consumer desire for convenience, speed, and efficiency. American consumers want life to be easier and they trust new technology to help make "easy" happen. Remember "The Clapper" light switch? Today, we can program home energy management devices to respond to single-word commands. Simply put, new energy technology solutions promise to make many members' lives easier. While adoption rates will vary by member segment, it seems likely increased consumer interest in new technological advances will flourish.

TRACKING MEMBER SATISFACTION

Monitoring consumer expectations must be a constant exercise for cooperatives. According to the American Customer Satisfaction 2021-2022 Energy Utilities Report, cooperatives have a slight consumer satisfaction edge over investor-owned utilities (73 vs. 72). However, there is a significant delta between satisfaction levels with cooperatives, and for example, Amazon, which boasts an 84. The general takeaway is that status quo will not be deemed satisfactory in future cooperative member satisfaction surveys. Satisfaction levels will drop unless cooperatives revolutionize or embrace other innovators' solutions and services and fold them into their own portfolio of offerings. Today's members also have an expanded expectation of its cooperative,

looking to them to not only provide energy-related products, services, and information, but also to be community leaders. This truly defines the cooperative difference.

Where members have viewed both the cooperative and the internet as 'go-to' sources for information about how to save energy in the home, the companies cited above boast brand awareness that a majority of cooperatives will likely never realize. Will cooperative members ever perceive that their electricity provider can offer products and services as contemporary or consumer friendly as a Google, Amazon, or Tesla? Monitoring consumer expectations must be a constant exercise for cooperatives.

Trusted Energy Advisor

OVERVIEW:

For more than a decade, cooperatives have led the charge in creating, then strengthening, a culture focused on energy innovation and solutions. Cooperatives have led by example and, through education and communication initiatives, have trained their members to manage their usage effectively. Trusted energy advisors have been instrumental in enhancing their cooperatives' brands, serving as essential ambassadors of communication, energy efficiency awareness and as educational resources for members regarding all aspects of the co-op, not just energy solutions.

CALL TO ACTION:

- Continue to focus on providing exceptional service and value.
- Be engaged and empathetic to the membership and recognize when needs are not being met.
- Embrace the transition from only being consultants to offering services behind the meter.
- Bridge the gap between members and contractors where possible, filling service voids that are easily filled by third party contractors (becoming the one-stop-shop).
- Keep a pulse on the market and remain experts on all products and services that have trending consumer interest. Build expertise where it does not exist if members need support in a certain area. Provide proactive, innovative service and solutions, identifying member needs/expectations before they vocalize their desires.
- Remain open-minded and invite change and offer flexible rates and useful product offerings.
- Develop strategic partnerships/alliances with third parties where needed (could be G&Ts, other distribution cooperatives or local contractors).
- Digest and condense complex data for member use.
- Bolster efforts to be recognized as an industry leader in application and education communications of skills and services will be key to success.

DETAIL

With a multitude of products and services available on the market, members will continue to rely on cooperatives for guidance and expertise in making appropriate energy-related decisions, including when purchasing and implementing technologies and services. If a cooperative has not invested in having an employee serve this critical role, it has missed a great opportunity to demonstrate the cooperative value to its membership. Co-ops once largely depended on energy advisors serving as consultants. Today the trusted energy advisor employees are proving their value in a constantly growing business area that address a host of services behind the meter. Cooperatives should become the first resource members turn to when they purchase, implement, operate and/or maintain new technologies.

MEMBERS SEEK OPTIONS

Members feel empowered when they are given different energy options, and co-ops need to prepare for a future where members have choices. Members want convenience, simplification, and control at their fingertips. Third-party vendor penetration into the market continues to increase, and cooperatives will need to resolve how to provide and simplify the energy solutions sought by their memberships. If cooperatives leverage their trustworthy reputations and serve as the provider-of-choice with new solutions and innovations, cooperatives will continue to enjoy a competitive advantage. A cooperative's willingness to adapt to new technologies and provide members services behind the meter will be essential to remain at the forefront as trusted energy advisors.

Members are growing more curious and are willing to adopt new energy savings technologies. The use of smart home appliances, thermostats and other internet-connected devices make up a large portion of these new technologies. Members are starting to enjoy the ease of controlling everything at the touch of a finger on their smart phones or tablets. The membership is in search of products that lower energy usage and give them more control at a reasonable price. A great example is the growing popularity of smart thermostats.

There are multiple factors contributing to this shift. Younger members are joining cooperatives, and they want data, transparency, and more options. They want choice with different rates and additional services and products. The current generational and cultural climate has played a role in the shift. There is a greater emphasis on social responsibility and environmental impact. This is evident in the adoption of DG and electric vehicles (EVs). According to Goldman Sachs Research, "EV sales will soar to about 73 million units in 2040, up from around 2 million in 2020." However, less than five percent of respondents to Touchstone Energy's 2023 National Survey on the Cooperative Difference reported owning an EV and only one out of five were "very likely" to purchase an EV as their next vehicle. Their primary reason for EV purchase consideration centered on environmental concerns, according to the survey. However, there are recent concerns having to do with the safety of EVs as they relate to natural disasters and underground parking garages that could create headwinds for EV adoption growth.

GROWTH IN MEMBERS SEEKING MORE THAN LOW-HANGING FRUIT

There has been a noticeable shift in the energy innovation sector over the last decade. The focus has shifted from simple energy efficiency and conservation to DER solutions, battery storage, and the introduction of Artificial Intelligence assisting consumers in managing energy use.

To say the residential solar landscape has seen extraordinary growth in recent years would not do the technology justice. According to the Solar Energy Industries Association:

- Residential solar PV installed capacity in the U.S. accounted for about 5.08 percent in 2022.
- There is enough solar energy installed to power 29.6 million homes.
- 15 percent of U.S. homes will have a solar PV system by 2030.

• In 2022, a new solar project was installed every 44 seconds.

Concurrent with an increase in solar panel efficiency, the cost of solar energy has fallen substantially. In the last decade alone, the cost of solar panel installation fell over 60 percent, and many industry experts predict that prices will continue to fall in the years to come." Due to this shift, the role of the trusted energy advisor has had to evolve. Renewable energy will sustain momentum across the country, especially as battery technology becomes more streamlined and affordable. Cooperatives will need to consider DER adoption and determine how to capitalize on other revenue streams while keeping the best interest of the membership in mind. Some cooperatives have already launched new service offerings in the residential solar space due to member demand and the spread of misinformation by solar vendors preying on uninformed consumers. The cooperatives have determined their success in two ways. First, providing members with accurate financial data has deterred some members from making ill-advised, albeit costly, investments in residential solar. Secondly, the cooperatives have proven they can install the PV systems at a lower cost—but margin positive for the co-op—for their members than the competition.

Energy Advisors should stay engaged with the membership and offer their expert assistance in every step of the process. New technologies are constantly being introduced and marketed heavily to the public. Third-party brokers, aggregators and technology vendors are offering services in the market, causing increased pressure for us to offer the same services and options to our membership. Cooperative members are being inundated with information and propaganda. Members are looking to their cooperatives to simplify the plethora of information available and to provide guidance on what is truth or fiction. They are looking to their trusted energy advisors for options and cooperatives should be able to fulfill these member expectations.

In order to remain relevant to the membership, cooperatives and energy advisors must continue to keep a pulse of the market and know what products/services are available. They should remain the experts and be aware of any areas where the membership's needs are not currently being met. The energy advisors must develop and offer useful programs to the membership in order to meet these needs. When appropriate, the cooperative should take the place of the intermediary or third-party contractor. This not only will help maintain that co-op – member relationship and simplify the process; it will also help keep the membership shielded from unscrupulous contractors and companies. This will also leverage the foothold cooperatives have on their niche in the market, keeping cooperatives sustainable into the future. To enhance the member – co-op relationship Energy Advisors can take on a proactive role with members instead of a reactive role, working with new members on their energy-related needs.

These trends in our cultural and societal norms also are becoming an increasing threat to the trusted energy advisor position and cooperatives in general, with the overwhelming success of companies like Amazon, assessing services that stand to enhance consumer convenience. These trends also show the need for cooperatives to be prepared for a future where members look to their co-op as the one source for all their energy needs. For example, cooperatives already serve

as a bridge between the membership and contractors that perform services for them (i.e., HVAC technician, insulation contractor, and solar contractors). Imagine a future that removes the contractor or independent serviceman and instead has the member call on their cooperative to provide these services for them. Cooperatives must be the experts and in many cases are.

The internet of things (IoT) is another potential threat to cooperatives and energy advisors. Third-party organizations are nudging their way into the energy sector and are gaining valuable information about consumer energy usage habits. Eventually, this traction may give third parties more information about our members' load profiles than we have. They could potentially have more access to members' applications in their home and offer more creative ways to lower energy usage. The internet is also causing less of a need for personal interaction. In the future, some members may prefer convenience and quicker response. Having a face-to- face appointment at a member's home may be regarded as more of a disturbance than a benefit by some members. Cooperatives must continue to show that they are available to their members. If cooperatives can continue to offer excellent customer service and value to the membership, the membership will continue to support cooperatives.

Increased Regulatory Involvement/Impact

OVERVIEW:

There is no doubt that utilities need to be cognizant of the increased impact of the regulatory environment surrounding the future of the electric generation, transmission, and distribution utility business. To start at the top, the federal government sways back and forth with new administrations bringing variability to the potential impact of federal oversight on the utility business. At the next level, the individual states have the impact of regulation at the state commission level or through legislative action. If that wasn't enough, in many cooperative service territories throughout the United States, City and County governments weigh in with their contributions to regulating the utility business. Taking concern of regulation a step further, those cooperatives operating within a regulated energy/capacity market bear the challenges of operating within challenging rules; rules that sometimes come from other regulatory actions.

CALL TO ACTION:

- Cooperatives should be engaged with their national, statewide, and other related associations-to be informed on regulatory efforts and act in unison where possible to assist in development and implementation of proposed regulation. Where these associations develop guiding principles of regulatory or legislative action, cooperatives should be engaged in those processes (e.g. NRECA resolutions process).
- While working with associations is important, cooperatives must not be individually 'hands off.' Rather, cooperatives should take an increased role in tracking the regulatory developments that could affect their individual businesses and engage when/where necessary. Some cooperatives have hired their own lobbyists to ensure they have a thorough understanding of pending regulatory and/or legislative actions and as a result have a voice during deliberations.
- Cooperatives should work to enhance relationships with regulators and legislators who have the potential to influence the future of cooperative members—they need to hear cooperative perspectives on issues and not only those of the largest municipal and investor-owned utilities.
- Cooperative personnel who have the necessary experience should attempt to serve on steering and program development committees, where possible and practical, to ensure cooperative issues are considered. Cooperatives should consider opportunities to involve and engage their memberships to support certain regulatory or legislative outcomes if deemed appropriate and necessary.

FEDERAL REGULATORY IMPACT

The United States government issues regulations on a continual basis that impact the electric utility business. The great challenge of the electric utility industry is that many of these regulations follow the desires of the 'party in charge' of the White House. In recent Democratic controlled administrations, there has been a desire to propose regulations that reduce carbon

emissions in all ways possible from the industry. These attempts have put strong pressure on the continued operations of fossil-fueled generation, especially coal. New regulatory attempts are even pushing boundaries for gas-fired generation as well. The previous administration did not agree with many of the same issues; this means as the voting public chooses different administrations, it is also choosing different regulatory implications – most of the time without really understanding the impacts of those changes. This 'see-saw' approach to federal regulation makes operating in the electric utility business a very difficult proposition when it comes to long-term planning.

STATE REGULATORY IMPACT

Like the federal government, many state governments have similar issues depending on the political motivations of their administrations at the time. In some states, though, regulation is done via the state utility commission, which can be a bit less partisan since many of those positions are not elected by the public, but rather appointed. Many appointments to commissions survive different administrations, which can mitigate partisan antics. Though this may be true in some instances, the commissions still work within an administration and often have noticeable leanings toward the administration in charge. Cooperatives in many states still have to contend with the fluidity of the state regulatory bodies.

At NARUC, the National Association of State Service Public Commissioners, there is a subgroup, the National Council on Electricity Policy. There is an annual meeting of such commissioners to discuss electricity policy. In review of the agenda from 2022, it was focused on "The Evolving Customer."

A statement from that agenda reads "Customers are no longer just users of power. Like the gird is modernizing and evolving, the role and expectations of the customer is, and will continue to change. The electric system of the future will require all types of customers to be active participants in providing reliable, resilient, just, and affordable electricity."

Just one year later, the same meeting has a different twist now focused on "Affordability in the Electric System Transition." This meeting still talks about the transition but ends that discussion with the statement, "all while striving to maintain or reach a more equitable and just electricity system, energy affordability has leapt to the top of the priority list of all major electricity policy makers on the federal, state and local levels."

It is becoming more apparent to many that there is a cost to regulation, no matter what level that regulation is enabled. Many electric consumers are already at their limit, and their voices are beginning to be heard at the different levels of government.

Beneficial Electrification

OVERVIEW:

Consumers have been moving toward beneficial electrification for some time, but the pace of that transition has increased more quickly in recent years, providing new opportunities for consumers as well as other sectors of the economy such as agricultural, municipal, transportation, commercial, and industrial entities. According to the Beneficial Electrification League, "Beneficial Electrification includes the application of electricity to end-uses where doing so satisfies at least one of the following conditions, without adversely affecting the others":¹

- Saves consumers money over time
- Benefits the environment and reduces greenhouse gas emissions
- Improves product quality or consumer quality of life
- Fosters a more robust and resilient grid

An electric cooperative is a different type of utility—an entity committed and accountable to its membership and as such should provide value-based programs and services that allow consumers and businesses the ability to benefit from electrification both in quality-of-life applications and economically. The holistic result of beneficial electrification goes beyond immediate impacts to the consumer, it has the potential to also improve a utility's ability to add load and grow while simultaneously reducing carbon intensity on the grid². However, while there is a multitude of benefits to electrification; cooperatives may face challenges as the transition to electrification moves forward. Those potential challenges include capacity planning, resource adequacy, infrastructure expansion, and system availability.³

CALL TO ACTION:

- Lead member adoption of beneficial electrification technologies through education and example.
- Plan for future beneficial electrification expansion and growth through consumer research.
- Advocate for and work towards shaping policy with reliability as a priority.
- Identify and collaborate with influential stakeholders and other organizations to narrow understanding gaps.
- Develop programming to better prepare for members' adoption of beneficial electrification technologies.
- Strategically structure rates to ensure cost causation is considered appropriately and to support the electric system in the most financially prudent/fair way.
- Maximize state and federal grant opportunities to benefit cooperative members.

¹ <u>https://be-league.org/</u>

² <u>https://www.eesi.org/electrification/be</u>

³ <u>https://www.cooperative.com/topics/distributed-energy-resources/Pages/Cultivating-Partnerships-to-Prepare-for-Transportation-Electrification.aspx</u>

DETAIL

As electric cooperatives work to develop and plan their organizational strategy with beneficial electrification in mind, the above-mentioned 'Calls to Action' can benefit members and the larger community as a whole. Electrification of the economy can also create new opportunities for municipalities, schools, and other non-profit organizations to become more efficient, save money, and reduce their carbon impact. This can be a win-win for electric cooperatives and encompasses one of the seven cooperative principles of 'commitment to community.'

LEAD MEMBER ADOPTION OF BENEFICIAL ELECTRIFICATION TECHNOLOGIES THROUGH EDUCATION AND EXAMPLE

Cooperatives should provide their members with valuable information they can use to make decisions on purchasing and investments in electric technology conversions. Cooperatives can assist consumers by investing in, deploying, and testing those technologies first.

PLAN FOR FUTURE BENEFICIAL ELECTRIFICATION EXPANSION AND GROWTH THROUGH CONSUMER RESEARCH

As electrification of the economy expands, cooperatives will need to plan for the future to ensure adequate resources and available capacity on the system. This will require cooperatives to understand the motivations, demographics, spending behavior, and current electric technology deployment/implementation of their memberships. Consumer research will become a key part of utility planning for the electrification of the economy.

ADVOCATE FOR AND WORK TOWARDS SHAPING POLICY WITH RELIABILITY AS A PRIORITY

Beneficial electrification plans must be strategic and encompass the co-op's near and mediumterm ability to provide members with reliable energy through the transition to electrification. This means cooperatives will need to become even more actively involved in policy discussions with local, state, and national legislative and regulatory leaders. The National Rural Electric Cooperative Association (NRECA) serves as an important partner in advocacy and has developed a number of collaborative efforts with federal agencies and programs to assist electric cooperatives in the transition to electrification.⁴

IDENTIFY AND COLLABORATE WITH INFLUENTIAL STAKEHOLDERS AND OTHER ORGANIZATIONS TO NARROW UNDERSTANDING GAPS

Collaboration with influential stakeholders and other organizations that advocate for the beneficial electrification of the economy will both foster strong working relationships and help bridge any perceived "gap" of understanding when it comes to policy and planning. The Beneficial Electrification League is a key partner with electric cooperatives in developing workplans.

DEVELOP PROGRAMMING TO BETTER PREPARE FOR MEMBERS' ADOPTION OF BENEFICIAL ELECTRIFICATION TECHNOLOGIES

Electric cooperatives may be able to influence their members' purchasing decisions and ultimate deployment of electric technologies through established relationships and targeted programming. Electric cooperatives can have a greater ability to encourage the adoption of efficient and value-based electric technologies when members view the co-op as a trusted energy advisor and when meaningful rebate and incentive programs are made available.

STRATEGICALLY STRUCTURE RATES

Shaping consumer behavior, such as using electricity whenever convenient, can be a challenge. However, the adoption of strategic rate structures such as time of use, demand response, or critical peak pricing can help electric cooperatives reduce cross subsidization and may shift electricity use to the benefit the utility and ultimately the member. This will in the end help support a more reliable, robust, and resilient electric system.

MAXIMIZE STATE AND FEDERAL GRANT OPPORTUNITIES TO BENEFIT COOPERATIVE MEMBERS

There are a number of state and federal grant opportunities that can provide electric cooperatives and their members with financial assistance to reduce the initial investment costs of new and emerging electric technologies. The Inflation Reduction Act also provides for healthy incentives for consumer appliance electrification that in most cases applies to the income demographics often served by co-ops.

Workforce

OVERVIEW:

Continuing changes in workforce demographics present new challenges to electric cooperatives across the country. The assimilation of multiple generational demographics into cooperative teams requires new training and communication strategies. Communication preferences may be one of the biggest hurdles to overcome. Many employees entering the workforce from Gen Z and Gen Y have preferences to communicate via text or email messaging versus speaking with others in person or phone. Newer employees are looking for challenges and opportunities for growth along with compensation practices that reward accordingly. Cooperatives need to identify the potential for these issues and challenges and develop their strategic approach accordingly. Additionally, work-life balance seems to be a stronger desire of the new generations of workers that must be considered.

CALL TO ACTION:

- Assess compensation, benefits, and total rewards strategies against current practices.
- Assess current succession planning strategies and practices.
- Develop a process to measure culture within the organization. Surveys are an excellent tool for assessments of overall organizational culture.
- Review and or establish a strategy for training, growth, and development of employee resources.
- Develop an overall employee communication strategy.
- Determine processes to attract/retain the very best talent available.
- Communicate people strategies to the board of directors.
- Consider employee expectations of work/life balance and how the organization can support such expectations.

DETAIL

Employee Compensation/Total Rewards – Each cooperative should determine its overall compensation philosophy with consideration on impact of all key stakeholders. Linking strategy to compensation is a key decision in your total rewards process. Some questions to ask and answer are:

- Is your pay structure attracting the needed talent to your organization?
- Is your pay structure retaining key talent within your organization?
- Have you identified key talent?
- What are your pay policies for each employee class?
- Have you considered the development of incentives that align with the achievement of key strategic vision goals?
- Do you continually review your benefits structure and determine if it is at market levels for your target markets of talent within your organization?

- Has a pay philosophy been established?
 - Example: Pay above/below/at market levels?
- How to determine your market?
- Should the cooperative consider incentives tied to the execution of strategic objectives?
- Do you utilize compensation strategies to attract and retain employees?
- Do you provide additional compensation to employees pursuing additional growth and development opportunities such as spot awards or additional base compensation?
- Cooperatives should consider the implementation of a learning management system in order to track training and progress of learning within their employee group.

SUCCESSION PLANNING

Every electric cooperative should have some plan for future succession planning, especially at the executive staff levels. Having a plan can ensure smooth transitions when key positions are vacated due to retirement or other reasons. Upon the creation of a succession plan, additional execution strategies need to be taken to "work the plan." Some cooperatives review their succession plans annually through the strategic planning process for senior leadership positions and through the mid-management levels. Who is involved in developing and reviewing the plan? What type of career development planning do you wish to pursue? Do you have the resources available to do it in house or do you need consulting assistance? Are you committed to funding additional resources for these development opportunities? How do you communicate with employees identified with potential and how do you communicate with those who do not? When does the board of directors need to be involved? Do you utilize executive assessments for senior level positions? Do you have formalized executive development plans?

CULTURE SURVEYS

Many employers, including electric cooperatives, are conducting culture surveys to assess the strength of culture across all employees and locations. The definition of culture is basically "the way things get done around here." Aligning culture with strategy is critical to a cooperative's ability to execute strategy successfully. Failure to do so will result in missed execution opportunities of employee strategies. Several cooperatives are utilizing the Balanced Scorecard strategy planning process developed by professors Kaplan and Norton at the Harvard Business School. Many may have heard the reference that 'culture will eat strategy for lunch' if not aligned properly with the overall strategic planning process. Better yet, strategy and culture should 'sit down for lunch' periodically to ensure continued alignment. Properly developed and designed culture surveys are a good way to assess full alignment. Knowing the positives and negatives within your culture can serve as a roadmap to overall culture improvement and satisfaction within your employee teams.

Future compliance regulations may need to be strategically reviewed as to how culture can be impacted both positively and negatively. ESG (Environmental, Societal and Governance) and DEI (Diversity, Equity and Inclusion) programs that could be mandated by the federal government,

especially to federal contractors, need to be reviewed carefully to ensure proper alignment with the cooperative culture. Many of the current federal grant opportunities require additional steps to be taken within the ESG and DEI arenas.

TRAINING AND ORGANIZATIONAL DEVELOPMENT

Electric cooperatives face new challenges daily that require new knowledge and skills to successfully execute identified strategies. Changes in technology, processes, new employee expectations, etc., all require a new approach to training and development programs and policy development and compliance. Do you need a specific functional approach to training and development? Should you create a separate position with responsibilities for measuring the success of training and development programs and development? Should you create a separate position with responsibilities for measuring the success of training and development programs and development? Is a Learning Management System something to assess?

EMPLOYEE COMMUNICATION

Communication of strategic goals and objectives is critical to the success of any cooperative achieving the vision results within the strategic planning process. Communication preferences need to be reviewed and utilized on a continuous basis. Everyone has their own personal communication preference and cooperatives should engage communications professional to ensure all preferences are met.

EMPLOYER OF CHOICE

Is your cooperative still the employer of choice in your service territories? Some cooperatives are experiencing higher levels of turnover within the employee base due to family needs, better opportunities, better locations, etc. Cooperatives may want to develop a strategy to address the new expectations of Gen Y and Gen Z employees. How do you connect with future employees? How do you "tell your story?"

PEOPLE STRATEGY AND THE BOARD OF DIRECTORS

Does your board of directors have an understanding of your need to continuously review your people strategies, and does it support the need for investment to ensure the best and brightest are available to delivery to very best service to the members? Does your Board of Directors understand the need for a highly competitive compensation and benefits strategy?

WORK/LIFE BALANCE

With the COVID-19 pandemic and working from home becoming commonplace among many companies, many individuals have a different view on work versus time away from work doing what they want to do. In the past, many individuals made work their 'hobby' and poured a

significant amount of time outside of normal business hours into being successful at work. Today, more and more employees are considering their time outside of work hours to be their time and thus employers need to be considerate of this new trend.

The Evolution of Board Governance and Operations

OVERVIEW:

The cooperative membership is changing. As generational shifts occur within cooperative membership, so may the interpretation of what the Director role and commitment level should look like. Cooperatives must recognize that member engagement expectations are changing and the need to alter what has been "standard board meeting practice" must be reconsidered. The cooperative model and its reliance on a member-elected, self-governance structure is powerful and should be protected at all costs. To do that, CEOs and directors must begin opening the door to all options for consideration.

CALL TO ACTION:

- Cooperatives should research and understand member demographics and their generational expectations. Use surveys to gauge member interest, proactively communicate with the membership as election cycles approach and regularly evaluate bylaws and update them to ensure relevance and flexibility.
- Director onboarding should become standardized, repeatable, and required.
- CEOs and directors should begin evaluating flexible meeting format and schedule options.
- Using dashboards to visually represent key ratios and operational metrics offers opportunities to increase meeting efficiency and improve data visibility.
- Cooperatives must consider providing board packets through digital platforms to better enhance the real-time accuracy of information and allow 24/7 access to information such as operational plans, strategic plans, policies, financial oversight documents and limitless other items under the purview of governance.
- Cooperatives must routinely train directors about the responsibilities, legal liabilities and authority delineation between cooperative attorneys, directors, CEO and employees.
- Boards should make mandatory the process of hands-on director participation in a regular strategic planning and board workplan process. Having approved plans offers alignment and protection for all parties as progress is made towards goals and objectives.
- Directors are responsible for holding each other accountable for their performance and behavior. Establishing a director evaluation process creates a format to ensure accountability and proper adherence to expectations.

FINDING THE NEXT GENERATION DIRECTOR

Cooperative leadership must find new ways and means to first identify interested and participative candidates and create a member election process that is easier and more accessible. Using social media and email allows for a broader audience to be reached and is an easier way to educate the entire membership about what it means to be a director. Member programs can be created to educate and identify those who may be interested in becoming a director and are

interested in the basics of cooperative operations and market challenges. Election processes should be advertised, promoted, and evolve with a focus on increasing the number of participants in the process. Election meeting format changes such as in-person family event elections, online voting, mail in ballots or even drive-thru elections with ranked choice voting should be analyzed.

DIRECTOR COMMITMENT AND ONBOARDING

Directors of tomorrow may be hesitant or unable to participate at the same level of commitment and dedicated years of service. This creates the need to have an easily repeatable on-boarding process. This may include something as simple as requiring participation in an educational Power Point presentation prior to the next board meeting or an online training course. Cooperatives should consider creating an in-house on-boarding program, which can be administered by key staff or the CEO. Other options could allow software-facilitated training or by using other associated partners such as NRECA, the electric cooperative statewide associations and lenderoffered programs. The content must be easy to update and modify and structured in a manner to bring Directors up to speed quickly by focusing on key areas of oversight. Further, cooperative boards could consider a mentoring program where new board members spend time with experienced board members.

CHANGE IN MEETING FORMAT

While there is no substitute for an in-person board meeting, COVID-19 demonstrated that other meeting formats can work. As needs change, new formats should be evaluated for future use as new directors may still be in the workforce and require a more flexible meeting format. Meeting format options range from early morning meetings to late evening meetings, or even online meetings could be considered as possible solutions. Another option that accommodates those working directors with limited availability revolves around reducing the number of in-person meetings held each year. Critical financial information can always be available to the board in a secure environment, with bi-monthly in-person board meetings, which is used to address business that warrants more discussion for approval.

One concern often raised from holding online meetings is the potential risk of creating a less secure and protected environment. There is also a potential hinderance in relationship and trust development by holding only virtual meetings. Trust between the CEO and board is critical for an electric co-op to be successful. Therefore, building and/or maintaining trust should be kept 'top of mind' in any discussion regarding the format of board meetings. Any change to the "standard board meeting" could come with pros such as a more concise and on-point meeting, and a con of reduced inter-director conversational dialogue.

DATA VISUALIZATION

As dynamics change and the expectation of director to cooperative engagement evolves, so must the medium in which information is provided. CEOs have a responsibility to provide monthly updates on key financial metrics, cooperative standings against loan covenant and various operational updates. Using dashboards allows this information to be provided in a real time format that not only compares history but can also demonstrate cooperative-specific data against a benchmark such as the KRTAs. Utilizing dashboards to visualize data allows for an easy repeatable process for updating and presenting information in an easily digestible, and repeatable format.

DIGITIZATION OF THE BOARD PACKET

As director time and commitment changes, so should access to the board packet and governancerelated material. Using digital platforms such as SharePoint, cooperative board packets, historical documents, policies, and other material can be always available in a secure environment. Items such as quick links to dashboards, items of interest, outage updates and other general interest fields may also be created. Allowing anytime access to information, while not a standard of past operation, has enormous benefits in the reduction of continual information transfer on repetitive items from the CEO and staff to the board.

STRATEGIC PLANNING

Many cooperatives have a process for long-term strategic planning. In many of these progressive cooperatives, the board is integrated into the long-term strategic planning process. Some cooperatives have a long-term strategic plan and annual objectives that align with the plan. In these cases, many have the board review and approve annual objectives, which keeps the board aligned with the executive staff and employees when it comes to the strategic plan.

DIRECTOR EVALUATION

Some cooperative boards have implemented an annual process whereby each director completes an assessment of the other directors of the board. This process assists all directors to know of how their peers feel they are progressing or operating as an effective director for the purposes of the cooperative.

DIRECTOR EDUCATION

Several cooperative boards have identified director education as an important strategy for ensuring board members have the appropriate level of business knowledge in making critical strategic decisions for members.

Some cooperatives require board members to maintain the credentialing offered by NRECA such as the Credentialed Cooperative Director Certificate, the Board Leadership Certificate and

Director Gold Credential. Several strongly encourage credentialing while some haven't made the decision to encourage the courses.⁴

⁴<u>https://www.cooperative.com/search/Pages/results.aspx?k=Director+Certificate+Programs+and+Requirements&</u> <u>Type=WebPage</u>

Transmission

OVERVIEW:

The buildout of new transmission capacity in the United States is paramount to adding new generation on the grid, aiding beneficial electrification and the associated load growth, and ensuring continued supply adequacy and system-wide reliability.

CALL TO ACTION:

Cooperatives can work together or individually to aid new transmission development via:

- Exploring the potential of avoiding transmission cost and/or expansion through the use of DER and VPP.
- Participation in the FERC process for new transmission rules and its new transmission authority
- Stakeholder engagement and committee participation in RTO and ISO regions (where present)
- Engagement and lobbying of state regulators and local authorities.
- Engagement with community groups concerned about new corridor buildout.
- Support in U.S. Congress on permitting reform and tax credits for transmission buildout.
- Engagement with DOE (and the administration and the congressional appropriators) on the continued support for the transmission loan authority, transmission-focused grants, and the funds to scale up grid-enhancing technologies.
- Engaging in any processes to determine the overall value and benefits of new transmission (e.g. the cost of resilience is not quantified)
- Educate members on the cost implications on the coming expansion of the transmission grid.

TRANSMISSION INFRASTRUCTURE

The pace of the buildout of new transmission lines and regional interconnects has not picked up; in fact it has slowed down. A Princeton University study¹ found that from the 1970s through the 1990s, as electricity demand grew steadily, new U.S.-built transmission capacity at occurred at nearly the pace required to support all the generation in the interconnection queue and maintain grid stability. However, the pace of new domestic transmission construction today is only moving at half the pace required compared to the aforementioned historical pace. However, the new load demand had been essentially flat in those prior decades. According to a recent DOE transmission study², 47,300 GW-miles of new transmission lines will be required by 2035—a 57 percent increase compared to the current system. And it found that the highest value of new interregional transmission exists across the three electrical interconnections. Yet, despite recent developments in various ISOs and RTOs, it is the lack of coordination and connection that is hampering the full potential value of new transmission. In a 2020 interconnection "seams" study, NREL/DOE identified the value and cost for a range of scenarios in building high-voltage direct current (HVDC) lines. Even in the case of relatively low renewables penetration, the cost of

maintenance of existing HVDC lines requires an investment of about \$40 billion, the buildout of three east-west HVDC interconnections adds \$6.7 billion, while a national HVDC "macrogrid" adds \$8.2 billion (relative to \$40 billion) while providing the greatest benefit and the greatest savings in the high-renewables scenario. The best optimized scenario allows the current cross-regional links to expand and build the three HVDC east-west lines. Since these are all high cumulative costs, it is important to consider that maintaining or building out the network with be borne by the end consumers unless these projects are heavily subsidized.



Note: Reproduction of Figure ES-7 in the 2023 National Transmission Needs Study (page xi).

Developing new transmission infrastructure does not come without challenges. Market rules, which are continuously evolving, are adding uncertainty for investors, as does the long siting, permitting and construction development cycle. Winning permits, negotiating land-use agreements, overcoming legal challenges from state and local government, landowners and environmental groups create headwinds too. The issue of cost allocation among multiple utilities and state regulators shows up repeatedly when determining who will pay for transmission vs. who benefits.

Recent developments that support transmission include: new state laws that require wholesale market participation for transmission owners; new FERC authority under the Infrastructure Investment and Jobs Act (IIJA) for regulating some transmission, including considering setting minimum transfer capability across regions; the congress also gave DOE a new transmission loan fund authority; congressional introduction bills on streamlined permitting and a tax credit law for new transmission; PJM, MISO, NY-ISO, and CAISO approvals to build new, multi-GW and multi-billion dollar new transmission projects.

It is, however, important to consider some of the existing and developing alternatives. New technologies that enable higher capacity current-carrying lines are being tested, as are dynamic line rating methodologies⁵. Transmission system operators in PJM, ISO-NE, and ERCOT are

⁵ <u>https://www.tdworld.com/transmission-reliability/article/55002260/great-river-energy-unlocks-hidden-transmissioncapacity</u>

adopting "storage as transmission asset" that can help increase the capacity of the existing system. $^{\rm 6}$

On the distribution side, demand can be countered to a certain extent via distributionconnected generation sources, load shaping and management, demand response, distributed storage, and the orchestration of all of the above (as virtual power plants).

⁶ <u>https://cdn.ymaws.com/ny-best.org/resource/resmgr/reports/SATA_White_Paper_Final_01092.pdf</u>

Generation Market Forces

OVERVIEW:

In the dynamic and rapidly evolving landscape of the energy sector, electric cooperatives emerge as pivotal players, leading the charge towards a transformative era marked by innovation and regulatory shifts. Heading toward 2025 and the years that follow, cooperatives—driven by progressive, forward-thinking ideals—aim to light the way for industry. Cooperatives are committed to addressing the complex challenges and capitalizing on the opportunities within the power markets, ensuring resilience, reliability, and sustainability are at the core of our endeavors.

CALL TO ACTION:

- To navigate these challenges, advocate for a holistic strategy of generation resources that emphasizes technological innovation, strategic infrastructure development, and regulatory agility.
- Active stakeholder engagement and committee participation in RTO and ISO regions (where present) is essential.
- Cooperatives, in particular distribution cooperatives, must more seriously consider scalable and significant distributed resources.
- Cooperatives should actively seek grant funds to test new technologies. Grant funds can
 greatly decrease the risk to members while simultaneously placing the cooperative in a
 position to lead the way to a more diverse, reliable, cleaner, and economically feasible
 future.
- Cooperatives should work together where possible to enhance scale and economics of new generation resource additions in order to meet the reliability and cost expectations of their members.
- When developing the stack of resources to meet member power supply expectations, cooperatives should consider demand side management programs, energy efficiency, DERs and microgrids along with conventional generation resources.

INTERMITTENT RENEWABLE RESOURCES

Subsidized renewables and political climate agendas will continue to put economic pressure on carbon-based thermal energy. This trend is causing more dependency on renewable generation resources, such as wind and solar. The higher dependency on renewable generation has created many challenges for regional grids. Unlike thermal-based generation resources, which can provide continuous baseload power and are dispatchable, renewable generation is strictly dependent on weather conditions and may not be available when needed. This presents the issue to the grid operator of managing and balancing supply and demand.

However, advancements in energy storage technologies such as batteries may assist in providing renewable generation with the optionality to become more dispatchable. Coupling batteries with renewable generation could enhance the flexibility and reliability of renewable energy integrated into the grid. Due to cost and lack of market guidelines and rules, the adoption and use of battery technology is lagging.

Moreover, the proliferation of distributed energy resources (DERs) ushers in a new era of supply diversity and localized generation. Advocating for both utility-owned and member-owned DER initiatives will create a more distributed energy landscape that diminishes dependence on centralized transmission and generation infrastructure while offering cost-related benefits and enhancing overall grid resilience.

RESOURCE ADEQUACY

Resource adequacy will need to continue to be the ultimate goal in the energy markets, which means having enough generation capacity to meet demand under various conditions. This is essential for grid reliability. Operating in this new landscape where non-dispatchable generation is nearing or even exceeding firm dispatchable generation, the ISO/RTOs, and Balancing Authorities, will need to implement market mechanisms and operational practices to allow for capacity to show up in non-traditional ways. In doing so, it will cause the ISO/RTOs and Balancing Authorities to work closer with electric distribution cooperatives and the consumer at the end of the line. This could be in the form of Virtual Power Plants (VPP), which will be discussed in greater detail in the section labeled VPP, but it is important to mention in this section, because as the market changes, VPPs will play a greater role to ensure resource adequacy.

To achieve resource adequacy, it is important that we continue to evaluate all potential sources of generation. There are other carbon-free resources that could be considered, such as nuclear and geothermal technology. Large steam-based nuclear power has been around since the 1950s, and while there is still a case to be made for large frame units, the newer, advanced modular reactor designs appear to be more accepted. Advanced reactors use lower yield uranium fuel, are much smaller, and fitted with passive security and safety measures. These units could be factory built and delivered to the site, thereby reducing regulatory burden.

There are several advanced reactor core designs on the drawing board along with new coolant schemes. These units must receive regulatory approval to be considered for a viable demonstration. The small modular light water reactor (LWR) is presently the farthest along and being licensed for service. The success of nuclear power will depend on the same level of financial support enjoyed by the renewable supply sector.

Geothermal energy has been around for decades but is often limited by the geology of an area. Like small modular nuclear, newer designs of geothermal offer a thermal low-emission power option. Enhanced Geothermal Systems, as an example, use the heat of the earth's core to produce steam and formations can be fracked to increase permeability of bedrock. Once the seam is ready, fluid is pumped into the fissures where it becomes superheated. The water is then
pumped to the surface, compressed to steam, and run through the power turbine. The cooled water is then reinjected to be reheated again in the rock formation. The Department of Energy is presently funding several demonstration projects around the country for Enhanced Geothermal.

Regardless of the politics surrounding carbon, thermal power generation will be indispensable to maintain a sustainable and reliable grid for many years to come. It is time for carbon-free nuclear and geothermal generation to have an industry resurgence; however, there are significant R&D advancements still to be made in these areas.

In the meantime, natural gas generation will continue to provide the most cost-effective, dispatchable alternative to replace retiring generation. As the nation's coal fleet continues to be retired early due to environmental goals/agendas, pressures from inexpensive natural gas, regulatory mandates and subsidized renewables, gas will certainly be a central part of the solution. This increasing reliance on gas will create additional challenges in the security and delivery of the fuel source that will be discussed in other sections. Natural gas should no longer be called a "bridge fuel" as the resurgence of dispatchable resources is necessary to address intermittency of renewable resources. We hopefully are able to counter the recent frequency of rolling blackouts.

In addition, cooperatives must move beyond energy efficiency and load control as DERs begin to play a more significant role in our supply future. Cooperatives must consider small natural gas generation, solar + storage, standalone storage and any other source that is small enough to place on the distribution system, yet large enough to supply a significant portion of load. These sources offer tremendous resiliency benefits in addition to their economic benefits.

LEGISLATIVE AND REGULATORY CHALLENGES

Legislative and regulatory uncertainty further complicates the landscape, making investments in generation sources particularly challenging. The long-term nature of these investments, often spanning decades, is at odds with the unpredictable shifts in policy and regulation, demanding a strategic approach that is both flexible and anticipatory. Hedging these risks will become increasingly complex and costly. There will certainly be investors willing to purchase carbon-emitting assets, at tremendous discounts, and sell the output for as long as these assets are permitted to operate. This will undoubtedly create additional burdens on cooperative members who are either forced to take significant asset write downs in order to retire these assets early, or additional costs to move to increasingly risky third-party suppliers willing to take on these legislative and regulatory risks. Cooperatives must seriously weigh all of these risks when making portfolio decisions for the future.

Gas & Electric Coordination

OVERVIEW:

As the nation navigates the transition from traditional generation sources to this new paradigm of a low carbon society many stakeholders agree that natural gas generation will form the bridge to this new reality. The plentiful supply and relatively low CO₂ output (when compared to coal) of natural gas makes this the natural choice for new fossil fueled generation builds today. Further, the low cost and high dispatchability of gas peaking plants make this the preferred option to back up intermittent resources. These factors have led to a tremendous increase in our reliance on natural gas as a fuel source, which, in turn, has introduced new reliability risks. The primary risk is the just-in-time delivery method typically employed to deliver gas to the generation source. Thus, any threat to the natural gas delivery system and/or capacity shortfalls will have a direct correlation to reduced generation reliability.

CALL TO ACTION:

- Advocate for Regulatory Reform: Engage in dialogues at state and federal levels to support regulatory changes that foster better gas-electric coordination.
- Engage in Collaborative Problem-Solving: Participate in forums and working groups, such as the NARUC GEAR or PJM's Electric Gas Coordination Senior task force, to collaborate on national level solutions and best practices for gas-electric coordination.
- Evaluate reliability improvements along with cost reductions for DER: Incorporating bulk generation reliability risk into evaluation criteria for distributed resources can have a significant impact on the feasibility analysis of these resources. DER should be viewed as reliability hedges in addition to expense offsets.
- Invest in diverse fuel sources: Consider the just-in-time delivery risk for the cooperative's market when evaluating generation investments. Consider dual fuel units (Nat gas & propane), Diesel/Oil generation, Solar + Storage etc. in lieu of natural gas alone.
- Consider the implications of gas and electric market coordination efforts (or lack thereof) in the cooperatives risk management plan.

GAS AND ELECTRIC MARKET COORDINATION

The generation system's shift towards natural gas as the predominant fuel source introduces a layer of risk that could potentially compromise the reliability of this energy source. The delicate balance of supply and demand, coupled with logistical constraints, underscores the vulnerability of our energy systems to unforeseen disruptions. These risks manifest themselves in the form of both physical as well as capacity vulnerabilities. Indeed, every portion of the United States faces one or more of these risks. In the east, insufficient pipeline capacity often results in delivery curtailments during winter peaking events or even the import of liquified natural gas (LNG) when the capacity is severely constrained. In numerous portions of the country, in particular the southwest, insufficient weatherization techniques have resulted in natural gas generation that is

unable to start when needed most. This is particularly worrisome in light of the fact that the industry's natural reaction to intermittent resources is oftentimes backing them up with natural gas peaking resources. This means the weatherization risks peak often coincides with the most critical hours of the year for these resources.

Actual performance, in particular during recent winter extreme weather events, highlight the issues in question. We begin by looking at outages during Winter Storm Uri in the ERCOT market. In figure 1 below, one can clearly see that the bulk of the unexpected outages were due to natural gas generation. These natural gas outages were primarily attributed to weather-related issues with equipment and fuel limitations following closely behind. In FERC's final report on the issue, NERC CEO Jim Robb was quoted as saying "The FERC-NERC-Regional Entity Staff Report also highlights the need for substantially better coordination between the natural gas system and the electric system to ensure a reliable supply that nearly 400 million people across North America depend upon to support their way of life."



Net Generator Outages and Derates by Fuel Type (MW)

Wind and solar MW values based on estimated lost output due to outages and derates from slides 15 and 16. Figure 1: ERCOT Net unexpected generator outages by fuel type during Winter Storm Uri

Similarly, during winter storm Elliot, PJM and MISO experienced similar failures to their natural gas fleets. In Figure 2 below, one can see that some 37 percent of PJM's gas fleet experienced outages, compared to 16 percent of coal and 11 percent of all other sources. Figure 3 highlights the same data for the MISO RTO during Winter Storm Elliot reflecting similar performance.



Figure 2: PJM Forced outages during Winter Storm Elliot

Gas supply availability contributed to increased unplanned outages, particularly in the afternoon, that pushed MISO into emergency procedures



MISO System-Wide Daily Average Unplanned* Generation Outages by Fuel

Figure 3: MISO outages by fuel type during Winter Storm Elliot

We do not see these recent events as an indictment of natural gas supply nor generation. However, they do highlight the reliability concerns for this key fuel source. The question then becomes, 'Can these issues be resolved in the near term while simultaneously expanding the natural gas generation fleet significantly?' In some cases, the answer may be "yes," in particular when weatherization is a fairly simple fix and capacity is plentiful. In cases requiring expansion of capacity, this is an entirely different hurdle. Capacity expansion will likely require permitting and regulatory reform in order to build new pipelines in a timely manner, within budgetary constraints. Balancing the risks and investing appropriately to maintain reliable supply to cooperative members will require significant research, market understanding as well as local knowledge. Cooperatives are uniquely positioned to effectively navigate this uncertain future. However, advocacy, planning, engagement, and education will be the keys to our success.

Update to April 6, 2021 Preliminary Report on Causes of Generator Outages and Derates during the February 2021 Extreme Cold Weather Event ERCOT Public. 2021.

Robb Jim, Final Report on February 2021 Freeze Underscores Winterization Recommendations ", 16 Nov, 2021, <u>https://www.ferc.gov/news-events/news/final-report-february-2021-freeze-underscores-winterization-recommendations</u>

Inquiry into Bulk-Power System Operations during December 2022 Winter Storm Elliott October 2023 FERC, NERC and Regional Entity Staff Report.

Overview of Winter Storm Elliott December 23, Maximum Generation Event Reliability Subcommittee. 2023. MISO, Resource Adequacy Subcommittee report.

Virtual Power Plants

OVERVIEW:

Distributed Energy Resources (DER) are proliferating in homes and businesses across cooperative service territories. Cooperatives have an opportunity to engage with their members in installation, support, and operations of DERs with careful planning with their membership. When done in combination with an appropriate mix of hardware and software options, the cooperative can have access to member-owned technologies to create a 'virtual power plant' (VPP). A key issue is having the software system in order to monitor and control DERs, a DERMS – DER Management System.

CALLS TO ACTION:

Cooperatives should:

- Have discussions with members concerning their ability to have their technologies available for VPP inclusion education of members is imperative to reach the goals of a VPP.
- Define a listing of technologies that qualify to be a DER for potential control and inclusion in a program. This could vary depending on multiple factors at different cooperatives.
- Study member incentives versus cooperative revenues streams for the VPP need to ensure there is a proper payback before investing in a program.
- Study potential software solutions in order to manage the technologies under control DERMS, implement a software solution that is capable of communicating with multiple vendors/technologies; since there are so many different vendors involved on the member side of the meter, open APIs are a must.
- Ensure a robust communication network is available at member locations without reliable communications, a VPP cannot be considered reliable.
- Consider inclusion of the VPP in the power supply portfolio once the program scales and is reliable. Also, the cooperative can review market options to allowed enhanced revenue recovery for operating the VPP if in an organized market.

DETAILS:

At the time of this writing, this country is facing colliding dynamics that are affecting the costs and reliability of the power markets, whether organized (RTO/ISO) such as ERCOT, MISO, PJM, SPP, etc. or bilateral (non-RTO) regions, such as the Northwest: BPA; Southeast: TVA, Southern, Duke; etc. The effects are causing grid UN-reliability where load shed events are occurring as expected instead of exceptional as in the past. Nationwide, system operators who are charged with keeping the grid balanced (i.e., enough resources to serve load) are redefining energy adequacy plans. Considering that electric utilities traditionally have goals of delivering safe, affordable, and reliable power, these goals are becoming more and more challenging to achieve.

- Environmental concerns have evolved today's power generation to now include renewable energy, such as solar and wind technologies. While these renewables drive to replace fossil fuel generation to emit lower or no carbon and other pollutants into the air, they are unintentionally driving the electric grid out of balance. Why is that? Because renewable energy generates when the sun shines and the winds blow (called intermittent power"). When the sun doesn't shine and the winds don't blow, some other kind of power generation must run (called "dispatchable power") and/or batteries must discharge and/or load is reduced from distributed energy resources (DERs) or load shedding so that utility resources meet load keeping the grid in balance. Think about your personal usage of electricity, you don't turn off your appliances when the sun goes down or the wind stops blowing, so there needs to be something that can step up when these intermittent resources do not run - like power plants, batteries and/or DERs.
- Battery/storage technology is the promising, hopeful answer; however, the technology is new for grid usage. As more and more utilities implement storage technologies, the learning curve on how to successfully use batteries becomes shorter. In addition, battery/storage technologies continue to be researched using different materials to improve efficiency and costs. Today battery costs are a driver to the slower implementation of the technology.
- Extreme weather events have certainly been a concern and the number of extreme events is not decreasing. We are not stating what is at fault here, but addressing the fact that extreme events are adding to the concern of grid reliability and stability. From Winter Storm Uri in 2021 to Winter Storm Elliott in 2022, rolling blackouts are now becoming expected not exceptional. Lessons learned are accuracy of short-term load forecasts, weatherizing instrumentation and other components of generation plants, fuel supplies and inventories and natural gas pipeline conditions are just a few solutions. We are now seeing electric utilities and independent power producers planning to build new traditional generation (mostly natural gas facilities) and delay coal retirements. These traditional generation resources are needed to keep the grid balanced when renewable generation is and is not generating but are contrary to net zero emissions goals. It's a vicious cycle: more renewables, more grid balancing, more generation needed to balance, more building of new traditional power plants, more orders for power plant parts, more fuel supply for those power plants, more natural gas supply and pipelines needed, and so on.
- Artificial Intelligence (AI) is not just a new buzz word for Generation Z, it is an upcoming, transforming technology which is changing how we live our lives from giving commands to Siri on your Apple iPhone to using AI-drawn likenesses of celebrities in advertisements (without their knowledge/compensation). It is a rapidly developing field which has progressed quickly from machine learning and autonomous responses to decision-making, natural language processing, vision and speech recognition and generation. The scale of AI potential is dependent on speed and efficiency of processors. Thus, providers of AI systems, like Amazon Web Services, Google and Microsoft are racing to build data centers as they compete for AI market share. These data centers are high energy users as well as high water users. Prior to AI, the need for speed and processing capabilities has

been driven by cryptocurrency data miners. Now combined, sources to provide electricity to these energy hogs are being depleted effecting utility plans for normal native load growth.

DERS and VPPS

The utility use of Distributed Energy Resources (DERs) is in order from both distribution and wholesale perspectives. Utilities need to recognize that Prosumers are intentional and not a fad and that Aggregators can come between the utility and its consumers/members. The solutions involve using DERs as load management tools and Virtual Power Plants (VPPs).

Who are Prosumers? The graphic below depicts the Department of Energy's definition of Prosumer. "Simply put a prosumer is someone who both produces and consumes energy...Prosumers are growing in the energy space as more Americans generate their own power from distributed energy resources. This is most often accomplished through rooftop solar panels and electric vehicles. Gone are the days when electricity consumption was a one-way street. Today's electric grid is blurring the lines between power generation and consumption."⁷



Office of Energy Efficiency & Renewable Energy » Consumer vs Prosumer: What's the Difference?

What are Virtual Power Plants (VPPs)? The graphic below depicts the Department of Energy's definition of VPPs. "Virtual power plants, generally considered a connected aggregation of distributed energy resource (DER) technologies, offer deeper integration of renewables and demand flexibility, which in turn offers more Americans cleaner and more affordable power.⁸

⁷ <u>https://www.energy.gov/eere/articles/consumer-vs-prosumer-whats-difference</u>

⁸ <u>https://www.energy.gov/lpo/virtual-power-plants</u>





The Pathway to Virtual Power Plants Commercial Liftoff is a determined effort by the Department of Energy to explain the value and potential of VPPs that "could expand the US grid's capacity to reliably support rapid electrification while redirecting grid spending from peaker plants to participants and reducing overall grid costs."

From the website: https://liftoff.energy.gov/vpp/, "VPPs are aggregations of distributed energy resources (DERs) such as smart appliances, rooftop solar with batteries, EVs and chargers, and commercial and industrial loads that can balance electricity demand and supply and provide grid services like a traditional power plant."

The Pathway involves 5 imperatives:

- 1. Expand distribution energy resource adoption with equitable benefits.
- 2. Simplify VPP enrollment.
- 3. Increase standardization in VPP operations.
- 4. Integrate into utility planning and incentives.
- 5. Integrate into wholesale markets.



All that to say, the biggest proponent to DERs and VPPs is the federal government whose message is DERs and VPPs, if implemented at fullest potential, produce clean energy and assist in grid reliability and operations, all for making energy affordable to the consumer by deferring grid investments, avoiding fuel costs and compensating prosumers.

Markets, like RTOs, are placing value on VPPs as they are large grid operators. FERC has established Order 2222 for utilities to submit VPPs into their markets to count as power supply resources; At the time of this writing, ERCOT has its Aggregate Distributed Energy Resource (ADER) pilot program ongoing. Aggregation incites third parties the opportunity to approach consumers with incentives to participate in their VPP programs. Cooperatives need to take notice – cooperatives are natural aggregators, and we do not want third parties stepping in between us and our members.

BENEFITS

The benefits of DERs and VPPs to the utility are three-fold: 1) to manage your billing determinant in your wholesale generation and transmission rates by incentivizing DER operations as your load management tools, and 2) to take advantage of the DERs that are being implemented on your system and even encourage members to implement DERs by designing VPP programs that benefit the utility's power supply and transmission costs while benefiting the consumer/member's DER investments. These efforts are consistent with the federal government's message – making energy affordable to the consumer. Finally, 3) to further your engagement with your members – once someone else is present, there's another voice for your member to hear whose messages may be different from yours.

Billing Models

OVERVIEW:

Most members are likely familiar with the billing and collections departments of their respective electric utility. These are the individuals that compile monthly data and prepare a unique bill for the services provided to consumers for that given month. In addition to the billing department, the collections department includes those who collect payments or must serve as a collection agency for delinquent accounts or unsettled debts. In addition to these common practices, these departments have grown in complexity as members continue to request more options and services from their cooperatives.

CALL TO ACTION:

- Billing complexity is a major concern—markets, distributed generation, supply as a service, interruptible rates, and the addition of non-electric services, such as broadband, all have the potential to disrupt traditional billing practices.
- A cooperative's ability to bill appropriate rates for various products and services, providing summary billings, and the ability to offer multiple billing methods is paramount to members' satisfaction.
- Cooperatives must analyze their collections process to place priority and determine which lines on a member's bill get paid first and whether electric disconnection is allowed for non-payment of other services (may be dependent on regulation).
- The many collection models (i.e. in-house, third-party, legal), the cost to collect a delinquent account, and the growing methods of payment (i.e. virtual wallets) must be taken into consideration when determining and justifying the variety of options a cooperative chooses to implement.
- To mitigate risk amongst a cooperative's members, adequate deposit amounts and qualifications for a deposit must be determined and re-evaluated, as necessary.
- A cooperative must manage the integration of many systems, which include, but are not limited to, Consumer Information System (CIS), Financial Information System (FIS), bill print, and payment collection vendors.
- The determination of how data is tracked to ensure accuracy and that it remains the property of the member is paramount in managing these systems.
- The integration of billing and collections modules into other services and accounts receivable functions (i.e. pole attachments, insurance claims) must be considered in addition to many member financing options (i.e. on-bill, third party).
- With only small number of proprietary products as CIS/FIS vendors for a cooperative to consider, the necessity for these vendors to adapt to third-party integration and the cooperative's specific needs remains an important decision a cooperative must make when deciding which vendor(s) they choose to partner with.
- The increasing costs of bill printing and postage continues to drive a cooperative's desire to shift members to paperless billing and electronic payment options, in addition the

increasing credit card and transaction fees—and who should be responsible for these costs—must be determined by the Cooperative (may be dependent on regulation).

 Most billing platforms allow for scaling which can incorporate billing certain services for other entities. Cooperatives can use this functionality to develop partnerships in an otherwise competitive area. Example, some cooperatives are actively billing sewer for the local municipal to prevent territorial fights and some are billing for a local fixed wireless companies as a way to help reduce administrative costs thereby allowing the company to grow faster and provide the service to more members.

Data Analytics and AI

OVERVIEW:

In the future, cooperatives will need to adapt to a new culture. To remain successful, electric cooperatives will need to modernize their communication infrastructures, billing systems, and the skill sets of their staff to ensure that their data is properly managed and analyzed to drive better decision making. Maintaining a competitive edge in data analytics will be crucial for cooperatives in an ever-changing customer dynamic as the industry continues to evolve.

CALL TO ACTION:

- Avoid the underutilization of data due to its volume and complexity.
- Consider cyber security Increased reliance on digital systems is likely to leave the industry vulnerable to cyber-attacks.
- Focus on the navigation of regulatory and compliance environment concerning data privacy, data ownership, and more rigorous reporting requirements.
- Remember that keeping pace with rapidly updating technologies can prove costly and difficult to implement, especially for smaller cooperatives with limited resources.
- Guard against that lack of access to skilled data analytics resources, which can lead to raising costs as electric cooperatives face competition in hiring and retaining talent.
- Be mindful of the requirements to upgrade systems and communications networks to accommodate data collection, storage, and analytics tools and technologies.
- Integration of new technologies and "Big Data" with legacy systems can be problematic, plan ahead.
- Ensure the implementation of an effective data segmentation policy to manage the flow and validation of data.
- Consider hiring employees with an understanding of and experience in data science.

DETAIL:

To successfully bind all aspects of an electric cooperative's finance, accounting, and other departments, the use of data analytics must be strongly considered. It has been proven that timely and accurate data being used in the correct manner can elevate an electric cooperative to levels of greater efficiency and quicker adaptation than ever imagined. Embracing data-driven innovation will continue to propel electric cooperatives into a future increasingly reliant on ever evolving technologies. Ultimately, recognizing and preparing for the shifts in how employees and members think will continue to strengthen the culture and ensure electric cooperatives continue to grow for decades to come.

Electric Cooperatives are currently undergoing significant changes, made possible by the emergence of smart grids, the Internet of Things (IoT), and an increasing variety of "Big Data". For example, over the last two decades, a transition from automatic meter reading (AMR) to

advanced metering infrastructures (AMI) has marked a leap in meter data collection. The introduction of AMI has facilitated the supply of real-time data on energy usage, enabling operations such as outage identification and load management. However, this revolution seen in metered data represents just one of many data sources that the utility industry can expect to see develop in the future. Some of the most relevant data sources electric cooperatives leverage include transmission, distribution, meter, asset, and geographic information system (GIS) data. Nevertheless, most data that is drawn from these sources remains underutilized due to its volume and complexity, leading to a scenario known as "rich data and poor information."

With the use of assistive technologies such as IoT devices and Artificial Intelligence (AI), these vast data sets are increasingly finding a way to emerge as valuable operational intelligence. Additionally, the deployment of IoT technologies will increase the volume of data that can be collected. From basic sensors to the deployment of drones, cooperatives will have access to new sources of data that have long been untapped. Challenges created by the increased volume and complexity of data will require leveraging broadband networks, as well as the assistance of advanced algorithms, AI, and machine learning techniques.

Real applications of data analytics in the utility industry span from improved demand forecasting to energy efficiency programs, as well as predictive maintenance and reduction of systems losses. Additionally, the future of data analytics is expected to enable more dynamic rate structures, improved demand-side management, and better customer engagement. Recent progress notwithstanding, the most daunting challenge remains with data governance. As of late, data security concerns have been heightened by the advent of cyber-attackers compromising utility infrastructures. This growth will require new paradigms in the analytics of data, including decisions on where the processing of that data should take place, in the cloud or at the edge. Furthermore, challenges exist in establishing data ownership and integrating new technology within legacy systems while maintaining data integrity.

Increasing Financial Needs

OVERVIEW:

Since the creation of electric cooperatives in 1935, following the establishment of the Rural Electrification Administration (REA) by President Roosevelt, the industry has rapidly changed. An industry that has passed through multiple generations still stands strong today as the financial growth and stability of electric cooperatives has continued to be the backbone of the cooperative industry's model. Electric cooperatives have adapted to the shifting dynamics and cultural changes of the American population for nearly a century and are poised to tackle any future changes head-on. With significant growth on the horizon, as well as the need to bolster generation, transmission and distribution investments to meet not only growth but reliability expectations, cooperatives have significant and increasing financial needs.

CALL TO ACTION:

- Cooperatives should seek to understand and navigate all available financing options, including, but not limited to, the Rural Utilities Services (RUS) (formerly REA), National Rural Utilities Cooperative Finance Corporation (NRUCFC) and CoBank.
- More and more cooperatives are engaging in significant subsidiary activity. This
 heightens the need to implement financial strategies that could be more perceived to
 more align with for-profit industries. This may include unique tax strategies, sources for
 funding, separate financials, debt planning, depreciation schedules and the potential of
 learning entirely different set of GAAP standards.
- In an effort to ensure reasonable carrying costs for debt issuance (public and private), Cooperatives should consider acquiring a credit rating (e.g. Fitch, Moody's, S&P Global Ratings).
- Cooperatives should evaluate market-based funding sources and debt issuance where its needs are not being met by the traditional 3 cooperative lending institutions.
- Cooperatives should remain vigilant in reviewing the ever-changing finance regulatory and compliance environment, ensuring that the cooperative adheres to appropriate financial and accounting rules and regulations.
- Cooperatives should manage interest rate risk by considering the deployment of interest rate risk management tools to avoid a "set it and forget it 30-year rate," or they may consider engaging in secured swaps (may not be permitted by your respective lender).
- Cooperatives should evaluate and consider its Legal entity 501c (12) designation (remembering capital credit compliance requirements in maintaining this designation).
- Other items to be considered by the cooperative include, but are not limited to, the USDA (RUS) Annual Form 7 Financial filing, State Commission oversight requirements (if applicable), IRS Form 990 (consider making this public information), the 85/15 rule, and Board of Directors governance requirements (these vary by state).
- Cooperatives must be ever mindful of the required financial covenants in maintaining the financial health of the cooperative.

- Treasury/Cash Management must remain a priority for electric cooperatives, given the increase in financial frauds, in addition to the nature of how we manage the treasury and cash management functions, integrating these tasks is an important consideration and should not be taken lightly.
- Mitigating risk and ensuring large receivables has continued to become more relevant for electric cooperatives as the industry continues to change and the size, membership makeup, and level of regulation varies by each Cooperative.

DETAIL:

The utility industry is a very capital-intensive industry. With growth, maintenance upgrades, broadband deployments, and transmission and generation investments, it is clear that cooperatives need access to significant capital now more than in recent decades.

Many cooperatives are experiencing annual meter growth well above the 2% number that they have seen in years past. A number of cooperatives bordering metro areas across the United States are seeing regular annual growth rates of more than 10% new connections per year. With supply chain challenges over the past few years, material costs in some cases have doubled. Further, competition to keep workers have push labor rates up significantly as well. Combine these issues with extreme growth and cooperatives are seeing significant capital requirements just to keep up with their normal growth. It is not unusual that cooperatives annual capital requirements just for electric purposes have more than doubled in the past 5 years.

An additional burden for many cooperatives has been the establishment of broadband service to their members. While the members enjoy the new services being provided by their cooperative, the cooperative has to fund this additional business. With passing costs being \$5,000 or more per passing (even more in rural areas), capital needs are significant for the successful buildout of broadband systems.

Large loads (called Megaloads in this paper) are also causing significant capital expenditures in transmission and substation assets.

Many cooperatives need new and updated office facilities which just adds one additional large item on the capital needs list. With the cost of commercial construction ticking up significantly, those cooperatives that have a need to expand or add new offices will be adding offices at a time when prices are as high as they have ever been.

With these and other pressures, it is clear that successful financing is paramount to the success of many electric cooperatives across the nation.

Physical and Cyber Security

OVERVIEW:

In today's interconnected landscape, cooperatives encounter numerous cybersecurity challenges, necessitating proactive steps and the establishment of cybersecurity standards to reduce risks effectively. Cooperatives prioritize physical and cybersecurity measures to safeguard their assets and operations amidst these increasing challenges. Various factors come into focus when assessing the current landscape and highlight the primary drivers behind these increased threats and obstacles. These factors include the convergence and growth of information technology (IT) and operational technology (OT), work force challenges, the shift towards cloud adoption, and the growth of distributed energy resources (DERs).

With this rapidly changing, fast-paced growth landscape, cooperatives recognize it is crucial to incorporate security by design principles and adopt a cyber-informed mindset to establish cybersecurity as an intrinsic element rather than a bolt-on solution. While cybersecurity can be inherently challenging, cooperatives are moving the needle by taking a proactive and vigilant stance and implementing cybersecurity baseline standards to reduce cooperative security risk. Because risk is ongoing, cooperatives should consider the actions below to establish or bolster their cybersecurity baseline and review these actions regularly to adapt to an evolving landscape. Prioritization, documentation, monitoring and protection are important for adapting to evolving changes and new information gained in the call to action below.

CALL TO ACTION:

- Develop comprehensive incident response plans, business continuity plans, and risk mitigation strategies, which should designate the team's roles and responsibilities.
- Plans such as the incident response plan and others noted above should be tested through tabletop exercises such as NRECA's live tabletop exercises and downloadable toolkit scenarios.
- Conduct a Cybersecurity and Physical Security Risk Assessment by reviewing potential vulnerabilities and threats facing the cooperatives' assets. This includes identifying the likelihood and potential impact of various cyber threats, evaluating the effectiveness of existing security measures, and prioritizing risks based on severity and likelihood. Then, develop targeted strategies to address and mitigate identified risks.
- Develop a cybersecurity and physical security policy that sets clear guidelines and requirements (e.g., acceptable use for cooperative assets), and how the policy will be applied and monitored (e.g., logging visitors).
- Implement segmentation measures to delineate IT and OT environments, establishing clear boundaries between systems and networks, identify and document data flows, communication, and dependencies between IT and OT, as well as prioritize these dependencies and develop mitigation strategies based on associated risk.
- Establish cybersecurity and physical leadership and culture at the cooperative by designating an individual responsible and with authority, resources, and support for all

cybersecurity and physical security matters, defining their role with incident response, planning, and budget allocation; this individual will guide strategic objectives for security posture improvement within the cooperative.

- Identify critical assets by conducting an inventory of the organization's digital assets, collaborating with stakeholders across the cooperative to identify critical assets crucial for operations, finances, and compliance and ensure stakeholders are trained on the importance and methods of their protection.
- Take advantage of NRECA's Resources, including the Co-op Cyber Goals Program, Threat Analysis Center, and the Annual Co-op Cyber Tech Conference to leverage a community of co-op cybersecurity experts.
- Join groups such as Cyber Mutual Assistance; this allows cooperatives to request or provide help to other cooperatives in the group with confidentiality.
- Establish cybersecurity and physical security points of contact prior to an incident (e.g., cyber insurance) and federal, local, and public-private partnership relationships (e.g., E-ISAC, FBI, and DHS).
- Require cybersecurity and physical security training for all employees—security is everyone's job, including the C-suite and Board of Directors. This training is not a one-and-done training all it takes is for someone to click on a phishing email for a cyber breach event to occur.
- Perform Physical Security Assessments, as many of the physical security measures are important for cybersecurity as well.
- Practice due diligence in selecting and working with a Managed Service Provider (MSP) or Managed Security Service Provider (MSSP) and conduct regular cybersecurity and physical security checks to provide verifiable information including understanding their security policies and procedures. Reference resources such as NRECA's Managing MSP Cybersecurity Advisory.

ESTABLISHING CYBER AND PHYSICAL SECURITY BASELINES WITH A RISK-BASED APPROACH

Performing the actions above helps cooperatives achieve a cybersecurity and physical security baseline from which to measure against and improve upon. Implementing baseline security standards is a fundamental component of adopting a risk-based approach to cybersecurity. It also allows cooperatives to identify risks and gaps, plan around and prioritize identified risks, create mitigation strategies, and implement actionable measures to improve their security posture. Central to a risk-based approach is recognizing that cooperative resources are limited, as many cooperative employees wear multiple hats. Defining appropriate job roles and skillsets and promoting ongoing cybersecurity and physical security training is paramount to efficiency in roles.

A risk-based approach allows cooperatives to focus resources, both personnel and financial, where they will have the greatest impact. Performing both cyber and physical assessments to identify risks, vulnerabilities, threats, and potential impacts on the organization's operations, finances, reputation, and compliance is extremely important. To effectively identify critical risks, cooperatives should discuss their security risk at the executive and board levels to ensure a

holistic approach and create a positive security culture and focus at the cooperative. Cooperatives can also conserve resources by embracing an area where they shine: cooperative principle number six, "Cooperation Among Cooperatives." Through this community approach and sharing best practices, threat intelligence, and lessons learned, other cooperatives can strengthen security resilience across the cooperative landscape.

Once risks have been identified, understanding the occurrence and the magnitude of their potential impact on a cooperative will allow them to build a long-term cybersecurity plan or strategy to establish baseline cybersecurity standards that prioritize risks and allocate resources, accordingly, focusing on those with the highest potential consequences first. Risk mitigation strategies can take various forms, including implementing technical controls, such as multifactor authentication, firewalls, backups, encryption, intrusion detection systems, and non-technical security measures like policies, procedures, and employee training programs.

One key aspect of implementing baseline cybersecurity and physical security standards is establishing clear guidelines and requirements for protecting critical assets and systems. These standards typically cover a range of security topics, including access control, both from a physical and cyber perspective, network security, data protection, and incident response.

By implementing these baselines, cooperatives can help to reduce the likelihood and impact of a cyber or physical event. This action helps protect the cooperatives' assets and data and reduces the risk of supply chain disruptions and potential impacts on their members. Furthermore, baseline security standards provide a common language and framework for communication and collaboration within and across cooperatives.

One area for cooperatives to consider going forward is the expansion of standard cybersecurity reporting metrics, such as the total number of security events at the cooperative, to a more cyber risk quantification model that measures the potential financial impact of a cybersecurity incident if it were to occur. As cyber risk quantification technologies begin to advance, assessing the potential financial impact of a cybersecurity breach enables allocating resources to specific areas, reducing the potential financial impact of a cyber incident. Whether using such a quantification model or not, cooperatives should continuously evaluate their cyber posture to ensure they are making progress from their baseline using a risk-based approach, as the threats continue to evolve.

Risk Management

OVERVIEW:

Electric cooperatives face increasing challenges and opportunities in the rapidly changing energy landscape. Some of the factors driving this change include:

- The growing demand for clean, renewable and distributed energy resources from consumers and regulators and pressure from outside groups for governance and sustainability initiatives.
- The rising threats of cyberattacks, physical attacks, natural disasters, and climate change impacts on the electric grid.
- The need to modernize and upgrade the aging infrastructure and technology of co-ops to enhance reliability, resilience, and efficiency.
- The impact of experienced staff retiring or leaving the cooperative, and the difficulty in attracting and retaining new talent to take their place.
- If the cooperative is managing its own power supply, stability and costs of energy are important to manage.

To adapt to these changes and meet the expectations of their members and stakeholders, co-ops need to implement effective risk management strategies that can protect their assets, operations, and reputation from potential hazards and disruptions.

CALL TO ACTION:

- Appoint a risk management team and leader. Depending on the size of the cooperative, this may be its own department, or it may be a more informal group of employees.
- The team and the leader should have the authority, resources, and expertise to oversee and coordinate the risk management activities across the co-op. Without authority for the risk management team and buy-in from the whole co-op, changes will be difficult to make and can often stall when faced with resistance from others in the organization.
- Communicate and collaborate with other co-ops, industry partners, and other utilities to ensure the co-op is effectively managing risk and staying up to date on best practices. This communication and collaboration leverage the experience and resources of others to the advantage of the co-op.
- Take a proactive rather than reactive approach to risk management.

DETAIL

As a co-op leader, you have a responsibility to ensure the safety, security, and sustainability/longevity of your organization and community. Co-ops are uniquely positioned in that all or most of their employees live in the territory they serve. The risk management team manages risk for the co-op itself while improving the community and environment that the co-op serves. You need to take proactive steps to identify, assess, and respond to the risks that could

affect your co-op's performance and viability. You also need to communicate and collaborate with your peers, partners, and regulators to share best practices, lessons learned, and innovative solutions. By doing so, you cannot only reduce the likelihood and impact of adverse events, but also seize the opportunities to improve your co-op's competitiveness, financial security, and member satisfaction.

APPOINTING A RISK MANAGEMENT LEADER AND TEAM

The first step in developing a risk management program is to appoint a leader and a comprehensive representative team within the organization responsible for developing the risk management plan with appropriate authority to implement the plan. Depending on the needs of the co-op, this may be a cross-departmental group or a dedicated department.

DEVELOPING AND IMPLEMENTING A RISK MANAGEMENT PLAN

A risk management plan is a document that outlines the objectives, scope, methods, and actions for managing and responding to the risks and opportunities facing an organization. A risk management plan can help co-ops to:

- Establish a clear and common vision and direction for risk management among co-ops and their stakeholders.
- Identify the most significant and relevant risks and opportunities for co-ops.
- Assess the likelihood, impact, speed of onset and organizational readiness for each risk for co-ops and prioritize them accordingly.
- Select and implement the most appropriate and feasible risk response measures and solutions for co-ops. Responses may include transferring, avoiding, mitigating, or accepting the risk.
- Monitor and measure the performance and effectiveness of the risk management plan and actions for co-ops.
- Review and update the risk management plan and actions for co-ops based on the feedback and lessons learned.

THE BENEFITS AND CHALLENGES OF RISK MANAGEMENT FOR CO-OPS

Risk management is the process of taking actions to reduce the exposure and vulnerability of an organization to potential threats and uncertainties that could affect its objectives and performance. Risk management can help co-ops achieve the following benefits:

- Enhance the reliability and resilience of the electric grid and the co-op's operations. By identifying and addressing the potential sources and consequences of disruptions, co-ops can prevent or minimize the impact of outages, damages, and losses on their assets, operations, and members.
- If the cooperative is managing its own power supply, volatility in the power markets must be addressed. Risk management includes the approach to purchasing power supply and natural gas hedging.

- Improve the efficiency and effectiveness of the co-op's processes and resources. By
 optimizing the allocation and utilization of the co-op's human, financial, and physical
 resources, co-ops can reduce their costs, increase their revenues and improve their
 quality of service.
- Strengthen the reputation and trust of the co-op and its stakeholders. By demonstrating their commitment and capability to manage risks, co-ops can enhance their credibility and confidence among their members, regulators, partners, and communities.
- Foster the innovation and growth of the co-op and its opportunities. By exploring and exploiting the potential opportunities and benefits of the changing energy landscape, co-ops can diversify their products and services, expand their markets, and increase their value proposition. By evaluating risks, opportunities can be identified to manage the risk while providing additional value to members and/or employees.
- Pivot from a reactive to proactive stance in managing risk. By developing a risk management plan, co-ops can identify potential areas of risk in advance, develop a plan to respond to each risk, and stand ready if or when the risk emerges. A proactive stance allows the co-op to be seen as a partner rather than an adversary to regulators and the community.

However, risk management also poses some challenges and barriers for co-ops, such as:

- The complexity and uncertainty of the risks and opportunities facing co-ops. Co-ops need to deal with a wide range of risks and opportunities that are interrelated, dynamic, and evolving, requiring constant monitoring, analysis and adaptation.
- The lack of resources and expertise for risk management among co-ops. Co-ops may have limited access to the financial, technical, and human resources and expertise that are needed to implement effective risk response measures and solutions. Working with trusted partners can effectively multiply your efforts and fill in the gaps in the cooperative's knowledge and capacity.
- The resistance and inertia to change among co-ops and their stakeholders. Co-ops may face some cultural, organizational, and institutional barriers that hinder their willingness and ability to adopt new practices, technologies, and partnerships for risk management.

Therefore, co-ops need to overcome these challenges and barriers by developing and implementing a risk management plan that is tailored to their specific needs, goals and context. Buy-in from the organization and support from management and the board of directors is important in overcoming resistance to change from those within the organization. The risk management plan should be a living document that is reviewed periodically and updated to address emerging risks and opportunities specific to your cooperative.

Supply Chain

OVERVIEW:

Electric cooperatives face significant challenges in their supply chains in the aftermath of the global COVID-19 pandemic and other factors. These challenges hinder their ability to provide reliable electric service, restore power after natural disasters and meet increasing electricity demand. Key issues include:

- Long lead times for essential equipment like distribution transformers, large power transformers, digital meters, and electrical conduit.
- Shortages of raw materials such as polyvinyl chloride (PVC) and grain-oriented electrical steel (GOES) used in manufacturing electric infrastructure.
- Logistics problems such as port congestion, container scarcity, and increased transportation costs.
- Project deferrals or cancellations due to supply unavailability or affordability.
- Reduced stockpiles and inventory levels limiting the response to emergencies.
- Grant requirements for domestic sourcing where it's inadequate.

These disruptions impact the reliability, resilience, affordability and sustainability of the electric sector and hamper initiatives aligned with policy agendas or infrastructure laws.

CALL TO ACTION:

Electric cooperatives must proactively address these challenges and mitigate their impacts through collaborative efforts:

- Engage with suppliers, vendors, and logistics providers to understand supply chain issues and explore alternative solutions.
- Adjust ordering strategies and inventory management to anticipate demand and secure adequate supplies.
- Leverage relationships with other cooperatives, associations, and organizations to share information and resources.
- Educate lawmakers and advocate for federal policies supporting sustainable supply chains.
- Engage members and stakeholders to explain challenges and solicit cooperation.
- Establish internal standards committees to minimize impulse buying.
- Evaluate current procedures and ensure effective management and control.
- Recognize and manage the cyclical nature of the supply chain.

Taking these actions can help ensure the continued provision of safe, reliable, and affordable electric service to communities while advancing cooperative goals and values.

BEST PRACTICES

- Long Lead Times: Essential equipment like distribution transformers continue to face significantly extended lead times, resulting in project delays and reduced inventory levels.
- Shortages of Raw Materials: Raw materials such as PVC and GOES are in short supply due to production constraints and trade restrictions, increasing costs and lead times.
- Logistics Problems: Port congestion, container scarcity, and truck driver shortages hinder the movement and delivery of electrical equipment and components, increasing uncertainty and risks.
- Project Deferrals or Cancellations: Lack of supply availability or affordability leads to deferrals or cancellations of projects, impacting system reliability and economic development.
- Reduced Stockpiles and Inventory Levels: Limited stockpiles and inventory levels impede response to emergencies, increasing vulnerability to prolonged outages and risks.

DETAILS OF POSSIBLE ACTIONS

- Communicate with supply chain stakeholders to understand issues and explore alternatives.
- Adjust ordering strategies and inventory management to anticipate demand.
- Leverage relationships to share information, best practices, and resources.
- Advocate for federal policies supporting sustainable supply chains.
- Establish internal standards committees and evaluate supply chain processes.
- Recognize and manage the cyclical nature of supply chain dynamics.

Reliability

OVERVIEW:

Reliability, defined as the quality of being trustworthy or of performing consistently well, continues to be the top priority for the electric industry with a push to reach 100 percent uptime and not just "consistently well." As electricity and reliable power serve as one of the basic human needs in a developed country, utilities are constantly, albeit almost obsessively, improving the infrastructure, markets, and business to ensure that power is available when and where it is needed. Reliability continues to be included in industry polls as a standalone concern, but from year to year, rankings for "reliability" drop or rise based on recent events and while the focus changes to other items, reliability is a fundamental concept for all utilities.

CALL TO ACTION:

- Identify the proper channels to communicate with members who are experiencing reliability issues and continue to evolve those channels as new opportunities emerge.
- Evaluate opportunities to partner with members to increase reliability measures (eg. rebate programs for specific technology, load management programs, underground conversion of service, vegetation management programs, etc.)
- Evaluate and implement, if feasible, technology that will assist with reliability.
- Evaluate existing routine maintenance plans to make sure they are adequate and documented, insurance or regulatory requirements may dictate format or content; implement an end-to-end lifecycle asset management program and proactively plan out large capital replacements and investments.
- Are members—residential, industrial, or commercial—willing to pay a premium for increased reliability? Does the cooperative need to offer different levels of reliability plans?
- Determine how data analytics or artificial intelligence (AI) can be used to improve reliability through integration of operational data sources using high speed communications.
- Monitor and actively participate in legislative changes that impact utility operations and procedures, and risk (i.e. wildfire mitigation, storm response, changes to FEMA requirements)
- Grant opportunities and partnerships with local community entities need to continue to be a part of a cooperatives focus.

THE NEED FOR RELIABILITY

Black and Veatch conducts an annual survey that includes a ranking of the top three most challenging issues facing electric utilities. Reliability in 2018 was at the top of that list, however in 2023 it had dropped to the middle of the pack. Ranking reliability against the latest challenges is deceptive when presented in this way as it underscores the importance of reliability in and of

itself. All the challenges ranked against reliability are due to the concern of providing a reliable grid and delivering power from the generation source, whether local or remote, to loads.



Reliability is under threat from increasing natural disasters like hurricanes, tornados, floods, earthquakes, extreme temperature changes (hot and cold) and wildfires. Local generation and microgrids can assist in mitigating the longer-term impacts from these events, however the cost, size, and expense to install and maintain infrastructure to scale for the entire grid is daunting with modern day solutions, especially for smaller utilities to undertake. Grant opportunities are being made available at the federal and state level for utilities, and community entities, interested in expanding the reliability at the local level and in economically challenged areas.

Due to technological advancements in storage, and inexpensive alternative fuel such as natural gas, customers are installing behind-the-meter generation, or grouping loads and installing microgrids to supply critical loads. New technologies that provide increased efficiencies over traditional back-up generation such as home or substation-based battery systems and, in some cases, homeowners using their electric vehicle battery to power their home, are being used today. They also provide load-shaping resources during peak times, helping to economically justify the systems.

As the expectations of consumers continually increase, utilities will improve and become more efficient with existing maintenance programs and long-term planning, as well as incorporating distributed energy resources to increase reliability.

On the cooperative side, evaluating existing construction and maintenance programs can offer improved reliability and grid resilience during major events. Changes or more rigorous programs may be required due to state or federal legislation, or insurance requirements.

Increasing use of data to analyze programs and monitor the electric grid will be key to successful completion of such improvements. Currently, more than 70 percent of cooperatives are using AMI in some form and pursuing increasing grid automation through meter data management systems, automated distributed devices, and data analytics capabilities.

Behind-the-meter resources can help with grid reliability and provide consumers back-up power during outages. This could also be an opportunity for the cooperatives to offer and install the equipment, thus enabling an opportunity for utility control. In addition to traditional outage management systems, distributed energy resource management systems (DERMS) may be needed to optimize the full capacity of distributed resources behind the meter. Cooperative and consumer-owned resources will require additional communication infrastructure to bring the information back to the central office. These systems will need to be fast and two-way to realize the full potential of DERMS.

Member expectations for better reliability will continue to escalate. Cooperatives should ensure routine maintenance is being performed and appropriately budgeted to optimize timelines that result in the greatest impact on reliability indices (SAIFI, SAIDI, CAIDI, MAIFI, etc.).

Could reliability be offered as a service? Would members be willing to pay more for different levels of reliability? These are considerations cooperatives should continue to explore. Technology is available that could provide the redundancy necessary to guarantee a satisfactory level of reliability, but will members be willing to absorb additional costs to receive it?

The Need for Broadband and Communication Networks

OVERVIEW:

The need for connectivity has never been greater for cooperatives. Over the past 20 years, technology solutions, field applications, SCADA systems, and AMI data have increased the amount of data and the need for more reliable connectivity. While historically these solutions might have been provided through commercial RF or cellular networks, cooperatives continue to invest in private LTE/5G networks, fiber, and private fixed wireless systems. These communication networks are becoming the backbone of a robust network allowing cooperatives to utilize technology through their service area and beyond. Communication networks also provide new opportunities to extend devices, sensors and other field assets that will enable the cooperative to increase its reliability and respond more quickly to outages.

CALL TO ACTION:

- Cooperatives should look to invest in fiber or other communication networks that provide connectivity between substations, field assets, workers, and facilities.
- Cooperatives may see opportunities to provide dark fiber leases of building out a fiber network.
- Cooperatives who provide retail broadband service are well positioned to utilize this network for operational technologies.
- Opportunities may exist for cooperatives who have experience in building fiber networks to work with other cooperatives to assist with building out a fiber network for operational purposes that additionally provides broadband access.
- Cooperatives should explore technologies such as private LTE/5G that allow broader coverage in their service areas where the deployment of fiber networks may be cost prohibitive and would allow for additional access points to help provide even greater operational data points.

TECHNOLOGY AND COMMUNICATION USES

Advancement in technology, sensors, video equipment, SCADA systems, operational technology, and the ability to connect to the field remotely or within the office provides an opportunity to invest in broadband and communication networks. Cooperatives continue to look for ways to increase efficiency and to better connect office and field assets. Remote work practices, not to mention VOIP systems, have also increased the need for these advanced networks. Innovation in the utility industry continues to require connectivity and cooperatives that invest in this infrastructure will be able to take advantage of these technologies in the future. For example, cooperatives may wish to implement a direct load control program. Traditional load control programs used RF technology, which often was a 1-way communication signal. Newer devices may connect via cellular networks. However, even more recently these controllers are utilizing direct fiber optic connections, WiFi connectivity, and/or Bluetooth connectivity. This is just one

example in which advanced communications can be utilized to increase the frequency, speed, and reliability of communications. Cooperatives that have invested in advanced networks see increased efficiency and better connectivity.

NETWORK DESIGN CONSIDERATIONS

Cooperatives that are not experienced in building communication networks should explore working with consultants or other cooperatives that have experience. Cooperatives may want to consider overbuilding these networks, especially when constructing fiber, knowing that there will be an increasing need for connectivity. Many cooperatives have already built fiber backbones that connected substations with their offices. The next generation of networks may want to "edge-out" to ensure connectivity throughout the existing service area.

PARTNERSHIPS

Cooperatives should evaluate whether partnerships may exist that leverage existing fiber or support jointly owned fiber or wireless buildouts. In areas, where existing providers have already substantially built a network for retail broadband service, those providers may be willing to lease or sell excess capacity to a cooperative. As an example, Dominion Energy worked with several cooperative broadband providers to expand the fiber network. These sorts of partnerships can help reduce the overall cost of cost of a fiber buildout.

In addition, cooperatives should explore working with regional network operators such as, for example, Dakota Carrier Network in North Dakota, or Accord Telecommunications and Hoosier Net of Indiana. The entities often pool together resources and/or leverage fiber networks to provide broader coverage and may be willing to lease fiber to cooperatives.

SUBSTATION CONNECTIVITY

Over 20 years ago, cooperatives began discussing the opportunity to connect substations together through fiber optic cable. Prior to that, substations were connected using RF networks or microwave networks which provided communication to these substations. Some cooperatives even used dial-up modem-based communications to retrieve information. With the advancements of fiber optic cable and the amount of data that is available throughout a distribution system, access to real-time information is now available. Cooperatives at the very minimum should explore building sub-to-sub connectivity to improve this access. With the amount of data available, 4K camera systems, and real time sensors, there is an opportunity to improve substation connectivity and improve reliability.

SECURITY CONCERNS

With the advancements of communication networks and the increase presence of cyber criminals, cooperatives should be diligent in their desire to secure broadband and communication networks. As cooperatives utilize these networks for control and operation,

special attention should be considered for separating or isolating these connections from public networks.

Cooperatives that utilize advanced communication networks will be well positioned to take advantage of advancements in technology and innovation. Cooperatives who have not explored these networks should take immediate steps to review options and gain insight.

Megaloads

OVERVIEW:

Megaloads are increasing throughout the industry and creating challenges for all sizes of electric utilities, and at every level of the industry from generation to transmission, to distribution. What are "megaloads"? When searching the internet for the term megaload in 2024, the only search results are for semi-truck loads and haulers. The term is not an industry standard nor is there a definition widely available. However, all utility personnel dealing with long-term financials, power source and adequacy, and engineering and operations daily realities know exactly what it means. For this paper, and the following thoughts for leading the cooperative into the future, the REMDC committee agreed that the common distinguishing factor for a "megaload" was any single load that would require a dedicated substation or have a direct transmission connection.

CALL TO ACTION:

- Determine which department or position of the organization would be the lead for a megaload request.
- Understand the megaload and its parent company (if applicable) in order to determine financial risks in serving this load.
- Plan early for the long-term relationship; have a partnership with the megaload's owner and be the trusted power provider for the life of the project. Be creative! Engage with the megaload owner/requestor to determine if there is a way for added value for the cooperative.
- Be careful to consider all costs associated with adding the megaload to ensure the addition will not be subsidized by other rate payers.
- Appoint a project manager to ensure all aspects of a megaload project are coordinated across all departments and the cooperative's power supplier

INTRO

Megaloads are opportunities for utilities to expand revenue quickly and exponentially, but also create challenges. In some markets, acquiring the power resources for a consistent, reliable, stable, long-term power supply is difficult at best, astronomically expensive, and in some cases not even an option. Megaloads require planning throughout the organization. From a report generated by Utility Dive online in December 2023:

- U.S. electric load is growing significantly faster than grid planners previously expected, led by new manufacturing and industry and the growth of data centers, according to a Tuesday report from Grid Strategies. Electrification, hydrogen production and severe weather are also contributing. (1)
- Reports filed this year with the Federal Energy Regulatory Commission show grid planners expect nationwide electricity demand to grow 4.7 percent over the next five years while 2022 estimates called for just 2.6 percent growth. (1)

While the actual load size for a megaload cannot be defined across the industry, the general thought in 2024 is that it is exceptional in size for the size of the utility, or in other words, the megaload will singularly increase the size of the cooperative.

Megaloads are driving conversation throughout the US from coast to coast. The anticipated growth is driven by data centers (AI processing), new U.S.-based manufacturing, electrification of transportation and buildings, and building of new hydrogen plants. (2) A project sponsored by Clean Energy Initiative created by GridStrategies and published in December 2023, shows the following locations as the focus of the growth throughout the US:



PLAN NOW INTERNALLY

Cooperatives should consider and discuss even ahead of a megaload request how one would be handled. Megaload requests can involve significant resources throughout an organization, and typically are moved to a top priority based on the potential new revenue stream. However, this causes disruptions to other planned projects. By treating the situation with a pre-planned scenario, like how utilities plan and have processes and procedures for emergency/urgent planning, a cooperative can avoid having to quickly and swiftly adjust course for a potential project that may not be viable, but still creates a time sync and stress for various departments and employees. Pre-planning for the scenario also allows for leadership and the board of directors to have an understanding prior to a request of how the utility would respond, and the trade-offs that must be made during project planning and implementation as well as how their power supply contract would be impacted.

Financial impacts to the cooperative must be considered. While revenue potential is attractive, construction and operational costs should be addressed so that little or no risks are shifted to the cooperative and its members. Having a megaload pay for 100% Contribution in Aid of Construction (CIAC) and prepayment for credit and operational risks would be ideal. Any negotiation less requires the cooperative to recover costs via retail rates dependent on timely payment from the megaload. The wholesale power supply agreement and the distribution services agreement must be in sync to recover all market costs as well as distribution operational and financial costs and margin. A financial assessment on the health of the megaload and parent company (if applicable) should be conducted. The results of this assessment should be considered when terms and conditions are negotiated.

LONG-TERM PARTNERSHIP

From the start of the conversation, or even prior to a new request, cooperatives need to recognize that the megaload owner is a long-term relationship. Recognition early across the organization, including the board of directors and senior leadership, for both the risk, and potential, that megaloads bring into a cooperative's portfolio is needed. Discussion and training opportunities to discuss with other utilities that already have gone through a megaload process are opportunities that should be explored.

BE CREATIVE!

Examples exist from cooperatives where a megaload was originally denied by the utility due to the requested, short timeframe to have the substation and power resource available. Once the megaload shopped around to determine there was nowhere in the country that could accommodate the power requirements in the time period requested, they returned to the original cooperative and discussed a phased in approach that met the bulk of their requirements and allowed for the data center owner and cooperative to also discuss and negotiate a long term operating posture where the data center would defer high energy costs during peak times to another physical location in a different part of the country. If the data center owner had initiated the request originally or been led into a conversation with the cooperative for ancillary benefits.⁹

⁹ <u>https://www.utilitydive.com/news/electricity-load-growing-twice-as-fast-as-expected-Grid-Strategies-report/702366/</u>

¹⁰ <u>https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf</u>

BUSINESS FUNCTIONS

CEO/Board Functions

OVERVIEW

Strategic leadership should be provided at a cooperative through joint discussion and development between the cooperative's board of directors and the general manager/ CEO. With significant industry change coming, it is imperative that this coordination occur at electric cooperatives across the country. Related discussion and development should also be occurring between the electric distribution cooperatives and their associations—their Generation and Transmission Cooperative (G&T), their data cooperative, their statewide association, their financial support organizations and their national association and other related business partners. There is no need for any cooperative to 'go at it alone' when such resources are or can be made available to them.

Intuitively, strategic leadership starts with the GM/CEO. Many cooperatives across the country have GM/CEO's that are very adept in looking forward and preparing their cooperatives for what lies ahead. Many have developed both long- and short-term plans to prepare for what they see coming in the specific areas and communities they serve. However, there are some cooperative GM/CEOs who need assistance in the development of strategic plans and have not been actively developing such plans. In the balance of those differences, some cooperative GM/CEOs have said they don't believe the industry is really changing and there really is no need to begin preparing for change—they feel changes are decades away and that the changes happening as discussed in the industry shifts section of this report will not really affect their cooperatives. This type of thinking could challenge the cooperative business model as these industry shifts further influence cooperative membership.

KEY CONSIDERATIONS

 The GM/CEO can provide strategic leadership at a cooperative, but it will not go far without active discussion and consideration by the board of directors/trustees. Many boards are very involved in understanding the strategic direction that is being planned, developed, and implemented at their cooperative. However, some boards are taking one of two other approaches with strategic planning and development. They are either allowing the GM/CEO to do whatever they think is best and staying in the background, or—unfortunately and ill-advised—some are actively directing the GM/CEO to keep the status quo. It is obvious that neither of these options are healthy for an organization in planning and preparing for its future service to its membership.

- A large number of cooperatives are smaller and have limited number of staff to support
 strategic planning and development. Some even use this as an excuse not to exercise
 strategic leadership. There is no reason for ignoring strategic leadership. There are many
 partners who have a high level of education and assistance resources smaller cooperatives
 can tap. There are also many cases across the country where certain associations could
 have taken a greater role in helping their cooperatives prepare for the industry shifts that
 are certainly on the horizon. There are also many good examples of cooperatives that are
 working with other cooperatives to plan and prepare for the future—the resources are
 there in many cases. Cooperative leaders should be working together to prepare for the
 future. Electric distribution cooperative members expect cooperatives to have strategic
 leadership. But more importantly, they deserve to have that level of attention applied to
 the business of their cooperative.
- GM/CEOs, in many instances, have been developing executive and leadership teams at their cooperatives to better prepare for industry changes that are coming, while others have done little with their organizational structure. Those who are preparing today are charging their leadership teams with determining how best to work with cooperative resources to meet and hopefully exceed member expectations. It is doubtful the dated leadership and organizational structures at some cooperatives presently will serve the cooperative memberships' interests well when industry changes fully materialize. Cooperatives owe it to their members to consider leadership, staff, and organizational transitions that are purposed to meeting current and future service trends.
- The cooperative business model is modeled and set to answer the challenges that are coming, but the GM/CEO, the board, and the leadership teams must work together to allow the business model to work.
- The Seven Cooperative Principles guide the success and the way cooperatives respond to membership needs and wants, and the only way to achieve the goals and the ideals espoused through those guiding principles will be through effective, strategic leadership that is employed across the cooperative network.

BUSINESS FUNCTION DISCUSSION

Industry shifts that are coming will affect cooperatives in many ways. The first and most important step in determining the consequences of those changes is through strategic leadership implementation. These moves require cooperatives to truly consider what they need to do to meet and exceed member expectations going forward. The fact these changes are coming will require more strategic planning than ever before. Cooperatives need to understand what their members perceive about these shifts and how they believe their cooperatives could likely provide solutions that for-profit interests that really aren't vested in the cooperative members' best interest.

Simply put, without strategic planning and member input, how can cooperatives ensure they are meeting and exceeding member expectations? Cooperative resources are being stretched in many cases due to mounting industry changes. Not only are resources limited at many cooperatives, but the right kind of resources and leaders may not be present because a variety of

industry swings are occurring simultaneously that require different skill sets. As one example shows, several industry shifts may necessitate a cooperative to provide a widening array of competitive services to members. How many true sales and marketing professionals exist at cooperatives? As another example, data analysis and the use of artificial intelligence in the business will require data experts. How many cooperatives currently have data experts? Several IOUs across the country have shared in conference venues that they have employed dozens of data experts to analyze and use better data in their decision-making processes. Only a handful of cooperatives across the country have taken this step.

Many industry shifts will challenge boards, GM/CEOs, and leadership teams in response to intrusion of outside entrants into the cooperative industry, a sector where they seek to garner member interest in a variety of services revolving around the retail electric services that may not be met currently by cooperatives. Many of the ideas that are being discussed by future competitors are beyond the understanding of some cooperatives and will lead to a competitive disadvantage over time. Cooperative boards and GM/CEOs should be paying attention to cultivating directors/trustee, GM/CEOs and leadership teams who have the capability of understanding the threats to the industry, and more specifically, to the cooperative business model. The coming changes will likely affect cooperatives in many ways related to strategic leadership; the most obvious is in the areas of talent recruitment and retention.

Vast changes will likely affect and/or challenge the way cooperatives have done business in the past. Cooperatives and cooperative support organizations will need to discuss new ways to work together to provide cooperative memberships the products and services they desire from their cooperative. In some ways, and in different areas across the country, members will expect their cooperative to have prepared for what is coming and to have developed solutions to changes are already occurring. The cooperative should be the energy expert, and its members should view the cooperative that way. However, many of the industry shifts occurring are placing doubt in member minds about whether the cooperative is the organization it has always said it has been—at least for those cooperatives that aggressively communicate with their members. For those that don't actively communicate, members are more likely to question whether their cooperative has the sophistication, expertise, or desire to assist them in understand and dealing with industry options.

Certain industry shifts may provide significant business and financial risk for the cooperatives. This concern is discussed more in-depth in various sections of this review, but strategic leadership is specifically charged with preserving the members' ideological investment in the cooperative. Ultimately, the board and the GM/CEO must address the changes that are coming, and they must work together with the leadership team at their cooperative, along with related business organizations, to determine solutions that make business sense, preserve the value equation for cooperative members, as well as meet future member expectations.

Implementing strategic leadership will require cooperatives to begin to think longer-term to identify trends and potential business risks. Planning for the future requires a different skillset than that previously required for operating the electric distribution system. Some cooperatives will likely not have employees with strategic planning skillsets, or who lack an eye for what may occur in the future. Further, cooperatives will need strategic thinkers who understand technology
and its potential impacts on the business. Technological advancements and their implementation should be weighed as a way to empower employees across the organization and generational lines to ensure cooperatives are considering multiple views when planning for the future. All generations will provide a different and meaningful perspective to strategic planning. Cooperatives should consider establishing strategy and risk management positions in order to ensure there are specific employees tasked with preparing for the future and managing risk for the cooperative. Larger cooperatives may even see the need to establish a Chief Strategy Officer and/or Chief Risk Officer position. These positions should support the GM/CEO and staff vision in preparing for immense industry change and understand comprehensively the risk exposures the cooperative has.

This being said, it is important for cooperatives to have a strong succession management plan that includes, at a minimum, the CEO and key staff positions. A key in cooperative future planning should include assurance that leadership retirements have been a part of succession planning, and that a plan is in place to replace the position with candidates who have a good understanding of potential future issues within the industry. Further, as retirements occur, the GM/CEO should continually evaluate whether or not organizational structure needs adjustments due to industry changes. Retirements allow a good time for restructuring with minimal impact to the organization. NRECA and other organizations provide management training that should be considered by cooperatives who are preparing future leaders prior to the call for service. Cooperatives should also support internal training and mentoring programs. It is also recommended that cooperatives consider establishing an internship program to bring more input to strategic thinking and planning. Young and eager college students will generally be very excited to give input through their internship opportunity.

The cooperative's board is obviously an important component of the strategic leadership process. Directors should aspire to be well-educated and have a current understanding of industry trends that are occurring. Directors should be engaged in training programs and conferences offered through their G&T, statewide association, national associations, and industry organizations. Directors should consider policy supporting director certifications. Further, the board should expect the GM/CEO to provide strategic leadership and hold the GM/CEO accountable for establishing long-term strategic planning goals, along with short terms goals that accomplish strategic plans. When the GM/CEO and board are working together in a strategic way, cooperative members' needs should be covered. At some cooperatives, one or more directors may not take the time or make the effort to stay up to date on industry trends. They may figure the business model has worked well over time and there is no need to apply strategic leadership to prepare for the future. While this sort of scenario may entail a small number of directors across the industry, it is incumbent on all directors to take a step back and evaluate the current state of the industry. Peer directors should assist in helping other board members understand industry changes. It is imperative that all directors are on board with the strategic leadership direction.

Obviously, directors are supposed to have a good understanding of their district membership desires. In many cases, this works very well for directors who are involved in their communities. Regardless, GM/CEOs should provide membership opportunities that allow members to see and hear cooperative objectives, and to provide input about those perspectives. This can be

accomplished through community meetings, focus group meetings, town hall meetings (inperson or electronic) and through various survey methods. It is imperative that cooperatives remember their purpose and allow their member input about the cooperative's response to future industry trends and challenges. Strategic leadership will give members a view of the cooperative's future direction as determined by the cooperative's board, GM/CEO and staff, and provide venues for obtaining member input.

Many cooperatives in the industry are relatively small. Due to this fact, in order to keep rates comparatively low, they may not have the resources that may allow training and recruitment of employees that may be necessary in meeting the challenges in formidable industry change. First and foremost among those challenges is finding answers to changing member expectations. There are multiple opportunities that should be considered. Cooperatives, especially smaller ones, should establish either a service company or possible joint venture to create and meet expectations of the membership(s). This obviously allows cooperatives to have more resources to deal with new industry developments. Another option may exist in working with the cooperative's G&T or statewide association. These support organizations are generally large enough that they can offer smaller cooperatives the services they otherwise may not be able to do on their own. A number of cooperative support organizations also offer services, such as hosting and leading strategic planning meetings, which can bring strategic leadership expertise to the cooperative who may not have such resources. Further, smaller cooperatives in the same geographic region may choose to work together to develop strategic direction for the benefit of multiple cooperatives and may even consider merging to gain scale and better be prepared for the industry changes coming. The bottom line is there are many options, therefore little excuse, for employing strategic leadership at cooperatives of all shapes and sizes.

Billing and Collections

OVERVIEW

Cooperative's billing & collections departments most often work together in some capacity as each cooperative must balance its varying billing structures and operational differences. Cooperatives have begun to offer more behind-the-meter retail services to members, so billing systems must be capable of billing multiple products on both a fixed and variable schedule basis. These services continue to grow as cooperative members seek to become more efficient and involved in their daily electric consumption, whether it be the evolution of solar, electric vehicles, time of use rates, or other types of load shedding. The make-up of each cooperative is unique in its own way as there are many variables that impact what a cooperative's rates, tariffs, or riders may be. How the cooperative bills its members and what its members' expectations are of their cooperative's billing and collections departments are factors that will weigh most heavily on management in making decisions that are best for their cooperative.

- More and more members expect to see a "cafeteria plan" like structure to the options their cooperative can provide them.
- From an electric cooperative's perspective, there are typically two options that could make offering these types of services possible. The first is to use a cooperative's in-house electric billing system, while the second is to use a third-party billing provider, either inhouse or outsourced.
- Each cooperative is met with its own level of oversight as it operates in a regulated or unregulated environment. A regulated environment provides an additional level of oversight, typically by a state's commission or governing body. This oversight is in addition to the cooperative's board of directors and oversees, most commonly, any rates, tariffs, or riders the cooperative publishes for its members.
- The majority of a cooperative's membership consists of residential members; however, many cooperatives also serve commercial and industrial members. These members provide their own benefits and challenges to a cooperative as they must have their own unique rates, tariffs, and riders in comparison to the more common residential members.
- The electric cooperative industry can be a complex and dynamic industry in which, for many, uses terminology that most are unfamiliar with. A glossary of terms can be found here: https://tri-countyelectric.net/energy-glossary
- New ways to collect payments from electric cooperative members has changed drastically since the inception of cooperatives. For most cooperatives, the large majority of members still utilizes traditional payment methods like check or even cash, while many have seen a shift to electronic forms of payment like ACH or credit cards. However, the shift to a newer age of technology for cooperatives has slowed some methods of collections.

- Two of the most notable increases in the past decade to have directly affected the billing and collections departments of electric cooperatives are the increasing postage rates and credit card fees.
- One of the most common challenges cooperatives must face includes the lack of options in CIS/FIS vendors as there are only three proprietary products available in this space. Each of these vendors bring their own unique perspectives to what they offer, how they integrate into each cooperative's workspace, and how they best suit their members. These vendors include: National Information Solutions Cooperative (NISC), Meridian Cooperative, and Milsoft Utility Solutions (formerly "Daffron").
- With larger commercial and industrial members connecting to cooperative systems, cooperatives need to consider key credit risks with these large loads. Bills to these members will be large and slow or no payment to the cooperative could be financially catastrophic.
- Considering pre-payment opportunities may be beneficial for some cooperatives to manage poor credit members as well as provide opportunities for members to be more cognizant of daily usage.

BUSINESS FUNCTION DISCUSSION

A primary responsibility for cooperatives across the country is their billing and collections department. The methods and responsibilities of these departments may have evolved over time, but their overall principles have stayed consistent. One of the changes most cooperatives have embraced over the past couple decades revolves around making sure a robust billing system is in place to accommodate various product and service offerings. Aside from these systems, decisions will need to be made regarding personnel and processes. Assuming the billing system allows as much automation as is needed, a cooperative will still need to determine if additional employees are required in the billing department. Beyond all of these things, a cooperative needs a billing system robust enough to ensure accuracy and provide flexibility.

Since their inception, electric cooperatives have been forced to adapt to the ever-growing change in the types of members they serve. The most recent dynamic includes the increase in commercial and industrial members for some cooperatives. Commercial and industrial members most often consume more electricity than the average residential members, so reliable and competitively priced electricity becomes even more important when determining generation sources for these members. In addition to how these members must be served, a cooperative must balance the risks that may come with the larger revenue of commercial and industrial members. The influx of electric vehicles (EVs) and data centers for many cooperatives has put risk mitigation at the forefront of management, ensuring the investments of all other members remains protected.

With the changing processes that accompany billing, many methods of collecting payments (before and after disconnection) remain the same. However, with the influx of technology, easily accessible payment options, and many new methods of payment, members are now provided an unimaginable number of options to pay for their electric services. This can be a great way to connect with the electric cooperative's adaptive members for decades to come.

Communications and Marketing

OVERVIEW

The role of the communications and marketing business function within a cooperative is to develop the overall communication and brand strategy, engage members, provide cooperative messaging, and set the standard for cooperative communications. Communications and marketing will continue to be paramount for cooperatives to navigate. successfully with the evolution of energy innovation, more frequent social media interactions, and a wider array of communication channels.

KEY CONSIDERATIONS

- Cooperatives should evolve to a broader definition of marketing that includes product, price, promotion, place, and people.
- Educate members on the products and services the cooperative offers and be effective with these communications.
- Evolve cooperative mindset to have a sales and service focus.
- Expand communication channels co-op magazines, bill stuffers and annual meetings are not the only way to communicate in order to reach the entire membership.
- Develop brand guidelines and prepare marketing and communications strategies.
- Social media channels are here to stay; cooperatives must communicate to members where they consume information which will require a robust online communications strategy.
- Social media channels themselves allow multiple ways to communicate; newer generations tend to be more focused on pictures and video more than text. Cooperatives should endeavor to reach across multiple generations with a variety of communication approaches.

BUSINESS FUNCTION DISCUSSION

With safe, reliable and affordable electric delivery being the emphasis for the first 75 or so years of the electric cooperative business model, cooperatives have enjoyed being, for the most part cooperatives have not had to think about their business being competitive. With the expansion of member expectations, deregulation, and the DER, evolution, the cooperative's communications are more important than ever.

While most cooperatives have evolved and strengthened their communications efforts over the last decade to meet the resource needs of their respective memberships, shifts in consumer behavior, service expectations and reshaping within the retail sector will require an even greater expansion and advancement in the manner and methods in which cooperatives engage, communicate with and market their service offerings to members.

Cooperatives should treat their communication and marketing focus business function with the same sort of strategic priority as operations, engineering and information technology. Basic marketing strategies such as developing a marketing strategy plan, a brand guideline, and communications focused budget should be at the forefront of cooperative plans.

Consumer expectations are on a continuously accelerating ascent, and they are in the driver's seat when it comes to reshaping how services and products are offered. The good news is cooperatives are already very well positioned to "win" their members over with new services and products. They just need to identify what the members' expectations are and how to take that information and shape it into their marketing efforts. To go along with that advantage over the current and future competitors is that most cooperatives have started a two-way relationship with their membership through surveys, social media, years and years of annual meetings, community outreach, and economic development activities. Cooperatives who haven't adopted multi-channel communication strategies, which include digital platforms, should review the available tools and continue to keep up with new emerging communication trends.

Now layered on top of those meaningful engagements is an almost unending stream of memberconsumer data that has barely been evaluated. With ever changing member demographics, it is imperative for cooperatives to know rather than guess the attributes of the consumer-owners they serve—such marketing homework will most assuredly have been performed by retail competitors.

Cooperatives should conduct voice-of-member research along with member journey mapping to understand the needs of its members. Cooperatives should continue to use surveys such as the ACSI or NPS scores to gauge member engagement. Strategies around improving customer engagement should include traditional and non-traditional cooperative approaches.

Cooperative members are becoming more aware of their energy consumption, pricing, and their impact on the environment. Cooperatives may find an advantage in highlighting the "value" of being part of the cooperative and focusing on its unique positioning as community or member owned.

With many cooperatives entering the space of providing other products and services, cooperatives have to learn how to employ sales and marketing for these services into communication plans.

No matter what size a cooperative is, it cannot afford to leave anything on the table in respect to its communication and marketing outreach and engagement effort with members, nor in finding the means to determine where the cooperative is falling short in meeting member service expectations.

Community/Economic Development

OVERVIEW

Commitment to community is one of the seven cooperative principles and it is more important than ever that electric cooperatives embrace and adopt that value as part of the core culture. Electric cooperatives historically are economic drivers in their community, providing vital services for business growth and development, supporting highly skilled jobs, contributing to the local tax base, and investing in significant capital expenditures. A cooperative's investment of both human capital and financial resources into the local and regional economy can have a measurable and sustainable impact on its membership and employees. This is especially true in rural areas where growth may be receding or is stagnant.

Further, while growth is an ideal outcome when a cooperative is actively engaged in the development of its communities; it is only one consideration of why it is important to commit resources into this business function. Improving quality of life, providing valuable educational opportunities, and making available necessary human services can be just as important as growth when it comes to developing or maintaining a vibrant and thriving community. Community and economic development work can also provide the cooperative valuable insight into infrastructure planning and should be considered when committing resources in this area.

- To provide the most value to a cooperative's membership and employee group, community and economic development work should be part of the cooperative's yearly workplan. This strategic commitment of human capital and financial resources may require the leadership team to provide the board of directors an estimated return on investment, along with the benefits of community and economic development work on its infrastructure planning process.
- The cooperative CEO or a senior strategic leadership team member should play a key role in community and economic development dedicating time to area organizations, assisting fundraising efforts, being present at community events, and developing strong professional relationships with business leaders. If cooperatives want to be part of the conversation and "at the table," they must be a consistent presence in their communities and at key industry meetings. Community and economic development takes time and cooperative leadership, along with their board of directors, need to commit long term.
- Many communities are looking for "boots on the ground" assistance to help with identifying funding opportunities, finding innovative solutions to challenges such as workforce housing and childcare, and providing planning and training assistance to local leaders. To support communities in these areas, cooperatives may consider adding a community and economic development component to its key account program or hiring a dedicated community and economic development professional. As the cooperative contemplates additional full-time employees, it is important to avoid duplication of services and assess whether or not those services are already available in the community.

Dedicated personnel can work with existing businesses, potential site selectors, developers, and regional and state economic development organizations in partnership with communities.

- Each community is unique and will have individual needs and desires. To gauge those elements, it is important for cooperatives to develop relationships with governmental/civic leaders, community shapemakers, educational and medical administrators, developers, and non-profit and economic development organizations (EDOs), etc.
- Community input sessions and needs assessments can help provide focus and guidance to the cooperative as they develop workplans and budgets for community and economic development work.
- To gain trust, the cooperative must be present in the community. An effective way to develop a genuine relationship between the cooperative and the community is to encourage employees to volunteer through cooperative-paid service hours and provide opportunities to work at community events. Face-to-face interaction with employees can be essential in the cooperative's quest to be fully immersed into the community.
- Funding should be included in the yearly budget for community donations, sponsorships, and economic development activities. To maximize the cooperative's investment in this area, partnerships with other businesses or organizations can assist in the funding of community and economic development activities. Cooperatives should consider setting up a trust such as Operation Round Up to help provide additional grant assistance to community organizations.
- Cooperatives should stay abreast of federal funding opportunities for communities through various governmental grant and loan programs.

BUSINESS FUNCTION DISCUSSION

According to a report developed for NRECA and CFC, "Electric co-ops are critical drivers of economic development within their own communities. Locally, co-ops are responsible for \$791 billion of total output and \$374 billion in value added to the communities they serve. Through this activity, electric co-ops create nearly 424,000 local jobs per year, leading to \$166 billion in labor income for local residents." State economic development agencies are also key relationships for promotion of areas served by the cooperative.

There is a major return on investment when cooperatives invest funding into and create partnerships with local communities. If a community within a cooperative's service territory thrives economically, it can revive the entire region potentially leading to load growth, jobs, social services, quality of life initiatives, etc. which benefits all members. When electric cooperatives are seen as key partners in their local community and within the business realm, the organization is better able to plan for capital expenditures and potentially be proactive in its future growth.

Cyber and Physical Security

OVERVIEW

U.S. electric cooperatives have always been the cornerstone of utility services in rural regions, and today, they face the increasing challenge of securing their cyber and physical infrastructure. The integration of digital technologies into grid operations has heightened the risk of cyber threats, while physical assets remain vital and vulnerable. In response, cooperatives must adopt comprehensive security strategies to protect their operations, data, and community trust. These efforts must combine the latest in cybersecurity measures with robust physical security practices to safeguard against a spectrum of risks. As cooperatives recognize safety as a vital pillar of their operations and success, it's essential to cultivate a culture where cyber and physical security are embraced as collective responsibilities, integral to the organization's core values.

KEY CONSIDERATIONS

To ensure resilience and safeguard operations, electric cooperatives must prioritize a comprehensive array of critical elements that form the foundation of a strong plan for cyber and physical security, directed by decisive and informed leadership. These include:

- Risk Assessment and Management: Identifying potential cyber and physical threats is the first step in fortifying the cooperatives against intrusions and disruptions. This involves not only technology solutions, but also employee training and policy development.
- Technology Adoption and Upgrades: Implementation of state-of-the-art cybersecurity software and hardware is essential, as is the regular updating of physical security systems like surveillance and access controls.
- Regulatory Compliance: Navigating a complex regulatory landscape, ensuring compliance with standards such as those set by the North American Electric Reliability Corporation (NERC), the Federal Energy Regulatory Commission (FERC), the Rural Utilities Service (RUS), and other agencies including state level agencies.
- Employee Training and Awareness: Educating staff at all levels on best practices for cybersecurity and physical security, and ensuring they understand their role in maintaining the cooperative's security posture.
- Incident Response Planning: Developing and regularly updating an incident response plan ensures that the cooperative can quickly and effectively respond to security breaches or physical threats.

- Community Outreach and Engagement: Keeping the community informed about security measures and how they contribute to the reliability of services can enhance the cooperative's reputation and maintain member trust.
- Testing: Cooperatives should test their cyber and physical protection schemes at least annually against the most current set of threats to ensure their hardware, software and planning is up to date and meets the expectations of the program.
- Collaboration: Cooperatives should work together and within the industry to collaborate on active threats and best practices and assist each other in mutual aid operations when events occur.

BUSINESS FUNCTION DISCUSSION

To successfully implement a strong cyber and security plan, cooperatives should consider the following to achieve goals set:

Developing a Comprehensive Security Roadmap

- Assessment and Objectives: Begin with a thorough assessment of current security posture and vulnerabilities. Establish clear, actionable objectives for enhancing both cyber and physical security, complete with detailed milestones and quantifiable success metrics.
- Resource Allocation: Determine the budget and resources necessary for implementation, ensuring that the allocation reflects the prioritized risks and critical areas of operation.
- Technology Integration: Plan for the integration of advanced security technologies, including automated threat detection systems, reinforced firewalls, and physical barriers that are designed to deter, detect, and delay potential intruders.

Leadership and Governance in Security Initiatives

- Executive Buy-In: Secure commitment from top-level management and the board of directors, which is extremely crucial to highlight the importance of security within the cooperative's culture and operations. This executive endorsement is pivotal for establishing a resilient security framework, ensuring that security is not just a policy but a corporate ethos, underpinning every aspect of the cooperative's mission and daily activities.
- Security Governance: Establish a governance framework for clarifying roles, responsibilities, and authority for security-related decisions and actions. This framework should create a structured environment where accountability is clear, and every team member knows their specific security duties, ensuring that security protocols are executed effectively and consistently across the cooperative.

 Cross-Departmental Coordination: Promote coordination across all departments to ensure that security considerations are integrated into every aspect of the cooperative's operations and performance.

Enhancing Performance Monitoring and Reporting

- Real-Time Monitoring: Implement real-time monitoring systems to detect security incidents as they occur, allowing for prompt response.
- Regular Audits: Conduct regular audits of security protocols to identify and rectify any shortcomings before they can be exploited.
- Transparent Reporting: Develop a transparent reporting system that regularly communicates the status of the security landscape to stakeholders, including any incidents and the cooperative's response to them.

Institutionalizing Adaptability and Continuous Improvement

- Training Programs: Continuously update training programs to keep staff aware of the latest security threats and best practices. Continuously testing employees builds the cyber awareness culture.
- Policy Revisions: Regularly revisit and revise security policies to align with emerging threats and regulatory changes.
- Innovation Scouting: Actively seek out and evaluate innovative security solutions and practices that could further enhance the cooperative's security measures.
- Incident Response and Recovery: Establish a comprehensive incident response plan that includes not only immediate response protocols, but also long-term recovery strategies.
- Supply Chain Security: Evaluate and secure the supply chain for critical infrastructure components to prevent tampering and ensure the integrity of physical systems.
- Insider Threat Programs: Develop programs to detect and mitigate risks posed by insider threats, including both intentional and unintentional actions by everyone.
- Cybersecurity Insurance: Explore cybersecurity insurance options to mitigate financial risks associated with potential breaches and security incidents.

For electric cooperatives to maintain their success and reliability, implementing comprehensive cyber and physical security strategies will be essential. Collaboration with local law enforcement, emergency services, peer utilities, and other key holders will be key to crafting unified and effective security responses. Furthermore, raising awareness and educating cooperative members about the critical role they play in enhancing security measures will serve to strengthen the overall security posture of the cooperative.

Data Analytics

OVERVIEW

Utilities have always analyzed data to improve the operation of the electric grid and their processes. However, utilities today have access to exponentially greater amounts of complex data sets. Sources of these new data sets come from all parts of the electric distribution system, including transmission data, distribution data, meter data, asset data, and geographic information system (GIS) data. Coming soon, artificial intelligence (AI) will both consume and create even more data sets. It is yet unknown to what degree AI will impact utilities, but it is recognized this is coming and the data analytics roles at utilities will need to be ready to address and utilize this new tool.

Once security issues have been addressed, big data collection in power systems suffers from three primary challenges: they can be incomplete in nature; they come from heterogeneous sources and therefore are difficult to merge and systems update or make data available at different intervals and rates. The biggest immediate impact will be the sheer volume of data a utility can access, integration of data with legacy systems and ownership of data. Data analytics allows the cooperative to offer a more dynamic range of rate structures and could facilitate a decentralized network that allows peer-to-peer energy transactions in a connected community, in addition to an overall improvement in customer engagement opportunities. Opportunities with AI will also abound, providing detail and opportunities for both the utility and its consumers. With the industry moving forward and the natural progression of member expectations, the potential of data analytics will open limitless possibilities for cooperatives.

- Most cooperatives do not have a business function for data analytics but could benefit from having one.
- A significant amount of data is being collected at utilities nationwide but is underutilized.
- Data being collected has a significant value but this value must be extracted from the data– having expertise in the electric cooperative in this area can extract this value.
- Smart Meter data has tremendous capabilities to aid in understanding the electric system most cooperatives are not even scratching the surface.
- Data collection will be a significant issue to ensure operations as a DSO are efficient.
- Data personnel will be required to translate the data into actionable work.
- Cooperative data systems will need to adjust to providing tools and access to data residing in their independent systems.
- With significant data, AI can begin to provide opportunities for the cooperative in automation of the analysis of large data sets.

Data Communications

OVERVIEW

Advanced communications infrastructure must be part of today's future planning. A robust and scalable ecosystem of IP networks and data communications platforms will be necessary to accommodate the future distribution service operator's energy portfolio and physical grid structure. The convergence of AI, IoT, and future grid technologies, along with advanced two-way metering infrastructure must be topics of strategic planning for cooperatives. Government regulations regarding physical, cybersecurity and critical infrastructure will require any network communications to also be effectively secured against a variety of attacks. The architecture of future DSO cooperatives will require substantial collaboration between cooperatives, suppliers, technology providers, and members. For the future cooperative to grow and prosper as a DSO, there must be a recognition of the need for and the implementation of advanced communications.

- For cooperatives to operate in the future, data communications must be widespread and very reliable.
- Data is key, so it will need to be communicated near real time.
- Due to a lack of communications in many rural areas, cooperatives may need to consider developing a high-capacity fiber network to facilitate the communications necessary.
- Cybersecurity of data will be a necessity cooperatives will need to develop staff for ensuring data security.
- Will need to interface with many different technologies, data collection and integration will require resources that cooperatives may or may not have today.
- Cooperatives will need to have staff that ensure the reliable and secure buildout of communications systems and will have to maintain those networks after construction.

Energy Services

OVERVIEW

Energy Service representatives serve a crucial role in helping members manage their usage through the use of technology and education programs. Unlike other departments within the cooperative, the Energy Services department extends its responsibilities beyond the source side of the meter to the load side of the meter (the member's side). This unique focus on the member's energy usage and needs, positions Energy Service representatives as valuable resources for members seeking to optimize their energy consumption and reduce costs. Energy Service representatives work closely with members to understand their specific energy usage patterns, preferences, and goals. By offering tailored solutions and personalized recommendations, they help members make informed choices that align with their individual needs and priorities.

- Energy Efficiency Programs: Cooperatives offer energy efficiency programs to help members reduce energy consumption and lower monthly bills. These programs may include incentives, rebates and financing options for energy-efficient appliances, lighting, HVAC systems, insulation and other measures.
- Distributed Energy Resource (DER) Programs: Cooperatives promote the adoption of Solar, Wind, Batteries through various programs and initiatives. This may involve providing incentives, offering installation and maintenance services, participating in community solar projects. Energy efficiency is often included as a DER.
- Demand-Side Management: Cooperatives implement demand-side management strategies to manage peak electricity demand and improve grid reliability. This may include offering demand response programs, time-of-use pricing, and load management initiatives to encourage members to shift energy usage to off-peak hours.
- Energy Audits and Assessments: Cooperatives offer energy audits and assessments to help members identify opportunities for energy savings and efficiency improvements in their homes or businesses. These assessments may include a review of energy usage patterns, recommendations for energy-saving measures, and guidance on equipment upgrades or replacements.
- EV Programs: Cooperatives support the adoption of EVs by offering incentives, rebates and infrastructure support for EV charging stations. This may include installing public charging stations, providing incentives for residential EV charging equipment, and offering time-of-use rates for EV charging.
- Member Education and Outreach: Cooperatives engage with members through education and outreach initiatives to raise awareness about energy efficiency, DERs, and other

energy-related topics. This may involve hosting workshops, webinars, and community events, as well as producing educational materials and resources for members.

• With the technologies available on the member side of the meter, the cooperative has a unique opportunity to work with members to establish a successful VPP program.

BUSINESS FUNCTION DISCUSSION

Overall, Energy Services serve as the memberships trusted energy advisor assisting members in navigating the complexities of energy management through the use of technology and education. By addressing the key considerations, the Energy Services will provide value to the entire membership and allow members to be enablers to address their personnel energy needs.

Engineering and Planning

OVERVIEW

Engineering and planning departments within utility companies play crucial roles in the development, maintenance, and improvement of electrical distribution systems. These departments, whether combined or separate, oversee a wide range of responsibilities, from long-term system planning to day-to-day operational tasks. With the rapid evolution of technology and the increasing emphasis on distributed energy resources (DERs), these departments face new challenges and opportunities.

- Over the years, engineering departments have expanded their roles to include not only physical system design but also project management, compliance with industry standards, asset management, and operational technology (OT) management. Planning departments, on the other hand, focus on long-range system needs, load forecasting, and community growth projections.
- The emergence of new technologies such as DERs, smart meters, IoT-enabled devices, and advanced analytics is reshaping traditional planning and engineering functions. Departments must adapt to accommodate two-way power flows, increased data granularity, and integration of OT and IT systems.
- Cooperatives must adopt forward-thinking strategies to future-proof their investments and infrastructure. This includes incorporating flexibility into equipment specifications, embracing new communication and control technologies, and anticipating changes in consumer behavior and regulatory requirements.
- Electric cooperatives often have a strong focus on engaging with their members and educating them about energy efficiency, conservation, and the benefits of distributed energy resources. The engineering and planning departments may collaborate with member services teams to develop outreach programs, workshops, and resources to promote energy awareness and encourage participation in cooperative initiatives.
- Cooperatives typically maintain close relationships with local communities, government agencies, and other stakeholders. The engineering and planning departments may participate in community events, collaborate on infrastructure projects with local authorities, and engage in regulatory processes that affect the cooperative's operations.
- As utilities are increasingly facing extreme weather events and other challenges, resilience and disaster preparedness become critical considerations for engineering and planning. These departments may develop contingency plans, implement resilience measures in infrastructure design, and coordinate emergency response efforts to ensure continuity of service during crises.
- Many electric cooperatives are committed to environmental sustainability and reducing their carbon footprint. The engineering and planning departments may be involved in

evaluating and implementing renewable energy projects, such as solar and wind farms, as well as integrating energy storage solutions to support grid stability and reduce reliance on fossil fuels.

- With the evolving nature of the utility industry, ongoing training and development programs are essential for employees in engineering and planning roles. Cooperatives may invest in training initiatives to enhance technical skills, promote safety awareness, and ensure compliance with industry regulations and standards.
- Engineering departments are increasingly tasked with IT-related functions, such as managing communication networks and cybersecurity. As operational devices like smart meters become more prevalent, collaboration between engineering and metering departments becomes essential for data management and system optimization.
- Planning and engineering departments rely on digital models for system analysis and realtime operations. Integrating these models with other utility systems, such as outage management and advanced distribution management, enhances efficiency and accuracy in decision-making. The creation of 'digital twins' of certain systems could provide beneficial in the analysis of various planning scenarios.
- To navigate the evolving landscape of the utility industry, fostering creativity and collaboration among employees is crucial. Encouraging trial and error, exploring non-traditional solutions, and engaging with industry groups can lead to innovative approaches to challenges.
- With the addition of larger commercial and industrial loads (megaloads), the planning and engineering teams efforts will be significant in establishing the plan for how to serve the load and ensure reliability of the system as a whole when the new load is added.

BUSINESS FUNCTION DISCUSSION

The responsibilities of engineering and planning departments within electric cooperatives have evolved significantly over the years. Engineering departments have expanded their roles beyond physical system design to include project management, compliance with industry standards, asset management, and operational technology (OT) management. Similarly, planning departments focus on long-range system needs, load forecasting, and community growth projections. This expansion reflects the need for a comprehensive approach to utility operations, incorporating not only technical expertise but also strategic planning and management skills.

The emergence of new technologies, such as distributed energy resources (DERs), smart meters, IoT-enabled devices, and advanced analytics, has had a profound impact on planning and engineering functions within cooperatives. Departments must adapt to accommodate two-way power flows, increased data granularity, and the integration of OT and IT systems. To remain competitive and resilient in a rapidly changing industry, cooperatives must adopt forward-thinking strategies to future-proof their investments and infrastructure. This includes incorporating flexibility into equipment specifications, embracing new communication and control technologies, and anticipating changes in consumer behavior and regulatory requirements. Additionally, fostering creativity and collaboration among employees is crucial for

navigating the evolving landscape of the utility industry and finding innovative solutions to emerging challenges.

Finance and Accounting

OVERVIEW

In supporting the financial integrity, stability and leading 21st century finance and accounting functions, in addition to the transformation of our cooperative industry, the combination of financial needs and business expertise is critical. The original business model established to electrify rural America has expanded, resulting in an increase in financial and accounting considerations and ongoing risk assessments.

It is important to recognize that there has been a shift of newly appointed Finance and Accounting Leadership over the past several years at the cooperatives. This will continue as an industry trend. The expansion of the original rural electrification model has increased the financial needs and business acumen that is necessary to successfully run a cooperative's finance and accounting department. Increased regulatory and compliance constraints along with cash and risk management concerns are at the forefront more than they have ever been in this industry.

- Powering Sustainable Rural Communities Providing reliable, affordable electricity is
 essential to sustaining the economic well-being and quality of life for all of the nation's
 rural residents. The electric program provides leadership and capital to maintain, expand,
 upgrade, and modernize America's vast rural electric infrastructure. Under the authority
 of the <u>Rural Electrification Act of 1936</u>, the Electric Program makes <u>direct loans and loan
 guarantees (FFB)</u>, as well as grants and other energy project financing to electric utilities
 (wholesale and retail providers of electricity) that serve customers in rural areas.
- Understanding the difference between an Investor-Owned Utility, Municipal (division of local government), and a Cooperative - One of the key differences is related to the financial lending options. Cooperatives that have loans with RUS/FFB, under the USDA, have specific collateral requirements to USDA. Cooperatives typically proactively invest in the infrastructure, as a member-owned entity, whereas an IOU is more focused on its profits and EPS for its investors. Cooperatives therefore require more financial planning in support of its Mission to Serve its Members.
- What is a 501(c)12 organization? Requirements for Exemption under I.R.C. 501(c)(12) An organization must satisfy three requirements to qualify under I.R.C. 501(c)(12). First, it must be organized and operated as a cooperative. Second, it must conduct activities described in I.R.C. 501(c)(12) and the regulations. Third, it must derive 85 percent or more of its income from members. These three requirements can be categorized as: (1) the cooperative organizational and operational test; (2) the activities test; and (3) the income source test: https://www.irs.gov/pub/irs-pdf/p557.pdf (pp.53-55). Cooperatives must be mindful of the obligations of filing a Form 990: https://www.irs.gov/pub/irs-pdf/p557.pdf (pp.53-55). Cooperatives must be mindful of its business decisions as it relates to the 85/15 test imposed by the IRS: https://www.irs.gov/publications/p557#en US 202401 publink1000200366.

- Board of Directors governance and requirements The board of directors is responsible for managing the affairs of the corporation. In fulfilling its duties, the board typically can only take official action via majority vote in a duly convened meeting. This course focuses on the legal requirements for holding board meetings and also on the human factors and group processes that make such meetings productive and effective. https://www.cooperative.com/conferences-education/courses/board-operations-andprocess/Pages/default.aspx
- There are many trainings and certifications offered to elected board members by NRECA. Boards are responsible for directing the affairs of the corporation. This course discusses and explains the duties of loyalty, obedience, and due care, and the need for directors to acquire the minimum knowledge and skills necessary to fulfill their responsibilities within the cooperative context.

https://www.cooperative.com/conferences-education/courses/director-duties-andliabilities/Pages/default.aspx

- State Regulatory Constructs Some states regulate cooperatives (from a rate and reliability standpoint). Please additionally refer to your respective state regulatory guidance. There are additional states with limited state authority. <u>https://www.naruc.org/main-navigation-tree/resources/practical-resources/puc-</u> overview-chart-regulated-industries-and-utilities/ (Automatic download).
- Risk Management This requires consistent monitoring given the transition of the traditional Cooperative business model. Economic conditions have also played part in the reevaluation of the cooperative financial needs. Some examples include the Inflationary environment, supply chain and interest rate risk. Regional banks should be monitored for liquidity. Renewables and large power loads are changing the cooperative landscape. Fiber, broadband, and the establishment of wholly owned subsidiaries of the cooperative, with consideration of the 85/15 rule and transfer pricing (IRS) considerations.
- Treasury/Cash Management With the increase in financial frauds, in particular targeting our Cooperative industry, in addition to the nature of how we manage the treasury and cash management function these area few topics for consideration of your respective cooperative. Cooperatives must consider actively pursuing fraud protective features such as ACH debit block, positive pay, internal controls and procedures regarding changing of electronic ACH and wire information for accounts payable, and capital credit account rollover maintenance/new account per issuance. Excess cash investments (i.e. utilization of FDIC-insured overnight sweep accounts or U.S. treasuries) should align to the Cooperative's Investment Policy. Remember mark-to-market accounting for any mutual fund type investments. Cooperatives should consider FDIC insurance limits when considering cash accounts.
- Capital Management with many cooperatives it is apparent that capital project cost has significantly increased, Cooperatives should look at all funding sources and establish relationships across those funding sources to ensure capital is available to meet the needs of the membership. For many cooperatives, having one or more ratings may be imperative in the future as a first step to preparing for other capital availability strategies.

• Some distribution cooperatives are involved in capital markets. Obtaining a credit rating (public or private) may be a new concept; however, it is a requirement to be able to issue commercial paper. CFOs will be learning a new skill set.

BUSINESS FUNCTION DISCUSSION

Managing an efficient finance and accounting department at one of the many electric cooperatives across the United States has many different dynamics. A general understanding of how these cooperatives were established and why they are necessary to serve predominantly rural America will help in fulfilling the cooperative's mission and allow each respective department to better serve their members. Not one cooperative is the same as the next and each differs in their own way from other investor-owned and municipal utilities, so it's critical when tasked to manage the finances of a cooperative to remember that each decision is being made in the best interest of the cooperative's members.

Most of the cooperative's oversight is centered around the functions of the finance and accounting department, which is largely due to the necessary management of members' equity. The respective cooperative's board of directors provides the initial layer of governance and review of financials, as it may include a monthly board meeting review and potentially a more indepth evaluation by a board designated finance committee as often as the Board deems necessary. This level of oversight and cooperation allows the general membership to rest assured their equity investment is being handled in a responsible manner.

Timely required filings in addition to the overall monitoring of an electric cooperative's financial well-being effectively assist staff the most when prioritizing the department's responsibilities. The RUS Form 7 would be the most common filing cooperatives must file on a monthly and annual filing, but there may be additional mandates depending on the state and regulating body. In addition to compiling the Form 7, most electric cooperatives use the Key Ratio Trend Analysis (KRTAs) and Key Financial Ratios published by the National Rural Utilities Cooperative Finance Corporation (NRUCFC) on an annual basis to benchmark and compare performance with other cooperatives. The KRTAs provide an overall assessment for the electric cooperative comparatively by a size, state, and national level. Ultimately, these evaluations and practices assist a cooperative to determine potential areas for improvement.

As electric cooperatives continue to reinvest into their infrastructure and manage a changing environment in relation to subsidiaries and new ventures, the finance and accounting department must continue to protect the assets that have been established and ensure all new opportunities will not have a detrimental impact to the electric cooperative's members (past, present, and future). Continuing relationships with the most supported and secured lending and banking agencies, assuming all treasury and cash management requirements are met, is pinnacle in steering an electric cooperative's finance and accounting department for decades to come.

Human Resources

OVERVIEW

The role of human resources is to support management and management development. Recruitment and selection, training and development, compensation and benefits, performance management, employee relations, employment law and compliance, succession planning, and retention management, which includes employee engagement—all usually fall under the functions of an HR professional. Some HR functions also include aspects of payroll administration.

- Talent Acquisition Challenges: The ongoing challenge in recruiting and hiring talent for critical positions such as engineering, information technology, and operations persists. Cooperatives need to devise robust strategies to attract and retain quality candidates amidst competition from various sectors, including investor-owned utilities, municipals, and even other cooperatives. This may involve improving recruitment processes to appeal to the respective target audiences' generation's priorities. It also means offering competitive compensation packages to ensure they are competitive with market trends.
- Integration of Artificial Intelligence (AI) in HR Functions: Leveraging AI can revolutionize HR functions, from recruiting and onboarding to training, workforce planning, and analytics. However, HR must navigate ethical considerations and ensure compliance with data privacy regulations when implementing AI tools. Additionally, training HR staff to effectively use AI tools and to critically review the information provided by AI sources is crucial for maximizing their potential benefits. Recent news stories have demonstrated that AI results cannot always be taken at face value.
- Compliance with Employment Laws: Ensuring compliance with a myriad of workplace laws and regulations remains a top priority for HR professionals. Given the dynamic nature of employment laws, HR teams must stay updated on legislative changes and adapt policies accordingly. The introduction of AI in the workplace introduces new legal challenges related to fairness, privacy, and intellectual property, necessitating proactive legal risk management strategies. Establishing cooperative policies and acceptable practices should be on every cooperative's radar.
- Diversity, Equity, and Inclusion (DEI): Promoting DEI initiatives is essential for creating a
 fair and inclusive work environment. HR plays a central role in recommending and
 implementing DEI strategies, including bias-free hiring practices, diversity training, and
 fostering an inclusive corporate culture where all employees feel valued and respected.
 This topic has garnered the attention of both federal and state legislators with differing
 perspectives on how this sensitive issue should be addressed. Certain aspects of DEI may
 become more or less prominent to cooperative leaders depending on which political party
 controls the government (state and/or federal). Also, local conditions in cooperative
 service territories will differ on how DEI considerations are handled at each cooperative.

- Workforce Flexibility: For some cooperatives, managing the transition to remote, hybrid, or back to in-office work arrangements requires HR to adapt policies and practices to accommodate diverse employee needs.
- Generational Shifts in Leadership and Succession Planning: With the retirement of the last
 of the Baby Boomers and the rise of Gen Z (1997-2012) employees to leadership roles, HR
 must address evolving expectations and work styles within the workforce. This includes
 adopting agile leadership development programs, promoting intergenerational
 collaboration, and leveraging technology to facilitate knowledge transfer and mentorship
 across generations.
- National Labor Relations Act (NLRA) Compliance: Regardless of a Cooperative's union status, cooperatives must ensure compliance with the increasingly union-friendly regulations and guidelines set forth by the current National Labor Relations Board (NLRB). This includes ensuring that Cooperative policies and procedures do not impede employees' rights to organize, bargain in good faith with unions, and address labor disputes and grievances effectively to maintain positive labor relations. Non-union cooperatives who wish to stay that way need to pay special attention to the NLRB's overturning several perceived pro-employer NLRB precedents.
- Consideration of the employee's view of work/life balance is and expectation of many new employees.

BUSINESS FUNCTION DISCUSSION

The Human Resources function plays a pivotal role in the successful operation of electric cooperatives. HR is crucial in ensuring alignment with the cooperative's goals, member expectations, and operational excellence.

Firstly, HR is instrumental in recruiting and developing talent specifically tailored to the cooperative's values and culture. HR's role includes assisting leaders with ensuring employee performance supports the cooperative business culture, needs, and mission.

In the context of talent management, HR also oversees succession planning and retention strategies to ensure continuity and stability within the cooperative. This includes identifying future leaders within the organization, providing them with development opportunities, and implementing strategies to retain top talent.

Furthermore, HR's expertise in compliance with employment laws and regulations is invaluable when navigating the complexities associated with doing business today. This includes ensuring compliance with labor laws, data privacy regulations, and other legal requirements, mitigating risks, and safeguarding the cooperative's reputation.

Overall, the human resources function serves as a strategic partner in the successful operation of electric cooperatives.

Information Technology

OVERVIEW

The growth of information technology (IT) has accelerated perhaps faster than any other area of the cooperative business in recent years. For most cooperatives, much of what accounted for IT activity and investment 10-15 years ago was a server-based customer information/general accounting system and a personal computer-based local network.

From both internal demand for new platforms and an exponential escalation of consumer expectations for member-facing products, demands on electric cooperatives to purchase and implement hardware and software and train employees, consultants, and members on these systems has dramatically increased. In an age of around the clock social media, the Internet of Things, and instant convenience and constant information, IT will play a key role in meeting member expectations, which will put pressure on budgets, connectivity, cloud-based solutions, security issues and personnel.

KEY CONSIDERATIONS

- Uptime and reliability of internal networks is paramount with a connected utility it is imperative the network is always operational.
- Security is imperative threats will continue to occur and change must stay on top of this in all ways possible.
- Data storage and availability need to be prepared for large amounts of data and have equipment that can process such for employees as necessary.
- Need to have strong access to the internet prepared for future remote work force as needed.
- Cloud applications and storage may bring benefits to the cooperative but must be managed.
- NERC CIP requirements could affect distribution cooperatives long term.
- With cyber and physical attacks becoming more commonplace, cooperatives must have a robust on-site and off-site backup plan for mission critical data.

BUSINESS FUNCTION DISCUSSION

The IT function cannot sit in its own silo within the cooperative. Every other functional area relies on information technology to perform their job. Cooperatives who integrate the IT function throughout the cooperative will see efficiencies and productivity gains.

The complexity of IT has created more specialization in IT jobs. Most cooperatives have moved to a service provider for their enterprise applications. Many of these service providers also supplement some of the IT functions within a cooperative. Larger cooperatives may find it beneficial to have specialized positions that focus on helpdesk activities, or cybersecurity, or network administration, or database management. For smaller cooperatives, they are either forced to hire a generalist or lean on third-party support. Cooperatives should consider pooling resources when it's not feasible to direct hire a resource. For example, a cybersecurity officer may be shared by several cooperatives.

The evolution of cloud computing has created opportunities for IT units to remove some of the day-to-day concerns about managing hardware. Cooperatives should be mindful about connectivity when operating applications or data sources in the cloud. Cooperatives should evaluate applications and platforms, determining their uptimes, backups, and cybersecurity measures before they select these vendors. Cooperatives who depend on cloud applications must be aware that 99.99999% uptime will be required, which may force cooperatives into additional costs for redundant internet service providers.

Advancements in IP-based phones have allowed IT departments to adapt to work-from-home schedules, employee office moves, and better manage phone systems. Smaller IT departments may want to consider moving to serviced based or cloud providers to eliminate some of the complexities of managing a phone system. IT departments should also consider whether advanced capabilities such as SMS and video is supported through these platforms to prepare for the possibility of supporting members in these different channels. Recording phone calls along with screen capture during the call is helpful to assist member services as necessary. Further implementation of full call center capabilities allows a cooperative to have a full understanding of how members are treated when they call in for service.

IT departments play a critical role in making technology decisions. The convergence between OT/IT and enterprise applications will require new skillsets. Often OT technologies were separated within the cooperative, but given the nature of cybersecurity, these functional items need to be on the same page. IT departments are often tasked with performing training on cybersecurity topics. Cooperatives should be aware that IT resources may not always be well prepared to deliver training or to understand the unique needs of adult learners.

Cooperative IT employees will spend a large amount of time on helpdesk activities. Cooperatives should consider investing in the internal tools to manage and track these sorts of issues. Cooperatives can gain efficiencies by empowering employees to troubleshoot issues before "calling IT." IT departments who see recurring issues should see these as training opportunities for employees. Cooperatives should consider formal IT training classes for new employees, focusing on security, IT helpdesk policies and setting expectations for use of equipment.

IT departments are even more critical today to cooperatives than in the past. Cooperatives should carefully evaluate their staffing levels and ensure that needs are being met. Senior leaders need to become more aware of the cooperatives use of applications, databases, cloud technology, security, etc. to help make informed and critical business decisions. Cooperatives should also help educate directors on IT needs, including providing board training or awareness on IT functions. This will help directors and executive leaders better understand the need for IT budgetary items. The role of IT in most cooperatives will continue to expand into the future.

Key Accounts

OVERVIEW

Key Account and Business Development representatives serve a vital role with regards to serving commercial and industrial (C&I) members, cultivating relationships with residential developers and establishing mutually beneficial partnerships with local, regional and national economic development agencies. These personnel play an essential part in helping key accounts stay current with the quickly changing energy landscape, often serving as the sole contact with a cooperative. While key accounts are defined in various ways depending on the cooperative and specific load size and kWh usage characteristics, their unique business circumstances require key account representatives to be agile in meeting their respective energy needs. Key account representatives should understand the complex and unique circumstances and needs of each of their accounts and should be able to communicate on a multitude of topics that include reliability, technology, energy as a service and economic factor. In essence, key account representatives need to be well-informed on a range of issues in order to build and foster positive relationships with commercial and industrial accounts.

- Innovation: New technologies as they relate to energy use are constantly entering the C&I space and it's essential for cooperatives to embrace and provide the innovations that make sense for their members. Cooperatives must become knowledgeable about and advocates for solutions that their key accounts are exploring (or have not even considered but should). As an example, many C&I loads are looking to implement on-site solar applications, whether for energy curtailment or to meet environmental goals. Cooperatives should identify ways to be their partner, not be an obstacle, in these efforts.
- Member Retention: Having a strong key account program in which co-op personnel are a go-to source of information and assistance can help to retain C&I members crucial for to the cooperative's financial condition and rate stability for the other member classes.
- Environmental Goals/Regulation: Today's regulatory landscape can put pressure on cooperatives to implement programs aimed at promoting energy efficiency, demand response, and distributed generation. Cooperatives can help key accounts demonstrate compliance with regulations while also delivering value to this importance member class. Further, many C&I members are more environmentally goal-oriented today (either by choice or mandate), seeking alternative generation resource options beyond traditional generation offered by cooperative. This trend has challenged many cooperatives' policies and knowledge but shifting our mindset to be the trusted energy resource and advisor, and assisting C&I members with these efforts, can strengthen the relationship.
- Member Satisfaction: One of the primary distinguishing advantages cooperatives have over their industry counterparts is their ability to provide personalized service and innovative solutions, a key driver to enhancing member satisfaction. Regardless of how

the industry shifts—and the pace at which this is happening—cooperatives should lean on this advantage they hold and actually improve upon it by being proactive in the DER and EAAS space. By collaborating and partnering with key accounts, electric cooperatives can gain insights into their members' evolving needs, which can lead to new membercare strategies that can span this respective member class, but also be applied to residential, agricultural, and other classes.

 Rate Stability: Because C&I loads typically provide stable and predictable load patterns, their influence on rate stability for the other member rate classes is invaluable. Not all cooperative employees are aware of the importance the C&I members play on rates and, thus, should be informed and educated on how to serve them. Through collaboration, providing tailored services and solutions through key account programs, cooperatives can have greater success in realizing stable revenue streams that can stabilize rates across all member classes.

BUSINESS FUNCTION DISCUSSION

It's not uncommon for C&I expectations to shift at a quick pace, so key accounts personnel require different resources and skills than they did just a few years ago. Communicating complex and sometimes unpopular information (eg., rate increases, outages, etc.) in a manner that is considered transparent and member-oriented are important qualities of key account personnel. To ensure key accounts' experiences are positive, no matter the topic of focus, it is imperative that key account personnel are knowledgeable on topics across the cooperative. As DER implementations gain a greater foothold, being able to anticipate key account needs—often before they're even considered or know about them—demonstrates the care cooperatives take and the innovation they routinely exhibit to their key accounts.

Having systems and data concerning a cooperative's key accounts is a significant benefit to supporting the C&I member space. Key account representatives should keep data on each key account to ensure that data is available for team members all hours of the day to ensure successful work with and for key accounts.

Legal/Risk Management

OVERVIEW

For years, electric cooperatives were fortunate and rarely considered enterprise risk management as a critical area of focus or concern. This is understandable in a typical co-op environment, where much of the revenue is captive, there is easy access to capital and the customer base owns the business. Those days are rapidly disappearing and major risks such as power supply limitations, G&T solvency, wildfires, societal litigiousness, industry disruption, political influence on legislation, cyber-attacks and demographic shifts create a volatile environment, which leads electric cooperatives exposed. Electric cooperative leaders must take a hard look at the risks associated in all areas which were previously not considered.

- Take risk management seriously. Utilize formal approaches to help evaluate enterprise risks. Look for structured platforms or methods such as Protiviti versus a simple SWOT analysis.
- Assign teams within the organization to identify and document risks. Many risks exist which are outside of the CEO's direct line of sight.
- Do not dismiss the external risks of political desire and legislatives actions.
- Cooperatives should consider the risk of not being politically engaged and present. It is an imperative that each co-op have strong legislative and regulatory relationships.
- Include internal and external teams in the process. Each team would have a different perspective, operations, member service, insurance provider, attorney, etc.
- Utilize the co-op network. Look at other states who are addressing more progressive problems, political pressures, power supply limitations and changing member dynamics. Talk to these co-op CEOs, they may have suggestions.
- Society has become more litigious, and utilities are a big target. Review all documented plans are adhered to or revised in a manner that will allow them to be.
- Consider member-supported diversification of the business as a risk mitigation option.
- Good policies that have been reviewed, updated, and followed.
- Have policies and procedures in place which support whistleblower reporting. Thirdparty hotline, comments and suggestions box, anonymous email box, etc.
- Include the board of directors in the Enterprise Risk Management process.
- Member education and communication is an often-unidentified risk. Educated members play a key role in protecting the co-op reputation during advocacy group attacks, rate changes and as harmful legislation is proposed.
- Enterprise risk management should be under constant evaluation and discussion. Tools from NRECA, and others, can help keep the discussions flowing throughout the year.
- Review insurance options and levels to ensure purchased insurance is meeting the risk profile of the cooperative. It is notable that umbrella policies are more difficult to obtain at higher levels and multiple insurers may be necessary to meet those expectations.

BUSINESS FUNCTION DISCUSSION

Risk is a primary factor of operating an electric utility. There are many uncontrollable elements, which have a high impact on business operations and safety. It is our job as leaders to find ways to systematically identify risk across every element and area of the business and consider the impact and potential resolutions of that risk.

Member Services

OVERVIEW

Electric cooperatives exist to serve their members. That concept is the very foundation of the cooperative business model and should result in member services being a top strategic priority for organizations. Member services employees are often the first and possibly only interaction a member has with their cooperative and results in molding the member's impression of the organization. Member services employees are key communicators for the cooperative, providing information on a broad spectrum of issues, including rates, policies, programs, operations, new technologies, energy services, etc. Prioritization should be given to the organization and development of a cooperative's member services team because these actions will have a direct impact on member satisfaction.

- The hiring, retention, and subsequent training of member services employees should be strategic and based on cooperative culture and brand. Effective member services employees are empathetic, have excellent interpersonal communication skills, retain a broad cooperative knowledgebase, and can utilize and adjust to changing technologies.
- Ongoing member research such as surveying and focus groups helps to gather data that
 is essential to an organization's ability to make informed and strategic decisions on
 member services. It may also be helpful to establish a formalized Member Advisory Group
 who can provide ongoing feedback to improve the member experience. This data can help
 develop membership-focused policies, and value-based programs and services
 implemented by a member services department.
- There are differences in member expectations within various generational units (Gen Z, Gen X, Millennials, Baby Boomers, etc.) and it's imperative that cooperatives understand the core distinctions between those consumers groups while planning for member services. For example, Gen Z is looking for a personalized experience rather than a transaction¹¹. To reach the level of exceptional service many cooperatives are striving for and new members are demanding, organizations should consider going through a member services audit by mapping a members' journey. This exercise can help a cooperative compare a member's actual service experience with the desires of various generational groups, recognize each member touchpoint, and improve the overall member experience.
- Members who understand they are owners tend to be more satisfied and engaged with their local cooperative. However, fewer people now consider themselves a cooperative member, but rather a customer. This shift points to the importance of emphasizing the cooperative difference and member experience in its member programs, service, and communications.

¹¹ <u>https://www.forbes.com/sites/jefffromm/2023/03/16/gen-z-is-impacting-customer-experience-forrester-gartner-experience-dynamic-execs-share-insights/?sh=136d3d977d38v</u>

- Proactive member services initiatives help create a more fulfilling member experience and may encourage greater engagement. If a cooperative can anticipate what a member needs, it can exalt that experience to a higher level.
- Today's members are living in a digital age, where speed, accuracy, and ease-of-use is important. Cooperative members now have immediate access to nearly any information they desire and are looking for technology-based retail exchanges such as online chat functions, automated notifications, mobile payment and energy use apps, and other member-support generative AI tools. Cooperatives should continue to transition to and encourage the use of digital communications platforms and digital billing statements.
- Commercial and industrial members often have specialized needs which require advanced knowledge of cooperative issues, reliability, economic development, etc. Key account representatives can provide those services to members and be the main point of contact for commercial and industrial entities, serving as an extension of member services.
- Member demographics should be considered; having multilingual member services representatives may be a need depending on member make-up.
- Member service representatives may be required to have more of a marketing and sales role as cooperatives offer various solutions for their members (i.e. selling internet or solar installation services).
- Cooperatives should consider measurement tools such as the ACSI scoring process to determine the members expectations of service and how they deem the cooperative is meeting those expectations.

BUSINESS FUNCTION DISCUSSION

Every cooperative has a unique membership and no two member services business units will look or operate the same. However, there are reoccurring themes that all cooperatives should consider when organizing their member services team/department such as member experience trends based on generational groups; the evolution of technology; and member expectations based on research and feedback.

Member services should be a key objective area within a cooperative's strategic plan as it is the first and sometimes only exposure members have with their local cooperative. There is a direct benefit to a cooperative's membership when adequate resources, necessary tools, and training of member services employees is emphasized. This can also serve as a recruitment strategy to hire and retain highly qualified individuals to serve in member services positions. Taking a strategic approach to member services will also require measurement, to ensure that the goals and objectives are being met. Member services teams can develop Key Performance Indicators (KPIs) to measure the impact of the related strategies and action plans.

There are a number of member services tools, resources, and training available to cooperatives through partner vendors, statewide organizations, NRECA and Touchstone Energy. Cooperatives are encouraged to incorporate those assets into their workplan.

Challenges do exist as cooperative members become less engaged with their local cooperative and consider themselves a customer rather than a member. According to the National Survey on the Cooperative Difference, electric cooperative consumers who identify as a member/owner rate the cooperative at an average American Customer Satisfaction Index (ACSI[®]) score of 90. Those who identify as a customer had a much lower average ACSI score of 79¹². Member services would be well-served to incorporate programming that emphasizes the value of membership and become familiar with terminology that encompasses the cooperative difference.

¹² <u>https://www.cooperative.com/programs-services/touchstone/cooperative-performance/Documents/Secure/ncsd_report2023_webview.pdf</u>

Operational Technology (OT)

OVERVIEW

Operational technology (OT) plays a crucial role in the operations of electric cooperatives, facilitating the monitoring and control of physical devices, processes, and events within the distribution grid. As technology continues to advance and the grid becomes increasingly interconnected and complex, electric cooperatives face a myriad of challenges in effectively managing and leveraging OT systems. These challenges span technical, organizational, and regulatory domains and require proactive strategies to overcome.

- Integration Complexity: Integrating OT systems with existing infrastructure and legacy technologies poses a significant challenge for electric cooperatives. As new OT solutions are deployed, compatibility issues, interoperability concerns, and data integration challenges may arise, hindering the seamless operation of the grid.
- Cybersecurity Risks: With the proliferation of connected devices and IoT-enabled technologies in the grid, cybersecurity threats pose a significant risk to electric cooperatives. Malicious actors may target OT systems to disrupt operations, steal sensitive data, or compromise grid stability, highlighting the need for robust cybersecurity measures and continuous monitoring.
- Data Management and Analytics: OT systems generate vast amounts of data that can provide valuable insights for grid optimization, predictive maintenance, and asset management. However, electric cooperatives must overcome challenges related to data storage, processing, and analysis to derive actionable intelligence from this data deluge.
- Skills Gap: The rapid evolution of OT technologies requires electric cooperatives to invest in workforce development and training initiatives to ensure that employees possess the necessary skills and expertise to effectively manage and maintain OT systems. Bridging the skills gap and attracting talent with expertise in cybersecurity, data analytics, and OT management is critical for the long-term success of electric cooperatives.
- Regulatory Compliance: Electric cooperatives must navigate a complex regulatory landscape governing the deployment and operation of OT systems. Compliance with industry standards, cybersecurity regulations, and data privacy laws adds an additional layer of complexity to OT management, requiring ongoing monitoring and adherence to regulatory requirements.
- Resilience and Reliability: Maintaining the resilience and reliability of OT systems is paramount for electric cooperatives, especially in the face of natural disasters, cyberattacks, and other disruptive events. Implementing redundancy measures, disaster recovery plans, and robust cybersecurity protocols is essential to ensure the uninterrupted operation of critical infrastructure.
- Cost and Budget Constraints: Deploying and maintaining OT systems can entail significant upfront costs and ongoing investments. Electric cooperatives must carefully balance

budgetary constraints with the need to modernize and upgrade OT infrastructure to meet evolving operational requirements and technological advancements.

BUSINESS FUNCTION DISCUSSION

Electric cooperatives encounter several challenges in effectively OT systems. Integrating these systems with existing infrastructure and legacy technologies presents a significant hurdle, as compatibility issues and interoperability concerns can impede the seamless operation of the grid. Cooperatives support and use of the Multispeak initiative can provide some integration assistance. Additionally, cybersecurity risks loom large, with the proliferation of connected devices and IoT-enabled technologies. Malicious actors may target OT systems to disrupt operations or compromise grid stability, underscoring the need for robust cybersecurity measures and continuous monitoring to safeguard critical infrastructure.

Moreover, OT systems generate vast amounts of data that hold potential for grid optimization and asset management. However, electric cooperatives face challenges in data management and analytics, including data storage, processing, and analysis, hindering their ability to derive actionable intelligence from this data deluge. Addressing the skills gap is also crucial, as the rapid evolution of OT technologies requires investment in workforce development and training initiatives. Bridging this gap and attracting talent with expertise in cybersecurity, data analytics, and OT management are essential for the long-term success of electric cooperatives.

Furthermore, regulatory compliance adds another layer of complexity to OT management. Electric cooperatives must navigate a complex regulatory landscape governing the deployment and operation of OT systems, ensuring compliance with industry standards, cybersecurity regulations, and data privacy laws. Additionally, maintaining the resilience and reliability of OT systems is paramount, especially in the face of natural disasters and cyberattacks. Implementing redundancy measures, disaster recovery plans, and robust cybersecurity protocols are essential to ensure the uninterrupted operation of critical infrastructure. However, these efforts must be balanced with cost and budget constraints, as deploying and maintaining OT systems entail significant upfront costs and ongoing investments. Electric cooperatives must carefully manage these constraints while modernizing and upgrading OT infrastructure to meet evolving operational requirements and technological advancements.

Operations

OVERVIEW

No matter the size of the cooperative, operations personnel typically construct, operate, and maintain most of the electric infrastructure within a cooperative's distribution system. In performing that work, line personnel must be highly skilled and trained in all areas associated with the construction of new services, retirement and replacement of aging overhead and underground infrastructure such as poles, wire, transformers, power restoration response, trimming and cutting vegetation, as well as operating and maintaining distribution substations in some cases.

KEY CONSIDERATIONS

- Reliability and availability are expected need to set goals and work to meet goals.
- Need to utilize technology to improve operations and maintenance.
- Be prepared for local generation as opposed to only central generation and ensure safety of operations personnel as well as the members and general public.
- Utilize new data sources to improve operations and maintenance.
- Dispatchers are no longer just dispatchers shifting to system operators. Technology is now heavily involved in operating, constructing, and maintaining the system.
- Safety is imperative must develop and maintain an active safety culture. Robust tailgate safety meeting process is imperative.
- Personnel need to hire and develop the best possible this is difficult.
- Training need a robust training program to grow the operations work force and prepare the linemen of the future.
- With the advent of many new equipment options, cooperatives should consider the purchase and use of such equipment options to improve efficiencies and restoration capabilities.
- Lineman should have access to daily technologies like every other employee in the cooperative.

BUSINESS FUNCTION DISCUSSION

A variety of technological advancements will further aid operations personnel in the future, giving them more information in real time and improving their ability to work more efficiently and safely. These advancements include a more refined analysis of the current state of the electric grid; the installation of cooperative-owned or member-owned behind-the-meter distributed energy resources; and technological advancements in the tools and practices utilized by cooperative line personnel.

These industry shifts and enhancements will require a cooperative to stay informed about new technologies as they emerge so they can be considered for field testing, as well as for budgetary

consideration and implementation as a new field resource. Improvements in SCADA, mapping technologies, line tools, sectionalizing equipment and training will help improve the overall safety and efficiency of a cooperative's operations in the future. These improvements will play a critical role in improving the overall efficiency and effectiveness of a cooperative's operations; and more importantly, they will help ensure that employees have the tools and training they need to accomplish their work safely every day.

Naturally, operations personnel should have a proven knowledge of RUS specifications, National Electric Safety Code, OSHA regulations and safe working practices. However, with the industry shifting towards more localized generation and the ever-increasing introduction of new tools and technologies, cooperatives should take into consideration that the training programs that have always worked in the past may not be sufficient currently or moving into the future.

Everyone at the cooperative, not just those in operations, should be made aware of and bear some level of familiarization with the new tools, data sources, and technologies, because they all impact how the operations of the cooperatives will function. A functional distribution system operator/operation requires the cooperative's personnel to be able to understand enough about the process of operations such that when new data is received, regardless of its source or recipient, that data gets pushed to the right people so that it can be acted on.

Finally, safety is paramount to the operational success of any electric cooperative. Operations personnel, while not the only department with safety risk, is a key concern of the safe operation of the electric system. A strong safety culture must start with and be fully supported by operations personnel.
Power Supply

OVERVIEW

Power supply is a key area and an asset for cooperatives in assessing and managing wholesale power costs, peak and load forecasts, as well as analyzing the potential for emerging alternative power resources. Power Supply for the distribution cooperative can no longer be seen in the traditional wholesale supply & retail delivery, one way flow model. The addition of significant DER technologies will require cooperatives to transition to DSOs, capable of operating in a multi-source reality. Further, due to the requirements of FERC Order 2222 it is possible that cooperatives will require real-time analysis and in order to allow VPPs to participate in organized markets.

- Wholesale power supply planning, procurement/construction, operations, administration and transmission planning, construction and operation will be a significant additional functional area for many cooperatives in the near future. Even moderate supply additions will necessitate planning in these areas and will require significant labor and capital resources. Despite the significant resource investments, the knowledge gain and offsetting cost savings offer enormous benefits to cooperative members making these investments valuable.
- Distributed resource operators to provide field services to, distributed cooperative owned resources. Regardless of fuel source or generation type, all generation/DERs at scale will require significant maintenance. Vertically integrating these services into the cooperative should be considered. This is especially true of inverter-based resources (IBR) where there has been considerable dilution of the vendor sourced talent pool as the industry expands rapidly.
- Resource dispatchers to effectively schedule distributed resources controlled by the cooperative, monitor aggregated DER's (VPPs). A diverse team beyond simply a few executives and engineers will be required to operate increasingly complex multi-path systems. Many cooperatives that push deeply into DER's at scale are likely to require 24/7 monitoring and dispatch systems. Some of this may be automated but we are many years away from avoiding human intervention entirely.
- Cooperatives have the opportunity to work together to meet power supply expectations through G&T associations in many cases. G&T associations should be cognizant of individual member needs within their associations and also allow some level of flexibility of those members to meet retail cooperative membership requirements. Working together at scale to meet power supply needs can be positive if the G&T association and members thereof have opportunities to meet individual member needs.
- With larger load expectations coming to cooperatives, it is imperative to include power supply planning as a major business function to ensure the availability of power supply to these new members. Care should be taken to ensure the existing member power supply

and risk management is considered when adding new larger loads to cooperative systems.

 Cooperatives taking on the power supply role will need to make investments in personnel resources for forecasting and daily decision making at a minimum. Different software and skillsets will be necessary compared to traditional distribution cooperative employees. Risk management and financial analysis functions will need to be integrated with the power supply business function.

BUSINESS FUNCTION DISCUSSION

Deregulation or reregulation of the wholesale power market, environmental concerns, regulatory requirements, DER proliferation, DER aggregation and technological advances are all factors that cause disruption within the traditional electric utility model. Some of those advances that have become fixtures in the market today include rooftop solar, community solar, battery storage, electric vehicles (EV), and each relate to activities behind the meter and provide both consumers and distribution utilities the means to produce power without a wholesale power generator's assistance and in some cases, without their knowledge.

Electric cooperatives were established to bring affordable electric service to rural America. And while that founding charge will never change, the range of services and the method in which they are delivered to member-consumers will need to shift to accommodate changing consumer service expectations and service interests. One such example of the shift in service perspectives would be enabling member-consumers to choose the type of electric service they prefer to receive, whether that is providing the delivery of electricity or providing programs that make DER technologies affordable.

In preparation for the developing impact of DERs behind the wholesale meter as well as the retail meter, G&Ts and distribution cooperatives must be able to agree that change is necessary and that a different set of tools and technology, training and education resources are needed to help employees become proficient in providing solutions to changing consumer needs—even if existing resources move from one cooperative to the next. Most of all, there must be a willingness to change the business model throughout the entire electric delivery supply chain. Distribution and G&T cooperatives both must understand the ultimate purpose for those solutions and the larger implications for not making them a reality.

Procurement

OVERVIEW

The electric utility industry is becoming increasingly complex. Innovations throughout the utility system are fundamental forces driving this change and complexity. This will present electric cooperatives with new business risks as well as opportunities associated with procurement practices and supply chains.

- There are evident risks with supply chains. They are being disrupted by lead times, inflation, new entrants, and technologies. Lack of proper procurement could limit growth ability.
- Since the supply chain interruptions seen during and following the Covid epidemic, extended lead times and drastic inflation have become a more expected part of procurement. Internal practices must be redesigned to counter the impact.
- Electric cooperative infrastructure is becoming more technical. In this emerging environment, cybersecurity is an increasing concern. Because of the complexity of cybersecurity issues, co-ops will need to practice increased due diligence.
- Procurement best practices should be established and enforced. Procurement decisions are currently done in multiple departments so interdepartmental coordination and cooperation will be increasingly important to mitigate risks.
- Because of possible cyber concerns, cooperatives should work with well-known and trusted companies, reduce the number of vendors used, and vet vendors with a standard questionnaire and/or potential contract requirements. Cooperatives are not able to verify how vendors test and develop software for cybersecurity risks, so being able to screen a vendor's cybersecurity practices on the front end will be important.
- Disruptive technologies also pose a threat. Technologies in the electric utility industry are changing at a rapid pace. At the same time, consumer preferences are evolving to expect new products and services made possible by these technologies. Like a lot of new technologies, many in the utility sector are prohibitively expensive, putting co-ops and other utilities in a tough position. Procuring new technology can be expensive so there is a new business risk with which to contend.
- Industries such as the solar, generator, and battery storage industries can be a prevalent
 part of the co-op business model. Many vendors operate in these markets, from small
 businesses of less than 10 people to large companies. However, small, and even large
 companies regularly go out of business or significantly change ownership. So, choosing
 vendors who will be around for the life of the asset and uphold warranty agreements can
 be difficult. The vetting process is an excellent risk management tool that can save the coop money in the end.
- Inventory management has become a major consideration with the challenges of the last few years. Cooperatives should ensure that inventory management is balanced with the

needs of the cooperative to ensure that the cooperative is not carrying too much or too little inventory.

- Customers of single-source vendors are typically given priority considerations when supply chains are strained.
- Electric cooperatives have long leveraged the co-op network to promote mutual learning, pool resources and create economies of scale to bring down costs for the co-op and the consumer-member. The following are examples of ways that co-op can and have taken advantage of the co-op network:
 - Bid selection: vendors can be screened by a co-op on the front end to minimize risks. Other electric co-ops, NRECA and the rest of the co-op network can be a powerful resource.
 - Strategic partnering for specific products: Co-ops can achieve increased buying power through economies of scale for new products and services.
 - G&Ts and Statewide Associations

BUSINESS FUNCTION DISCUSSION

Procurement is an inevitable part of the electric cooperative business model. This essential function needs to be efficient. In the post-Covid world, most co-ops see far extended lead times and increased pricing. Although some of this has subsided in more recent times, it highlights how fluctuations in supply chain systems can heavily impact co-ops.

As cooperatives continue to venture into subsidiary businesses, new vendors are a must. These vendors need to be vetted accordingly so that an understanding of their business practices is known before any exchange occurs.

Using established cooperative networks can help ease the struggle of vetting new vendors and can also increase buying power through the economies of scale.

Regulatory/Legislative Affairs

OVERVIEW

As the electric utility industry evolves, electric distribution cooperatives face increasing challenges due to technological advancements and shifting regulatory and political landscapes. These changes significantly influence operational costs and the reliability of the power supply. In an era where direct communication by cooperative leaders with legislators complements and amplifies engagement by traditional lobbyists, leaders of distribution cooperatives must be well-versed in all aspects of running an electric utility at the retail, as well as the wholesale, levels. Knowledgeable, engaged cooperative leaders lend tremendous credibility to cooperative positions on energy policy particularly to those decisions that affect reliability and affordability.

- Cooperative leaders must understand emerging generation technologies like wind, solar, battery storage, small modular nuclear reactors (SMRs), distributed energy resources (DERs), virtual power plants, and geothermal generators.
- Comprehending the implications of carbon dioxide emissions proposals and their effects on existing and new generation facilities is critical.
- It's vital to form coalitions with other cooperatives and organizations to share expertise and strengthen advocacy efforts. This collaborative approach helps influence policy and regulatory decisions effectively.
- Cooperative leaders must be prepared to engage directly with politicians, regulators, community leaders. Policymakers and the public look to the distribution utility for guidance on these issues.
- Cooperative leaders must prioritize education of their employees, boards and themselves to ensure they remain the trusted source of information in the complex environment of the current energy transition.
- Advocacy is important at all stages of the process. Beyond engagement in the political
 process, for those in organized markets, an oft overlooked opportunity is engagement in
 the stakeholder process at the regional transmission or independent system operator
 level. Further, regulatory agencies are often in need of industry experts to assist with
 crafting rules in support of legislation. In both cases, these are additional opportunities
 to leverage the cooperative's member focused perspective to improve outcomes.
- Cooperative leaders should be well versed in power markets, regional transmission organizations (RTOs), the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), energy and natural gas markets.
- Cooperative leaders should take the opportunity to engage through committees and other available organizations in order to support the development of reasonable legislation, rules and procedures that may affect them.
- Cooperatives may need to consider enlisting services of lobbying specialists where deemed appropriate and necessary.

BUSINESS FUNCTION DISCUSSION

The shifting political and regulatory landscape demands a proactive and knowledgeable engagement approach. Leaders must have a thorough understanding of emerging generation technologies—such as wind, solar, battery storage, small modular nuclear reactors (SMRs), distributed energy resources (DERs), virtual power plants, and geothermal generators. Additionally, it's crucial to grasp the complexities of carbon dioxide emission reduction proposals, their impacts on both existing and new generation facilities, the motivations behind such regulations, and the costs associated with various mitigation options. Following this, a reasonable understanding of the intricacies of siting, permitting, and zoning for infrastructure projects like gas pipelines, transmission lines, and new generation sources becomes essential. Having such comprehensive expertise enables more effective advocacy and ensures that regulatory frameworks align with the cooperative's operational needs and realities.

While individual cooperatives need not be experts in all of these areas, they must seek collaborative coalitions with others who are. Distribution cooperatives have traditionally relied on statewide trade associations and Generation and Transmission (G&T) cooperatives for coordination, advocacy, and expertise. However, distribution cooperative leaders must not be wholly dependent upon these organizations as the issues of today are far more complex, nuanced and politically charged than at any point in our prior history. Cooperatives are uniquely positioned to provide expert, practical solutions that not only solve these issues, but focus on minimizing the negative impacts to members. Further, just as individual cooperatives are not experts in all the subjects contained here, neither are our trade associations and G&Ts. Collective knowledge pools raise the credibility of the entire cooperative program and contribute significantly to the cooperative goal of remaining the trusted energy adviser. Distribution utilities that abdicate their responsibility to engage meaningfully in the political process do so to the detriment of all.

Armed with this knowledge, the next step for cooperative leaders is to prioritize engagement, which ideally will occur well before regulators and legislators are faced with making decisions on issues of critical importance to cooperatives. Forming relationships early and establishing oneself as a trusted expert on these issues secures the position to be included, listened to and trusted on matters of critical importance to cooperatives. This may mean at times assisting legislators with achieving their own goals, even when not critically important to the cooperative. This engagement, assistance, and education secures the political capital necessary to succeed when the critical issues inevitably arise.

The role of the Regulatory & Legislative Affairs business function within a distribution electric cooperative is crucial for navigating the increasingly complex energy landscape marked by rapid technological evolution and shifting regulatory norms. As the electric utility industry continues to evolve, the proactive and informed engagement by cooperative leaders with policymakers and the community will play a pivotal role in shaping a future that supports both sustainable energy

practices and the cooperative's strategic interests. By prioritizing education, forming strategic alliances, and engaging in early and meaningful dialogue with key stakeholders, cooperatives can ensure they remain resilient and influential in a dynamically changing environment. This approach not only reinforces the cooperative's commitment to its members but also solidifies its position as a leader in the energy transition, capable of guiding policy towards favorable outcomes that uphold the cooperative's mission and values.

Safety

OVERVIEW

Safety is the foundation for electric cooperatives across the country. Every hour of every day, all cooperative employees must possess the competencies and actively mitigate hazards in their tasks. Safety is practiced at a cooperative in many ways, but if a successful safety culture is going to be developed and maintained, it starts with leadership at the top in order for it to be embraced by employees. As we look forward and identify industry shifts and potentially enter into new businesses, cooperatives must remain vigilant in ensuring that safety remains the foundation of their operation.

KEY CONSIDERATIONS

Progressive thinking in safety places a cooperative in the best position to handle industry shifts and new business ventures. This enables a cooperative to better prepare for how the shifts and ventures will influence proven safety procedures, or what additional safety practices and resources may be needed.

- Safety must be #1 at the cooperative must have a safety culture; this has to include management and the board of directors as well as all employees.
- Laws, rules, and procedures will always evolve there must be dedicated staff to ensure the cooperative is meeting expectations.
- Personnel should be well connected to the safety industry.
- Continual training and preparedness is imperative.
- Understanding how new business opportunities impact the electrical distribution system and overall safety is a must.
- Safety may shift to include "behind the meter" and member premises.

BUSINESS FUNCTION DISCUSSION

Safety must be more than a program at the cooperative; it must be part of the culture. When safety is embedded in an employee's thoughts, concerns and work practices, it becomes a part of their daily routine and, more importantly, an employee character trait. With the significant amount of change that is coming to our industry, we need to be agile to allow adjustments in our safety practices. Having a proven safety culture at our cooperatives demonstrates to our employees, member-owners, and the general public that safety is our greatest priority.

Strategic Planning and Leadership

OVERVIEW

Electric cooperatives play a pivotal role in empowering rural communities by delivering essential services. Strategic planning and leadership are crucial for these cooperatives to navigate the complexities of the energy sector, especially with the rising demand due to electrification, while providing sustainable and renewable energy. Through visionary leadership and meticulous strategic planning, cooperatives can leverage new technologies and innovations to meet the evolving needs of their members while ensuring financial stability and operational efficiency.

KEY CONSIDERATIONS

To achieve success, it is imperative for electric cooperatives to focus on several crucial factors that underpin the development of a robust strategic plan, steered by effective leadership.

- Member Engagement: Effective leadership involves continual engagement with cooperative members to understand their needs and aspirations. This can be achieved through regular meetings, surveys, and forums, ensuring that the strategic initiatives align with the members' interests and contribute to the cooperative's long-term success.
- Innovation Adoption: Leadership in electric cooperatives must focus on integrating cutting-edge technologies such as smart grids, renewable energy, energy storage and many other energy solutions. This will not only enhance service delivery but also position the cooperative as a leader in reliability and sustainable energy transition.
- Financial Health: Strategic planning must include comprehensive financial analysis to ensure that investments in new technologies and infrastructures are economically viable and will deliver positive returns over time. This involves detailed risk assessments and scenario planning to anticipate future challenges and opportunities.
- Collaboration and Learning: Cooperatives continue to foster a culture of collaboration and continuous learning. This can be facilitated by participating in national cooperative networks, such as REMDC, sharing best practices, and engaging in joint ventures that enhance operational efficiencies and service delivery.
- Regulatory Compliance and Advocacy: Leadership involves navigating the regulatory and governance landscape effectively and advocating for policies that support the growth and sustainability of cooperatives. This includes staying informed about legislative changes and participating actively in policy discussions and advocacy efforts.
- Community Impact and Sustainability: Strategic planning should emphasize the cooperative's role in community development and environmental stewardship. Initiatives that promote economic growth, job creation, and environmental sustainability can enhance the cooperative's reputation and member satisfaction.

BUSINESS FUNCTION DISCUSSION

Strategic implementation for electric cooperatives is essential to translate visionary goals into tangible outcomes that benefit their members and communities. As cooperatives navigate the dynamic landscape of the energy sector, a well-structured implementation process, typically a business plan, ensures that strategies align with both technological advancements and evolving market demands. This involves scrupulous planning, committed leadership, and robust performance monitoring to effectively deploy resources, adapt to regulatory changes, and sustain growth. By prioritizing strategic implementation, electric cooperatives can enhance their service delivery, foster innovation, and maintain their relevance in an evolving energy sector. To do so, electric cooperatives can commit to the following pathways:

- Develop a Strategic Roadmap: Articulate clear goals and objectives that align with the cooperative's vision and member expectations. This roadmap should detail the steps needed to achieve these goals, including timelines and resource allocation. Cooperatives can consider success by the establishment of a well-defined strategic destination.
- Leadership Development: Invest in developing the leadership skills of board members and executives to ensure they are equipped to lead the cooperative effectively in a rapidly evolving energy landscape.
- Performance Monitoring: Implement robust mechanisms for tracking progress against the strategic plan. This involves setting up key performance indicators (KPIs) and regular reporting systems to keep all stakeholders informed and engaged.
- Adaptability: Ensure that the strategic plan is flexible enough to adapt to changing circumstances. Regular reviews and updates to the strategy will be crucial as new technologies emerge and market conditions evolve.

Strategic planning and leadership are critical for the success and sustainability of electric cooperatives. By focusing on these elements, cooperatives can ensure they remain competitive and continue to meet the needs of their members while improving the quality of life for the communities they serve.

Subsidiary Business

OVERVIEW

Cooperatives across the United States have had the opportunity to work with their members and implement subsidiary businesses in order to meet the needs of their members. Many cooperative members have enjoyed the benefits of their cooperative creating and operating subsidiary businesses as a result. When focused on the needs and direction given by members, the subsidiary business can meet member needs and expectations while also adding significant margins to the electric cooperative and providing rate stability for the members.

- Prior to engaging in subsidiary businesses, cooperatives should strongly consider employing focus groups, community meetings, and other types of engagement with their members (i.e. surveys) to ensure investments in subsidiary businesses are the true desire of the majority of their membership; cooperatives shouldn't implement subsidiary businesses unless there is a significant amount of study of the need of such subsidiary businesses.
- If members are supportive of a subsidiary business, the cooperative should create a
 detailed business plan to ensure that the business has the capability to produce positive
 margins for the cooperative after a reasonable time period considering the capital and
 operating costs to implement the subsidiary business.
- Cooperatives should consider visiting other like businesses to learn best practices prior to implementing a subsidiary business; many cooperatives across the country have implemented a variety of subsidiary businesses and most would welcome others for site visits and discussions.
- Cooperatives should consider hiring consultants that have experience in the subsidiary business and/or employees with such experience to improve the ability of the subsidiary business to be successful; many times a subsidiary business is competitive in nature which is different than operating the electric cooperative.
- Cooperatives should evaluate the method of creation of the subsidiary business and implications on the operations of the cooperative (a department of the cooperative, a non-profit subsidiary, a for-profit subsidiary, etc.)
- After the subsidiary business is operational, cooperatives should ensure that they have a
 full understanding of the revenues, cost, etc., of that business subsidiary to ensure that
 the business plan can be reviewed and updated over time; the cooperative should ensure
 cost accounting is implemented throughout the organization for employees to charge
 time appropriately across the different business functions.
- Cooperatives should consider opportunities to work together and benchmark key business ratios with other cooperatives that have like subsidiaries.
- National support organizations should consider supporting electric cooperatives in these new subsidiary businesses in all ways reasonably possible.

BUSINESS FUNCTION DISCUSSION

Hundreds of electric cooperatives in the United States have implemented a subsidiary business for the benefit of their members. One of the most common implementations of a subsidiary business in the last few years is providing internet services to members. Many equate the expansion of fiber optics into cooperative service areas to the late 1930s and early 1940s when the rural electric cooperative program was created and utilized to take electricity to homes and farms across the rural portions of the United States. Now, many rural residents across the nation have access to better internet services than those in urban areas. The implementation of fiber optic internet services has shown an increased growth in business for many cooperatives and is already enhancing the number of electric cooperatives financially. In many cases, electric cooperatives have expanded the reach of their subsidiaries beyond just their members to adjacent rural areas – benefitting rural areas surrounding their service territory and realizing additional margins helping the electric cooperatives members have enhanced equity positions.

When creating, and then operating, the subsidiary business, the electric cooperative board of directors, executive team, and employees should be in lockstep as to the goals of the subsidiary business as well as the expectations of the membership relating to the subsidiary business. With respect to implementing fiber optics across an electric cooperative's system, there are many benefits to the electric cooperative's operations of having such an investment. Having sufficient communications abilities across the electric network is a key driver to future success to the electric cooperative. Other subsidiary businesses could offer similar opportunities for meeting multiply other objectives the cooperatives might have. When the business implementation achieves multiple objectives across the cooperative, the members win in more ways than the original intent of the cooperative in implementing the subsidiary business.

Electric cooperatives have had great success in operating their core business and providing exceptional service and value to their members. This operating characteristic of the electric cooperative allows it to take the same level of service and value and adopt those same strategies to the subsidiary business. When this is done, the subsidiary business has a competitive advantage and can be successful as long as it is desired by the membership. Cooperatives should ensure significant study and communications with the membership to ensure that any entry into a competitive business subsidiary is actually desired by the membership and has the capacity to be successful.

When moving forward with a subsidiary business, a cooperative should lean into its existing personnel as much as practicable without negatively impacting the electric cooperative core business operations. Many employees are looking for the opportunity to continue to learn and expand their skillsets; these employees are very likely easily shifted to subsidiary business operations and take the electric cooperative culture to the new business. It is key to ensure the culture that makes the electric cooperative successful moves into any new business subsidiaries.

Training/Employee Development

OVERVIEW

The hiring of new employees is at one of the highest levels in history for most electric cooperatives. Projections in large numbers of retirements in all employee classes is holding true. Cooperatives recognize the need to provide training and development for new employees along with those employees identified in succession plans for growth opportunities. The main considerations should be to determine how to deliver the appropriate and necessary training and development opportunities without experiencing large increase in operating expenses in a rising rate environment. To best do this, CEOs, General Managers, and Boards should consider training and development as a critical key operational strategy and ensure it is a part of the overall strategic plan.

KEY CONSIDERATIONS

- Cooperatives should assess the level of importance for a training and development function, whether stand alone or aligned with another area of responsibility.
- Identification of core competencies (overall and job specific) should be developed should a cooperative decide to support a training and development function.
- As part of the strategic planning process, determine if the cooperative can benefit from establishing a new position or adding this responsibility to another key position within the organization.
- Assessments on the potential use of Learning Management Systems (LMS) should be completed. Several cooperatives have utilized the functionality of an LMS to better administer all types of training and development opportunities.
- Conducting an annual workforce planning analysis to identify the number of employees retiring in 5 years, 10 years, and so on to ensure proper planning for career development, promotional opportunities, and smooth transitions.
- Cooperatives should consider developing and maintaining a succession plan for key positions within the cooperative.
- Developing partnerships with the NRECA Training and Development function for courses such as MIP or MIP Select, The Gettysburg Leadership Experience, etc. should be considered when developing talent identified for potential at more senior organizational levels. Local community colleges are also great resources for inexpensive training resources. CFC, CoBank and other local or national consulting agencies are also good resources.

BUSINESS FUNCTION DISCUSSION

Training Needs Assessments

With new employees, new technologies, new operational complexities, among other things, every organization should conduct an overall training needs assessment. These assessments should include competence in job specific responsibilities, communication, leadership, technology and other key areas. The assessment will be more efficient if previous work has been undertaken to establish core competency requirements for all positions within the cooperative structure. Needs assessments can be conducted internally or through the use of external consulting resources. Cooperatives will need to assess if internal resources are available or using external resources to establish foundational knowledge for training needs.

Strategic Planning for People Resources

People resources should always be a key part of the strategic planning process for any electric cooperative. Employees are the key to successful execution of strategy. Newer employees are looking to the cooperative for challenging projects and additional growth and development opportunities. These should be considered as important attraction and retention strategies.

Learning Management Systems

To best administer the training and development functions, cooperatives should assess the benefits of a Learning Management System (LMS). The top five benefits of an LMS are 1) organizes eLearning content in one location, 2) provides unlimited access to eLearning materials, 3) easily tracks learner progress and performance, 4) reduces learning and development costs, and 5) keeps organizations up to date with compliance regulations. A LMS has several modules, including learning management, content development, content library, employee training courses, mobile learning, gamification, testing and assessments, certification and compliance management, and performance tracking. When considering the cost of a LMS, know that there are multiple pricing models. The most common model is a per learner, per month subscription fee. Other models include a per learner, per use, per course or an overall licensing fee. Pricing of these models can range from \$500 to over \$25,000 depending on the strategy determined by the cooperative.

Workforce Planning Analysis

Keeping up with your future retirement projections is critical to ensuring smooth transitions when those retirements occur. Producing an annual report which includes employee name, job titles, location, hire dates and birth dates is helpful in analyzing future development needs.

Training and Development Partnerships

Utilizing the resources offered through NRECA, CFC, CoBank and other consulting resources should be considered when reviewing training and development needs.¹³

How Much Does an LMS Cost? 2024 Pricing Guide.¹⁴

¹³ <u>https://elearningindustry.com/top-8-benefits-of-using-learning-management-systems</u>

¹⁴ <u>https://www.betterbuys.com/hrms/hrms-pricing-guide/</u>

CONCLUSION

The future of the electric industry is uncertain. It is very possible that this future can be shaped by our actions today. Electric cooperatives have a proven business model, but it will take innovation, creativity, and action to fold that model's best traits into meeting—and hopefully exceeding—member expectations. Cooperatives can control their future and continue to be the trusted energy resource upon which members rely. By adhering to the ideals espoused in the Seven Cooperative Principles, cooperatives can imagine, and find solutions to, any industry or consumer transitions that may develop in the future. By working together with cooperative members, the communities' cooperatives serve—along with our associated network partners cooperatives can lead in developing the future of the industry for the benefit of our members. That is and has always been the electric cooperative mission. Change is occurring across many sectors that affect cooperatives and their memberships. Cooperatives must lead the charge in finding solutions to those changes. Others will find those solutions if cooperatives default on that enduring promise to their memberships. Implementing a new vision for the benefit of cooperative members is a simple and profound answer REMDC challenges cooperatives across the country to accept. Cooperatives can be leaders in the continuing transformation of the electric utility industry.