

# CCIF

CRITICAL CONSUMER  
ISSUES FORUM

PLANNING FOR THE ELECTRIC SYSTEM OF THE FUTURE

## The Path To A More Resilient Energy Grid



July 2020





PLANNING FOR THE ELECTRIC SYSTEM OF THE FUTURE

# **The Path To A More Resilient Energy Grid**

**July 2020**

Published by:  
Critical Consumer Issues Forum

This report is available on the CCIF Web site at [www.CCIForum.com](http://www.CCIForum.com)



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# Introduction

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Changes are occurring that will continue to impact the way that energy is produced, delivered, used, and managed, and the energy sector and its many stakeholders must prepare now to tackle challenges that will be presented by an ever-evolving energy mix, a changing climate, and extreme weather events. To facilitate such preparation, leadership of the Critical Consumer Issues Forum (CCIF) introduced energy grid resilience (“resilience” hereinafter) as CCIF’s latest topic at the annual Kickoff Forum in November 2019. During the summit series that followed, participating state commissioners, consumer advocates, and energy company representatives (“three core groups” or “three core communities”) examined several issues pertaining to resilience and, ultimately, developed 12 consensus principles that are featured in this report.

## ***Purpose & Objectives of CCIF Work on Resilience***

The CCIF process is designed to support CCIF’s mission for state commissioners, consumer advocates, and energy companies to work together to provide solutions to meet customer needs. CCIF routinely strives to spur dialogue that facilitates future collaboration; to raise awareness of issues, positions, and concerns; to demonstrate consensus when possible; and to develop a tangible product that memorializes group progress, demonstrates leadership of the three core groups, and informs the broader stakeholder community.

Through application of its signature process to the specific topic of resilience, CCIF set out in late 2019 to build upon its July 2018 consensus principles on distribution grid resilience with a deeper dive into the issues. The following principle from the 2018 report served as a foundation for the collaborative dialogue:

Regulators, consumer advocates, and energy companies should focus on cost-effective investments in electric system infrastructure to improve resilience and otherwise modernize and protect the distribution system. When possible, resilience should be considered as a fundamental component of all infrastructure investments.<sup>1</sup>

CCIF also endeavored to distinguish the concept of resilience from the well-established and well-measured concept of reliability. During the Kickoff Forum, CCIF discovered that, despite significant discussion prior to and since the 2018 report’s examination of these overlapping concepts, participants still were grappling with the difference between resilience and reliability and the impacts of investments and other measures to support reliability, resilience, or both.

Finally, CCIF aimed to address resilience issues to include responsibilities and roles of key groups (energy companies, state commissioners, consumer advocates, other government agencies, and emergency response personnel); data, tools, and investments needed; and regulatory processes and functions. Of course, this notably included supporting participants in the evaluation of prudent investments in resilience and the identification of valuable approaches and resources for resilience planning, design standards, coordination, assessment, implementation, and performance.

## ***Definition for Purposes of CCIF Work on Resilience***

At the Kickoff Forum and throughout the summit process, participants recognized and discussed several existing definitions of resilience, including their own versions and how they distinguish resilience from

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<sup>1</sup> *Security & Resilience at the Distribution Level: Integrating Technologies at the Grid Edge*. Critical Consumer Issues Forum. July 2018. p. 5. <http://www.CCIForum.com/wp-content/uploads/2018/07/CCIF-Report-on-Security-Resilience-July-2018.pdf>.

reliability. To attempt to address the confusion concerning terminology, CCIF participants developed a definition of resilience for the process. While it should not be considered a consensus definition, the following should be helpful for reference during review of this report’s consensus principles:

**Resilience:** The ability to anticipate, prepare for, and adapt to changing conditions to mitigate, respond to, operate through, and recover rapidly from high-impact disruptions.

## Reliability vs. Resilience: features, metrics, actions

	Reliability	Resilience
<b>Common features/ characteristics</b>	Routine, expected (though, not “planned”), normally localized, shorter duration interruptions of electric service  Larger events will make it into the local headlines	Infrequent, unexpected, widespread/long duration power interruptions, often with significant corollary impacts  Almost always “event” based  Always national headline worthy
<b>Metrics</b>	Well-established, annualized (SAIDI, SAIFI, MAIFI), with provisions for “major events”  Rarely include non-electricity impacts	Familiar, but non-standardized, and generally event-based (number of customers affected; hours without electric service)  Routinely also include non-electricity impacts (e.g., costs to firms; health and safety impacts)

## Reliability vs. Resilience: decision-making

	Reliability	Resilience
<b>Entities involved in decision making</b>	Electric utility and its regulator/oversight board, primarily	Electric utility and regulator; many times, acting in response to State legislative direction or Governor’s orders  Routinely in conjunction with parties that have responsibilities for other critical infrastructures, including local/regional/state/federal agencies/authorities, and communities/elected officials
<b>Factors affecting decision making</b>	Actuarial records on frequency of exposure – widely understood risks: insurable  Well-understood/tested practices/approaches  Understood to be an expected cost of doing business	No actuarial basis to establish likelihood of occurrence – widely varying perceptions of risk/exposure: “un-insurable” risk  Limited opportunities to test strategies in the field  Large dollar amounts/extraordinary expenditures may require special approval/vote  Political leadership critical



ENERGY TECHNOLOGIES AREA

Figure 1: Excerpt from presentation by Joseph H. Eto, Staff Scientist, Lawrence Berkeley National Laboratory, at CCIF Setting the Stage Webinar on April 28, 2020.



## **Scope of CCIF Work on Resilience**

While the definition is broad, CCIF narrowed its focus to certain aspects of resilience for purposes of its recent collaborative process. Given time constraints, this approach enabled a deeper dive into the following areas than broader coverage of all resilience issues would have allowed:

- *Distribution grid resilience.* Although transmission grid resilience is an important issue, CCIF focused its discussion and the resulting consensus principles on resilience of the distribution system.
- *Extreme weather and other high-impact catastrophic events.* Such disruptive events include:
  - Droughts and associated water shortages;
  - Earthquakes;
  - Flood/storm surges;
  - Hurricanes;
  - Ice storms;
  - Pandemics;
  - Regional storms and tornados;
  - Space weather;
  - Tsunamis;
  - Volcanic events; and
  - Wildfires.<sup>2</sup>
- *Climate adaptation.* This involves planning and adapting the energy grid in anticipation of evolving climate-related impacts.

Notably, CCIF chose not to focus its discussion or to develop principles on human-induced events (cyberattacks, operator errors, etc.) notwithstanding CCIF participants' concerns about such events. Protecting against and recovering from human-induced disruptions are important components of resilience; however, participants agreed to forego significant consideration in favor of devoting more time to other threats. It is important to highlight that some resilience investments and measures to address extreme weather or other high-impact catastrophic events also provide resilience in response to certain human-induced events.

Another area for which CCIF participants often engage in their states and service areas—but that was discussed in a limited manner during the recent CCIF process—is the interdependency between energy companies and other service providers. First, regarding interdependencies with communications services, the principles touch on broadband availability in the context of resilience, but they do not address issues concerning the communications sector's reliance on the energy grid (e.g., to power cell towers). Second, regarding interdependencies with water and wastewater services, the basic tenet that “there is no water if no electric” and, in many cases, vice versa (e.g., cooling towers, steam production), was raised during the process but is not addressed in these principles.

\* \* \*

Given the increasing importance of issues pertaining to resilience, additional discussion is expected and encouraged. CCIF trusts that the valuable perspectives reflected in the consensus principles will spur further constructive dialogue among state commissioners; consumer advocates; energy companies; local, state, and federal policymakers; and the broader stakeholder community.

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<sup>2</sup> National Academies of Sciences, Engineering, and Medicine. 2017. *Enhancing the Resilience of the Nation's Electricity System*. Washington, DC: The National Academies Press. <https://www.nap.edu/24836>. (See also [Report Release Webinar Slides](#), Slide 15).

# Consensus Principles

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## ***Roles***

1. Energy resilience is a shared responsibility of public- and private-sector entities that include:

- Energy companies;
- State commissions;
- Consumer advocates;
- Other government agencies and officials; and
- Emergency response personnel, including critical infrastructure providers such as hospitals, water treatment facilities, etc.

There is an increasing role in resilience for electric and natural gas consumers, community representatives, and other stakeholders.

2. Recognizing their shared responsibility, participants support adequate, equitable, and cost-effective resilience.
3. **Energy companies** should continue to proactively assess, plan for, invest in, and implement equitable and cost-effective strategies to meet identified resilience objectives that support consumers, communities, and national security.

**State commissions** should continue to use their authority to ensure that:

- Energy company resilience plans:
  - Have clearly defined objectives;
  - Are adequate to meet defined objectives;
  - Are evidence-based, equitable, and cost-effective; and
  - Produce results that are measurable and in line with expected benefits.
- Processes are in place to receive input from consumers and other stakeholders and to provide oversight on resilience matters.
- Recovery of resilience costs is just and reasonable.

**Consumer advocates** should continue to:

- Actively participate in regulatory and collaborative stakeholder processes on resilience;
- Help define resilience objectives, identify appropriate resilience projects, and establish metrics and measurement criteria to aid in post-project evaluation; and
- Review and present evidence on allowable project costs, equitable cost recovery, and how projects met resilience objectives.

4. Energy companies should engage with consumers, communities, and other stakeholders about:
  - Resilience goals;
  - Strategies to meet those goals;
  - Potential costs and benefits of implementing proposed plans; and
  - Costs and benefits of Commission-approved plans.
5. Federal, state, and local policymakers should support regional planning and collaboration and make funding available to implement resilience measures.

## **Data, Tools, and Investments**

6. There is no “one-size-fits-all” solution for resilience investment, as circumstances in both states and energy company service territories vary widely (e.g., different high-impact events, critical infrastructure, priorities, regulatory structures, and community needs or interests). However, state commissions, consumer advocates, energy companies, and stakeholders should endeavor to establish methods for gathering lessons learned and sharing solutions that have proven effective over a range of situations.
7. State commissions, consumer advocates, energy companies, consumers, and other stakeholders would benefit from collaborative development of independent and credible tools to guide proactive investment in resilience, including:
  - A risk- and probability-based cost-benefit framework to value resilience from the consumer perspective [e.g., an updated Interruption Cost Estimate (ICE) Calculator or similar tool that estimates outage impacts on consumers and the value of investments or measures designed to provide resilience while considering the probability that an event may occur];
  - Modeling assumptions (e.g., temperatures, storms, ice, wind, flooding, and load shift); and
  - Metrics to measure progress and track performance.
8. Resilience-based design standards and planning criteria used to evaluate resilience investments should provide the flexibility necessary to accommodate regional and local system needs and lessons learned from prior events.
9. Reliable broadband networks should be universally available because they are increasingly critical infrastructure that facilitate communication between consumers and their energy companies before, during, and after high-impact events.
10. Energy companies need greater flexibility to use drones beyond visual line-of-sight (BVLOS) to more easily:
  - Identify vulnerabilities or pending threats (e.g., conditions that could lead to wildfires) to their system and consumers;
  - Locate damage on their system (both distribution and transmission); and
  - Restore service and recover from extreme weather and other catastrophic events.



*EEI's Adam Benshoff (right) engages Setting the Stage panelists (left to right) Joe Eto (Lawrence Berkeley National Laboratory) and Ann Scott (7-Eleven, Inc.). Also participating on the panel was Carrie Jenks (M.J. Bradley & Associates).*

## Regulatory Processes & Functions

11. Regulatory processes should be designed to ensure that energy company grid resilience efforts (e.g., identified objectives; proactive assessment and planning; prudent investment; implementation; tracking of costs, benefits, and performance; etc.) are appropriate and lead to cost-effective measures that improve resilience.
12. Energy company resilience plans—and the regulatory processes to evaluate those plans—should be designed to be flexible enough to address:
  - Cost-effectiveness;
  - Technology;
  - Climate adaptation;
  - Overlap with Integrated Resource Plans (IRPs), distribution system plans, and other asset management plans;
  - Cost tracking;
  - Stakeholder and community engagement;
  - Communication plans; and
  - Coordination with other service providers and emergency management.

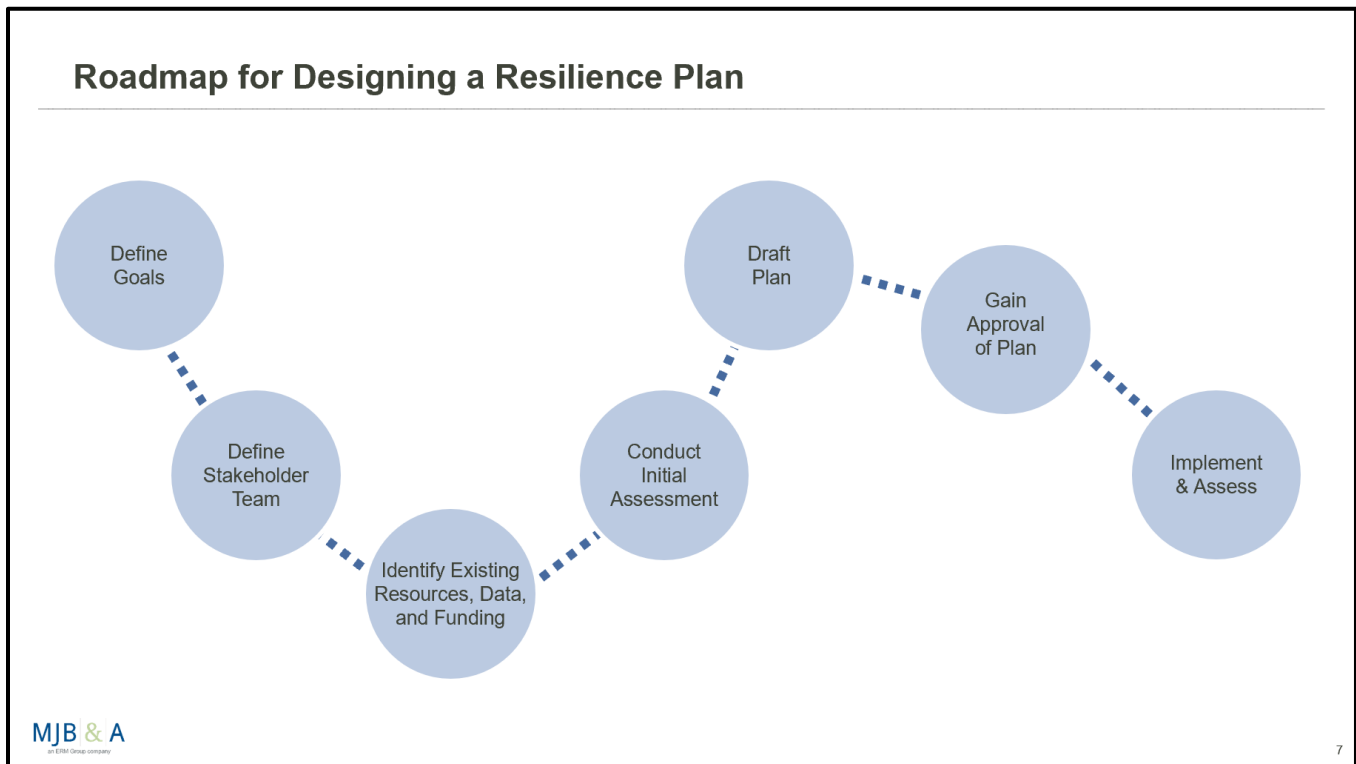


Figure 2: Excerpt from presentation by Carrie F. Jenks, Executive Vice President, M.J. Bradley & Associates, at CCIF Setting the Stage Webinar on April 28, 2020.

## Conclusion

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### **Objectives Met**

State commissioners, consumer advocates, and energy company representatives participated in a series of important and timely dialogues (many conducted virtually due to challenges presented by COVID-19) and worked together on the consensus principles featured in this report. Recognizing that the report does not address all issues with respect to resilience, it successfully built upon CCIF's past work on this topic. Furthermore, CCIF trusts that this report will serve as a useful tool for additional dialogue and collaboration among the three core communities as well as policymakers and other stakeholders.

### **Special Recognition**

The CCIF Executive and Advisory Committees would like to acknowledge the following individuals and organizations whose valuable contributions resulted in this report:

- The National Association of Regulatory Utility Commissioners (NARUC), the National Association of State Utility Consumer Advocates (NASUCA), and the Edison Electric Institute (EEI), particularly the guidance of their respective leaders and the valuable input and hard work of their respective teams;
- Participating commissioners, consumer advocates, and energy company representatives; and
- Speakers at the 2019 Kickoff Forum, 2020 Summits, and 2020 Virtual Report Release.

### **Disclaimer**

The principles developed within the 2020 summit process—or other featured information within this report—are not intended to override any individual or collective policies or positions developed by state commissioners, consumer advocates, energy companies, or by NARUC, NASUCA, EEI, or other organizations represented by certain participants. Instead, CCIF work products are meant to complement such policies or positions and to provide a framework for additional discussion and policy development.



*During the CCIF Kickoff Forum in San Antonio, Michael Jarro, Vice President of Transmission and Substation, Florida Power & Light Company, compares customer restoration data from Hurricane Wilma in 2005 and Hurricane Irma in 2017.*



# Appendix

## Acknowledgment of 2020 Summit Participants

Due to the nature of the collaborative process and the extensive degree of participation, specific principles developed within the 2020 summit process or other featured information within this report should not be attributed to specific individuals or to the organizations that they represent. With that understanding, CCIF acknowledges the following individuals\* who participated in CCIF events focused on the topic *Planning for the Electric System of the Future: The Path to a More Resilient Energy Grid*:

**Hon. Leo R. Asuncion, Jr.**  
Hawaii Public Utilities  
Commission

**Chris Ayers**  
North Carolina Utilities  
Commission – Public Staff

**Hon. Jay M. Balasbas**  
Washington Utilities and  
Transportation Commission

**Conitsha Barnes**  
Duke Energy

**Hon. Philip L. Bartlett II**  
Maine Public Utilities  
Commission

**Adam Benshoff**  
Edison Electric Institute

**Richard Berkley**  
Public Utility Law Project of  
New York

**Greg Bernosky**  
Arizona Public Service

**Noel Black**  
Southern Company

**Greg Bollom**  
Madison Gas and  
Electric Company

**Shawn Bonfield**  
Avista Corporation

**Bev Bowlby**  
Ameren Illinois

**Stefanie Brand**  
New Jersey Division of  
Rate Counsel

**Christopher Budzynski**  
Exelon Utilities

**Josh Castonguay**  
Green Mountain Power

**Hon. Upendra J. Chivukula**  
New Jersey Board of  
Public Utilities

**Christina Cody**  
Xcel Energy

**Hon. Maida Coleman**  
Missouri Public  
Service Commission

**Lynn P. Costantini**  
National Association of  
Regulatory Utility  
Commissioners (NARUC)

**Hon. David Danner**  
Washington Utilities and  
Transportation Commission

**David Dickerson**  
Southern California Edison

**John R. Evans**  
Pennsylvania Office of  
Small Business Advocate

**William Fine**  
Indiana Office of Utility  
Consumer Counselor

**Hon. Sarah Freeman**  
Indiana Utility  
Regulatory Commission

**Linda Gervais**  
Avista Corporation

**Sarah M. Gott**  
Eversource

**Anne Grealy**  
FirstEnergy



Washington Commissioner Ann Rendahl (right) moderates a “Setting the Stage” panel, including (from left to right) Connecticut Office of Consumer Counsel’s Dave Thompson, New Jersey Commissioner Mary-Anna Holden, and Georgia Power Company’s Mike Robinson. NARUC’s Dr. Lynn Costantini also participated in the panel.



**Jeff Grubb**  
Georgia Power Company

**Hon. Gary Hanson**  
South Dakota Public Utility  
Commission

**Hon. Sarah Hofmann**  
Vermont Public Utility  
Commission

**Hon. Mary-Anna Holden**  
New Jersey Board of  
Public Utilities

**Amber Housholder**  
Evergy

**Hon. John Howard**  
South Carolina Public Service  
Commission

**Thaddeus Johnson**  
DC Office of the People's  
Counsel

**Hon. Paul Kjellander**  
Idaho Public Utilities  
Commission

**Becky Knox**  
Edison Electric Institute

**Hon. Odogwu O. Linton, Esq.**  
Maryland Public Service  
Commission

**Shelby Linton-Keddie**  
Edison Electric Institute

**Ivy Lyn**  
Edison Electric Institute

**Hon. C.J. Manthe**  
Public Utilities Commission of  
Nevada

**Olivia W. Martin**  
Alabama Office of the  
Attorney General

**David Maske**  
Georgia Power Company

**Hon. Lillian Mateo-Santos**  
Puerto Rico Energy Bureau

**Katrina McMurrian**  
Critical Consumer Issues  
Forum

**Philip D. Moeller**  
Edison Electric Institute

**Kristin Munsch**  
National Grid

**Bob Nelson**  
Montana Consumer Counsel

**Hon. Chris Nelson**  
South Dakota Public Utility  
Commission

**David W. Nickel**  
Kansas Citizens' Utility  
Ratepayer Board

**Hon. Ellen Nowak**  
Public Service Commission of  
Wisconsin

**Tyra Anne Peluso**  
Connecticut Office of  
Consumer Counsel

**Brian Penington**  
Alliant Energy

**Hon. Jennifer Potter**  
Hawaii Public Utilities  
Commission

**Michael Puhnaty**  
Georgia Power Company

**Hon. Ann Rendahl**  
Washington Utilities and  
Transportation Commission

**Hon. Michael T. Richard**  
Maryland Public Service  
Commission

**Jackie Roberts**  
West Virginia Consumer  
Advocate Division

**Michael Robinson**  
Georgia Power Company

**Hon. Anthony Z. Roisman**  
Vermont Public Utility  
Commission

**Maggie Sallah**  
American Electric Power

**Cindy Schonhaut**  
Colorado Office of Consumer  
Counsel

**Corey Singletary**  
Citizens Utility Board  
of Wisconsin

**Andrew Slater**  
Delaware Division of the  
Public Advocate

**Jason Smith**  
Edison Electric Institute

**Jennifer Smith**  
Avista Corporation

**Hon. Dianne Solomon**  
New Jersey Board of  
Public Utilities

**David Springe**  
National Association of State  
Utility Consumer Advocates  
(NASUCA)

**Hon. Jason Stanek**  
Maryland Public Service  
Commission

**Gaye Suggett**  
Ameren Missouri

**Alexis Sulentic**  
Edison Electric Institute

**Joseph E. Svachula**  
Exelon Utilities

**Dave L. Thompson**  
Connecticut Office of  
Consumer Counsel

**Hon. Mary Throne**  
Wyoming Public  
Service Commission

**Hon. Rebecca Cameron Valcq**  
Public Service Commission of  
Wisconsin

**Hon. Nick Wagner**  
Iowa Utilities Board

**Teresa Reed Wagner**  
Pennsylvania Office of  
Small Business Advocate

**Kiera Zitelman**  
National Association of  
Regulatory Utility  
Commissioners (NARUC)

*\*List represents individuals and their organizations at the time of participation in the summits.*



## **CCIF Events on Resilience**

CCIF appreciates all those who were involved in making the following series of events a success, especially given the unexpected move to virtual events beginning in the spring of 2020.

### **Fall Kickoff Forum**

November 16, 2019  
Grand Hyatt San Antonio  
San Antonio, TX

### **Spring Summit 1**

February 27-28, 2020  
Marriott Tampa Westshore  
Tampa, FL

### **Setting the Stage Webinar**

April 28, 2020

### **Virtual Summit 2**

May 12, 2020

### **Virtual Summit 3**

May 19, 2020

### **Virtual Summit 4**

May 28, 2020

### **Virtual Report Release**

July 16, 2020



*At the CCIF Kickoff Forum in San Antonio, Missouri Commissioner Maida Coleman leads a discussion with Exelon's Sandy Grace, Washington Commissioner Jay Balasbas, and the Michigan Department of Attorney General's Michael Moody.*

## Resources Regarding Resilience

The following list contains notable resources on energy grid resilience. Please note that inclusion herein should not be considered endorsement by CCIF or participants and that information within these resources may not be the most current.

- [Advancing Electric System Resilience with Distributed Energy Resources: A Review of State Policies](#). Kiera Zitelman, NARUC. April 2020.
- [Advancing Electric System Resilience with Distributed Energy Resources: Key Questions and Resources](#). Kiera Zitelman, NARUC. April 2020.
- [A Customer-Focused Framework for Electric System Resilience](#). Alison Silverstein, Rob Gramlich, and Michael Goggin. Grid Strategies LLC. May 2018.
- [Estimating Power System Interruption Costs: A Guidebook for Electric Utilities](#). Michael J. Sullivan, Myles T. Collins, Josh A. Schellenberg, and Peter H. Larsen. Lawrence Berkeley National Laboratory. July 2018.
- [Frontiers in the Economics of Widespread, Long-Duration Power Interruptions: Proceedings from an Expert Workshop](#). Peter H. Larsen, Alan H. Sanstad, Kristina Hamachi LaCommare, and Joseph H. Eto. Lawrence Berkeley National Laboratory. January 2019.
- [Key Considerations for Electric Sector Climate Resilience Policy and Investments](#). Carrie Jenks, Grace Van Horn, and Jane Culkin, M.J. Bradley & Associates. December 2019.
- [NARUC Creates Emergency Preparedness, Recovery and Resiliency Task Force](#). NARUC. June 18, 2020.
- [Utility Investments in Resilience of Electricity Systems](#). Future Electric Utility Regulation Report Series, Report No. 11. Organization of MISO States, National Rural Electric Cooperative Association, Edison Electric Institute, and National Association of State Utility Consumer Advocates for Lawrence Berkeley National Laboratory. April 2019.
- [The Value of Resilience for Distributed Energy Resources: An Overview of Current Analytical Practices](#). Wilson Rickerson, Jonathan Gillis, and Marisa Bulkeley. Converge Strategies, LLC for NARUC. April 2019.



*At CCIF's Kickoff Forum in November 2019, NARUC President Emeritus and Iowa Commissioner Nick Wagner, EEL's Executive Vice President, Business Operations Group and Regulatory Affairs Phil Moeller, and NASUCA President Emeritus and Iowa Consumer Advocate Mark Schuling enjoy the dialogue on resilience.*

## **CCIF Overview**

### ***CCIF Formation, Leadership, and Process***

Formed in 2010, the Critical Consumer Issues Forum (CCIF) brings together state commissioners, consumer advocates, and electric company representatives to tackle consumer-focused energy issues through interactive discourse and debate, to find consensus when possible, and, at a minimum, to achieve a clearer understanding of—and appreciation for—each other’s perspectives and positions.

To provide leadership, CCIF organized Executive and Advisory Committees, each with balanced representation from the three core communities. Committee members guide CCIF initiatives at each of the following steps in the process:

1. Kickoff forum, typically collocated with the NARUC & NASUCA Annual Meetings, to introduce a topic and initiate discussion among CCIF’s three core communities and other stakeholders;
2. Series of invitation-only summits in which the three groups engage in facilitated dialogue; and
3. Issuance of a report to share key takeaways with the broader stakeholder community and to serve as a foundation for additional dialogue on numerous fronts.

### ***CCIF Value & Successful Track Record***

By providing a non-adversarial, collaborative environment in which participants from the three core groups candidly can discuss and proactively can address a variety of energy issues with potentially broad impacts on electric consumers, CCIF consistently has produced credible reports that:

- Demonstrate support for key concepts to the broader stakeholder community;
- Demonstrate leadership of the three core groups on a range of energy topics;
- Initiate, inform, or focus dialogue at the state level (regulatory and broader policy dialogue); and
- Focus on consumer aspects of energy topics and facilitate proactive consumer education and protection.

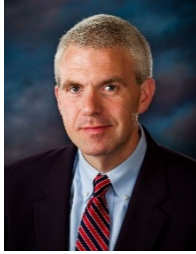
Specifically, the following CCIF reports have contributed to energy policy debate in a constructive way:

- [\*Grid Modernization Issues with a Focus on Consumers\*](#), July 2011
- [\*Focus on The Regulatory Process\*](#), July 2012
- [\*Policy Considerations Related to Distributed Energy Resources\*](#), July 2013
- [\*DG: A Balanced Path Forward: Providing Customer Choice While Ensuring Reliability\*](#), July 2014
- [\*The Evolving Distribution System: Helping Consumers Navigate Access to Products, Services and Technologies\*](#), July 2015
- [\*Consumer Solutions: Meeting Consumer Needs on All Levels\*](#), July 2016
- [\*Connecting Communities: Smart Cities, Enabling Technologies, and the Grid\*](#), July 2017
- [\*Security & Resilience at the Distribution Level: Integrating Technologies at the Grid Edge\*](#), July 2018
- [\*Driving a Customer-Focused Energy Future: Examining Policies for Delivering Smart Mobility and Other Customer Solutions\*](#), July 2019

All CCIF reports are available for download at [www.CCIForum.com](http://www.CCIForum.com).

## CCIF Leadership

### **Executive Committee**



**Brandon Presley**  
*Mississippi Public Service  
Commissioner &  
NARUC President*



**Jackie Roberts**  
*West Virginia Consumer Advocate  
Division Director &  
NASUCA President*



**Philip D. Moeller**  
*EEl Executive Vice President of  
Business Operations Group and  
Regulatory Affairs*

### **Advisory Committee**



**Maida J. Coleman**  
*Commissioner  
Missouri Public Service Commission*



**David W. Danner**  
*Chairman  
Washington Utilities and  
Transportation Commission*



**Jason M. Stanek**  
*Chairman  
Maryland Public Service Commission*



**Christopher J. Ayers**  
*Executive Director  
North Carolina Utilities Commission  
Public Staff*



**Lisa Gafken**  
*Asst. AG & Public Counsel Unit Chief  
Washington State Office of the  
Attorney General*



**J.R. Kelly**  
*Public Counsel  
Florida Office of Public Counsel*



**Gregory A. Bollom**  
*Asst. VP & Regulatory Consultant  
Madison Gas & Electric Company*



**Robert S. Kenney**  
*Vice President, Regulatory Affairs  
Pacific Gas & Electric Company*



**Barbara Lockwood**  
*Senior Vice President, Public Policy  
Arizona Public Service*



## CCIF Executive Director



**Katrina McMurrian**  
*Executive Director*  
Critical Consumer Issues Forum

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Twitter: @CCIForum

A former Florida Public Service Commissioner (2006–2009), Katrina McMurrian draws upon extensive regulatory experience to organize and facilitate relevant policy forums and to advise an array of entities on key regulatory and policy issues in the energy arena.

McMurrian currently serves as the Executive Director of the Critical Consumer Issues Forum (CCIF), a unique national forum in which state utility regulators, consumer advocates, and electric companies—via a series of facilitated, interactive dialogues—engage in productive debate and often develop consensus on key issues of importance to consumers and policymakers. CCIF has produced reports on a range of energy topics including grid modernization, distributed generation, consumer solutions, smart communities, and electric transportation.

McMurrian also serves as the Executive Director of the Nuclear Waste Strategy Coalition (NWSC), an ad hoc organization representing the collective interests of member state utility regulators, state consumer advocates, other state officials, tribal governments, local governments, electric companies with operating and shutdown nuclear reactors, and other experts on nuclear waste policy matters.

McMurrian serves on the Southwest Research Institute Board of Advisory Trustees, as an associate member of the Financial Research Institute (FRI), and as a member of the American Nuclear Society (ANS), the Institute for Nuclear Materials Management (INMM), and U.S. Women in Nuclear (U.S. WIN).

A Northwest Florida native, McMurrian received a Bachelor’s degree in finance and an MBA from Florida State University. She and her husband currently reside near Nashville, Tennessee.

## **RECOGNITION OF REBECCA HARSH KNOX**

CCIF leadership and participants express our sincere appreciation to Becky Knox for her commitment to the exceptional collaborative process that has advanced the regulatory and policy dialogue on several energy topics. Becky and former EEI colleague Liz Stipnieks envisioned the concept of bringing state utility regulators, consumer advocates, and electric company representatives together and worked to ensure CCIF’s success. “Becky strongly believed in the need for, and value of, collaboration among these three communities,” said Katrina McMurrian. “We are grateful for her leadership as well as for the ideas and the expertise that she brought to the U-shaped table. CCIF wishes Becky the best in her new position at American Water.”



# Save the Date for 11<sup>th</sup> Annual CCIF Kickoff Forum



**Saturday,  
November 7, 2020**  
**2:00–5:00 pm**  
*(Reception to follow)*  
**Sheraton Seattle Hotel**  
**Seattle, WA**

**Registration** Please save the date on your calendar and check [www.CCIForum.com](http://www.CCIForum.com) for information as the date approaches. There is no charge to participate, but a separate registration with CCIF is required.

**For More Info** At this time, we are planning for an in-person meeting. However, this could change based on the COVID-19 pandemic. Information and updates about the forum will be posted at [www.CCIForum.com](http://www.CCIForum.com). You may also contact Katrina McMurrian, CCIF Executive Director, by e-mail at: [katrina@CCIForum.com](mailto:katrina@CCIForum.com) or by phone at **615-905-1375**.

This event is funded by the Edison Electric Institute. It is not sponsored by NARUC or NASUCA and is not a part of the agendas of the 2020 NARUC Annual Meeting & Education Conference or the 2020 NASUCA Annual Meeting.





# CCIF

CRITICAL CONSUMER  
ISSUES FORUM

**For more information about CCIF or this report:**

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