Regulators' Financial Toolbox: AMI – Unlocking Resilience

TUESDAY, MARCH 2, 2021

NARUC CENTER FOR PARTNERSHIPS AND INNOVATION

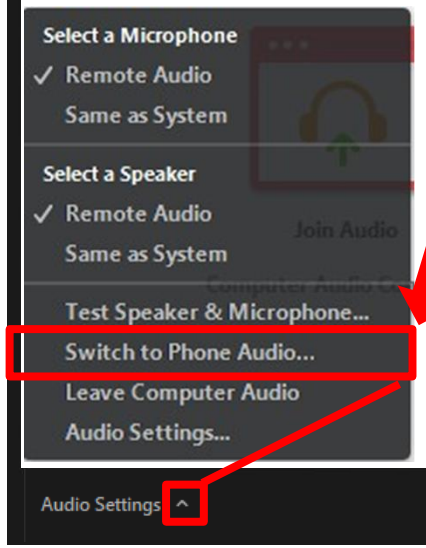
Recording

Zoom Webinar 101

If you have audio issues, dial in using your phone. You can find dial in information with a unique pin here.

Click **Chat** to show the chat window.

Click **Q&A** to type a question during Q&A sessions.



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NARUC CENTER FOR PARTNERSHIPS AND INNOVATION

NARUC
Center for Partnership and Innovation (CPI)

https://www.naruc.org/cpi-1/electricity-system-transition/valuation-and-ratemaking/

NARUC

The National Association of Regulatory Utility Commissioners (NARUC) is a non-profit organization founded in 1889.

Our Members are the state regulatory Commissioners in all 50 states & the territories. FERC & FCC Commissioners are also members. NARUC has Associate Members in over 20 other countries.

NARUC member agencies regulate electricity, natural gas, telecommunications, and water utilities.

CPI

Grant-funded team dedicated to providing technical assistance to members.

CPI identified emerging challenges and connects state commissions with expertise and strategies.

CPI builds relationships, develops resources, and delivers trainings.

CPI thanks the US Department of Energy for support in today's session.

NARUC CPI Regulators Toolbox Series

https://www.naruc.org/cpi-1/electricity-system-transition/valuation-and-ratemaking/

The Regulator's Financial Toolbox series examines regulatory issues where technology meets bookkeeping.

This webinar will explain what AMI is and does, what are examples of the benefits of AMI, its role in enabling a more resilient system, what are regulatory considerations for AMI, and what is the future for AMI.

After the webinar, the recording and a summary brief will be posted on the CPI website, www.naruc.org/cpi-1. Presentations are available now.

SERIES TOPICS

- ✓ Cloud Computing (Fall 2020)
- ✓ AMI (March 2, 2021)
- ❑ Network Communications (Spring 2021)
- ❑ Resilience Technologies (Summer 2021)

Join our listserv for all CPI events.

Agenda & Housekeeping

AGENDA

3:00 ET	Introduction
3:05 ET	**Moderator:** Commissioner Talina Mathews (Kentucky PSC)
3:15 ET	Dennis Reynolds (Florida Power & Light)
3:25 ET	Michael Jarro (Florida Power & Light)
3:35 ET	Jess Melanson (Utilidata)
3:35 ET	Joshua Ryor (Connecticut PURA)
3:45 ET	Chris Villarreal (Plugged In Strategies)
3:55 ET	Q&A
4:30 ET	Close

DURING THE WEBINAR

The webinar is being recorded.

Chat the organizers anytime for questions on the logistics or discussion.

AFTER THE WEBINAR

Please allow a few business days to process and post the webinar recording to www.naruc.org/cpi.

Commissioner Talina Mathews

KENTUCKY PUBLIC SERVICE COMMISSION (KY PSC)

PANEL MODERATOR

Up next…

Dennis Reynolds
Michael Jarro

FLORIDA POWER & LIGHT (FP&L)

How smart technology helped us build one of the nation's most intelligent and reliable energy grids

Dennis Reynolds – Senior Director, Revenue Management & Smart Meter Operations

Michael Jarro – Vice President, Distribution Operations

Florida Power & Light Company

March 2, 2021

Florida Power & Light Company – 95 years of innovation

- Established 1925
- Most reliable electric company in the U.S.
- 5.1+ million customer accounts
- Service territory covering 27,000 square miles
- 75,000+ miles of power lines

Smart technology has helped us build one of the nation's most intelligent and reliable energy grids

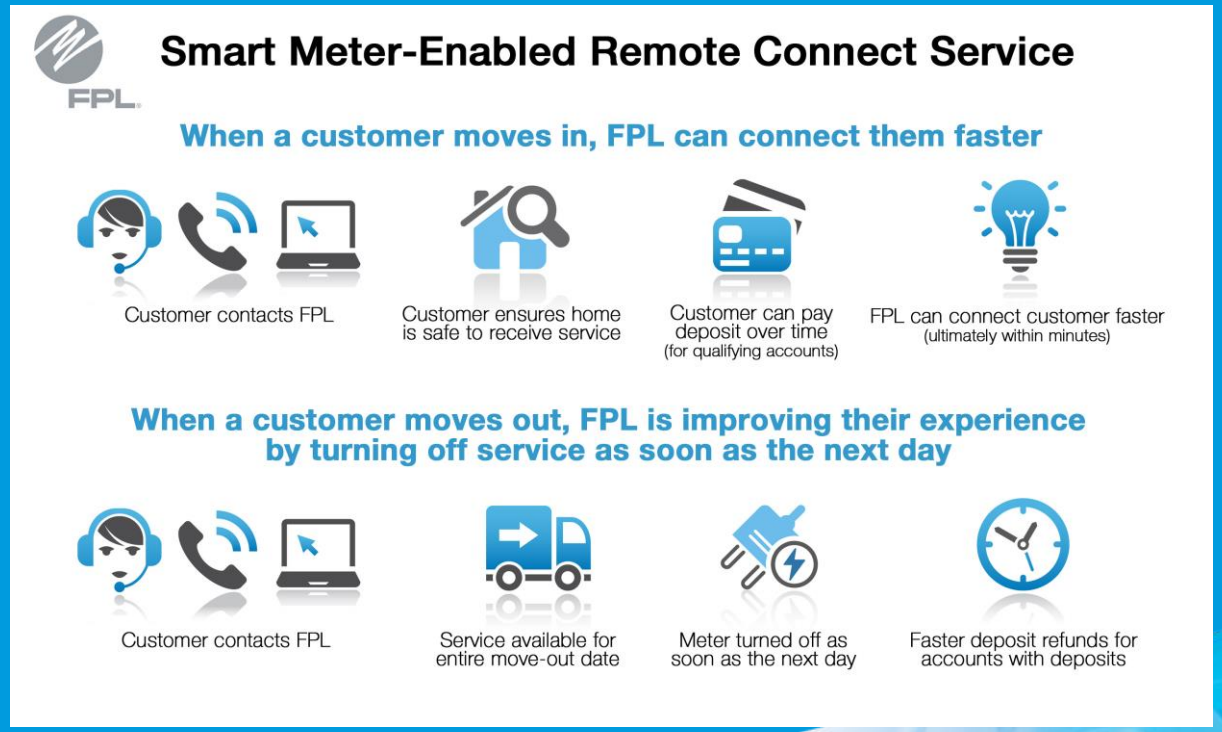
- **Early adopter of smart meter/grid technology**
  - Numerous technology pilots conducted in the early-mid 2000s
- **Smart meters were initially launched for billing and credit & collections benefits**
  - Longer-term vision was for the smart meter network to be a strategic platform to leverage in the future
- **Deployed 4.7 million smart meters and the associated communication network between 2009-2013**
  - Subsequent deployment efforts have extended smart meters to virtually all 5.1 million of our customers

Smart meters created transformational change in our organization, beginning with Customer Service

- **Achieved smart meter billing read rate of 99.9%**
  - Increased use of daily reads to avoid estimated bills, enhance storm billing, etc.
- **Provided more information than ever to help customers control energy usage**
  - Created Online Energy Dashboard
- **Facilitated data analytics to drive operational excellence**
  - Created models for theft, billing, etc.; integrated smart meter data into operational systems

Smart meters created transformational change in our organization, beginning with Customer Service (continued)

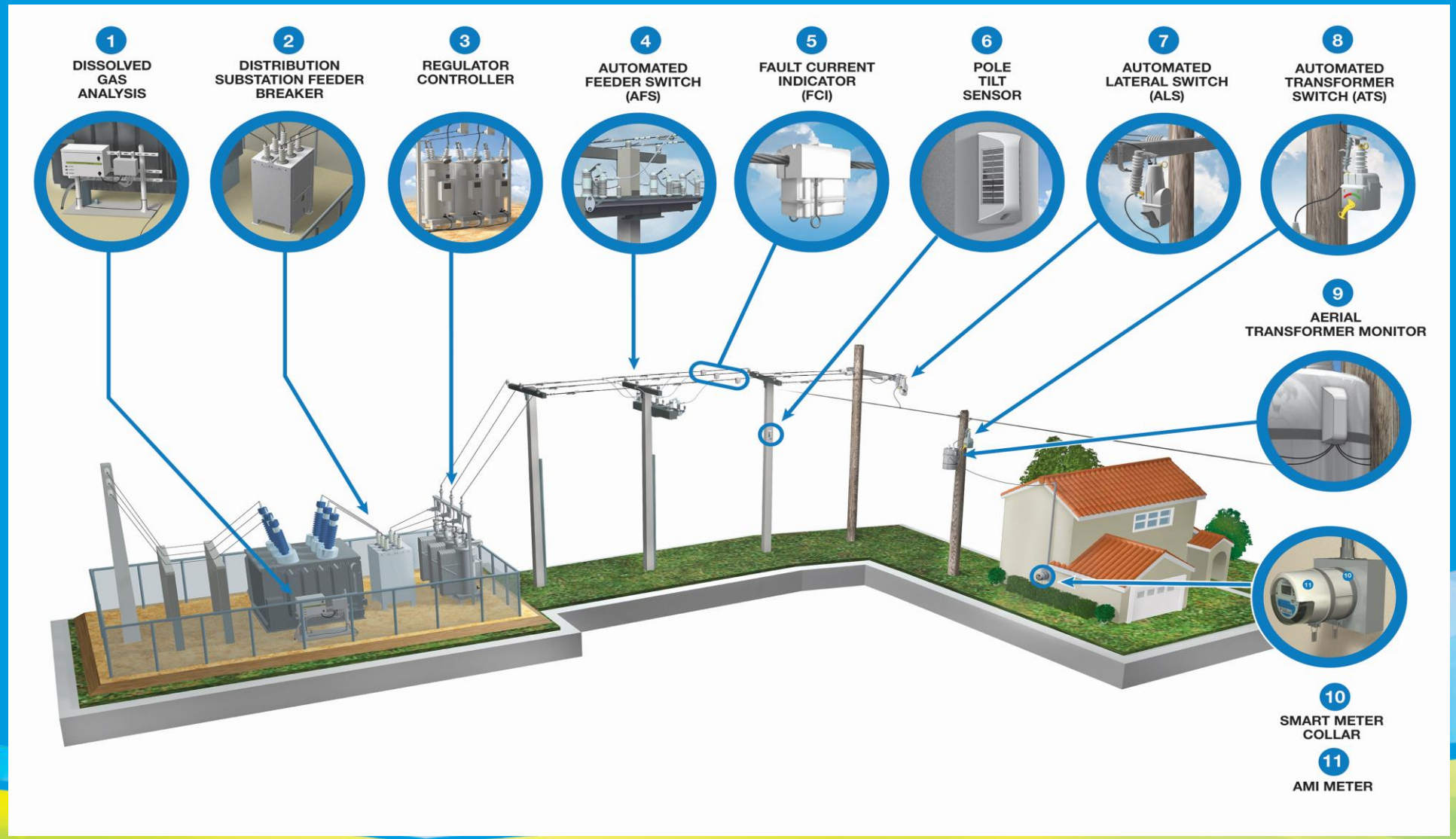
- **Activated functionality to connect and disconnect customers remotely within minutes**
  - No need for on-site FPL visit
  - Conducted extensive testing and customer communications
- **Created operational improvements**
  - Faster connection and disconnection of service
  - Exact start and final readings
- **Resulted in workforce reductions in collections and meter services**
  - Provided career assistance for employees to get new positions within organization



We began leveraging smart technology across our distribution system – and the ‘smart grid’ was born

- Deployed automated self-healing grid technologies to prevent and lessen interruption of electric service
- Digitally connected entire substation and feeder fleet
- Enabled real-time predictive equipment analytics and diagnostics with smart sensors
- Changed paradigm in industry by getting in front of system failures

We are on a continuous journey to deploy additional cutting-edge switches and sensors throughout the grid



By leveraging analytics with smart technologies, we're becoming the nation's most proactive energy company

- Building new smart meter analytics to predict and detect power problems
- Developing new algorithms and machine learning tools that apply data and tell us more about our grid than ever before
- Continue to develop remote field monitoring tools

Continuous innovation and automation is transforming our energy grid into an intelligent, seamless integrated system

- Predictive algorithms
- Artificial Intelligence
- Drones
- Image recognition
- Machine learning

That was…

Dennis Reynolds
Michael Jarro

FLORIDA POWER & LIGHT (FP&L)

Up next…

Jess Melanson

UTILIDATA

MAXIMIZING THE VALUE OF AMI

AMI SHOULD DELIVER OPERATIONAL CAPABILITIES

An investment in smart meters should deliver:

- Visibility to the edge of the system
- Grid-edge optimization
- Anomaly detection

GRID-EDGE SOFTWARE DELIVERS CRITICAL BENEFITS

Grid-edge software can unlock a range of AMI benefits, including:

- 3%+ energy savings
- 3%+ peak demand reduction
- 50%+ increase in hosting capacity
- Fault identification and prediction
- Targeted shut-offs
- Open data

TRADITIONAL APPROACHES ARE FAILING

Full AMI benefits are not being realized because:

- Benefit-cost analyses are backward-looking and insufficient
- “Figure it out later” doesn’t work
- Utilities are not asking the market for these solutions

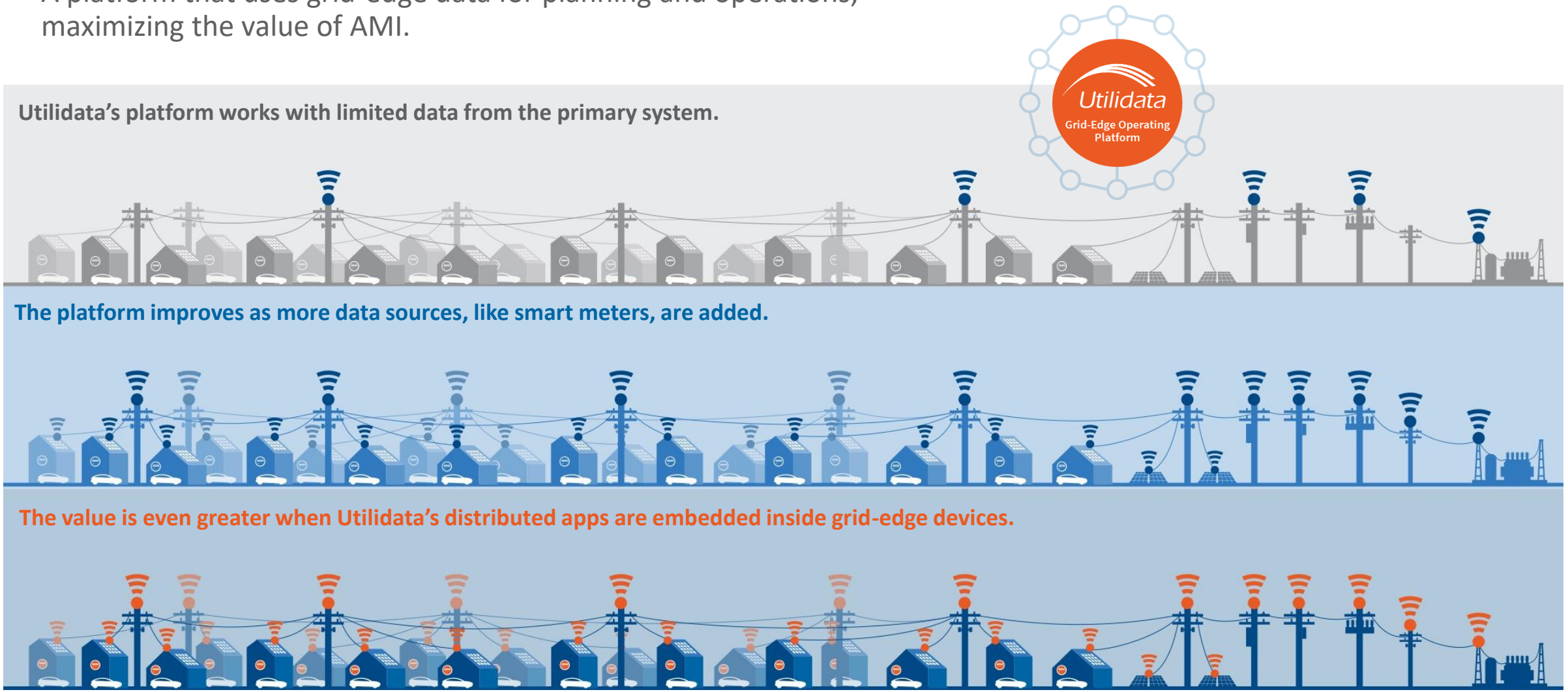
PROACTIVE REGULATION CAN UNLOCK BENEFITS

Regulators should:

- Require utilities submit a benefits implementation plan (BIP)
- Require software procured separately and in parallel with meters
- Continue regulatory oversight with evolving performance standards

UTILITIES NEED A GRID-EDGE OPERATING PLATFORM

A platform that uses grid-edge data for planning and operations, maximizing the value of AMI.



Thank you.

Jess Melanson
jmelanson@utilidata.com
973.202.5042

That was…

Jess Melanson

UTILIDATA

Up Next…

Josh Ryor

CONNECTICUT PUBLIC UTILITIES REGULATORY AUTHORITY (CT PURA)

Connecticut's Advanced Metering Docket within its Equitable Modern Grid Initiative

This presentation is for informational purposes only and is not meant to represent, advise, or instruct any participant hereto. The Authority is not providing legal advice or counsel to any of the participants to this presentation. Participants should obtain appropriate legal counsel for interpretation and application of any of the information contained in this presentation.

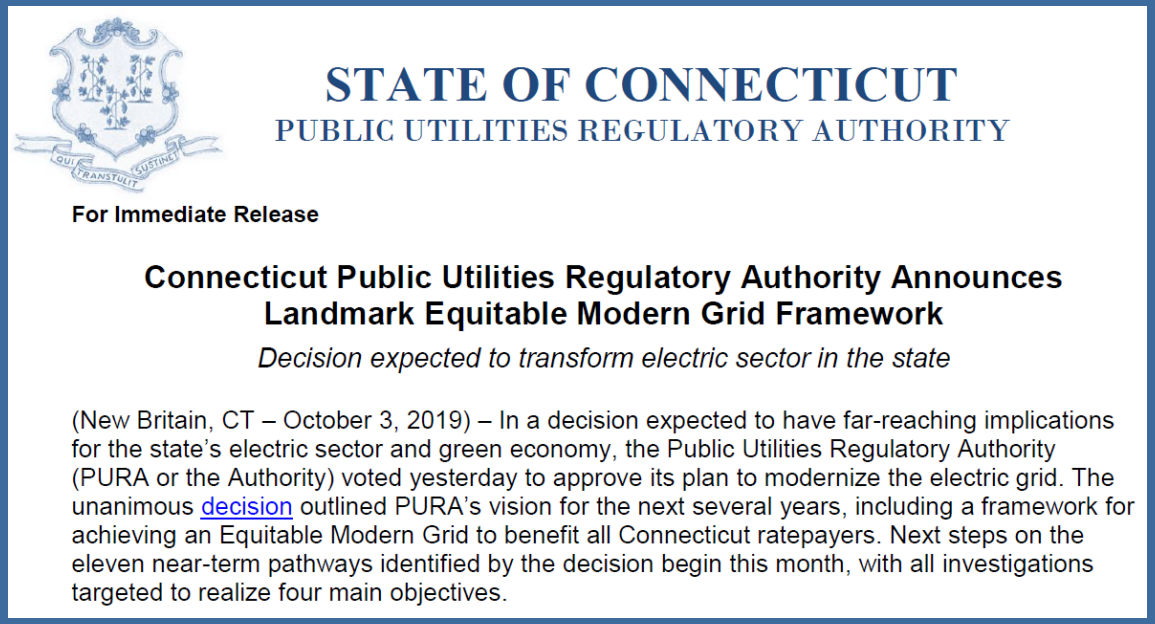
Joshua Ryor
Director of Utility Programs and Initiatives

Connecticut Public Utilities Regulatory Authority

Objectives

Equitable Modern Grid Framework

On October 2, 2019 PURA released its
Framework for an Equitable Modern Grid
in Docket No. 17-12-03



STATE OF CONNECTICUT
PUBLIC UTILITIES REGULATORY AUTHORITY

For Immediate Release

Connecticut Public Utilities Regulatory Authority Announces Landmark Equitable Modern Grid Framework

Decision expected to transform electric sector in the state

(New Britain, CT – October 3, 2019) – In a decision expected to have far-reaching implications for the state's electric sector and green economy, the Public Utilities Regulatory Authority (PURA or the Authority) voted yesterday to approve its plan to modernize the electric grid. The unanimous decision outlined PURA's vision for the next several years, including a framework for achieving an Equitable Modern Grid to benefit all Connecticut ratepayers. Next steps on the eleven near-term pathways identified by the decision begin this month, with all investigations targeted to realize four main objectives.

Objectives of the Framework

AMI Opportunity Statement

Advanced Metering Infrastructure

Opportunity Statement

- Smart meters can cost-effectively provide additional value to electric customers, *if implemented strategically*
- AMI can help facilitate greater deployment and integration of DERs, such as ZEVs, solar PV, electric storage, and heat pumps
- PURA will explore the cost-effectiveness of information technology systems, data management systems, DER management systems, and billing systems, among others

AMI Opportunity Statement (cont.)

Advanced Metering Infrastructure

Opportunity Statement

- Foster greater resilience, in light of increased extreme weather events (e.g., defined as “major storms” in CT)
- Nested outage example:
  - Town Fire / Police Station lost power during Tropical Storm Isaias
  - Outage submitted via town liaison process
  - Utility addressed what it believed was outage; didn’t realize it fixed most of outages, but not Fire Station specifically
  - Outage not rectified for a couple of additional days

Context

Regulatory Considerations

Potential Benefits

- Proposed cost/benefit analysis shows positive for ratepayers (Example: CT proposal, p. 12)
- 70%+ of residential households have smart meters (IEI)
- Enhance consumer experience and education
- Promote public policy goals (e.g., resilience + distributed grid)

Considerations

- $500+ million upfront investment for proposal referenced above
- Benefits accrue over time
- "Implementation results have increased review scrutiny" (AMI in Review, p. 14); ACEEE report on underutilized AMI (UtilityDive)
- Large states ruling against full-scale adoption (e.g., MA, VA)
- Customer communication issues w/ rollout (e.g., ME)

Process

Docket No. 17-12-03RE02 Process

Solutions Days

- Held two "Solutions Days" to better understand opportunities, considerations, and other state's experiences on 11/5/19 + 12/17/19

Request for AMI Business and Implementation Plans (5/6/20)

- A detailed business plan for smart meter and other AMI deployment
- A detailed implementation plan for leveraging the value created by the AMI technology, including complementary rate design
- A detailed customer engagement plan with three "stages", customer awareness, information, and engagement
- A detailed approach to addressing any data privacy + cybersecurity threats posed by deploying additional AMI
- A detailed deployment timeline.

Process Continued + Takeaways

Supplemental Information / Discovery

- Notice of Request for Supplemental Information on 11/13/20
- Authority issued interrogatories on 1/27/21

Next Steps

- Issuance of a "Straw Proposal" for stakeholder comment / input
- Traditional "process" around Straw Proposal (e.g., hearing(s), interrogatories, issuance of proposed final decision, etc.)

Takeaways to Date

- Purposeful process, stakeholder engagement, and detailed business and implementation plans are critical in current AMI environment; particularly important for public policy goals

Questions?

Please Contact:

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That was…

Josh Ryor

CONNECTICUT PUBLIC UTILITIES REGULATORY AUTHORITY (CT PURA)

Up Next…

Chris Villarreal

PLUGGED IN STRATEGIES

U.S. DEPARTMENT OF ENERGY

AMI in Review

Informing the Conversation

Advanced Grid Research

OFFICE OF ELECTRICITY
US DEPARTMENT OF ENERGY

Presentation for NARUC Financial Toolbox: AMI
March 2, 2021

AMI In Review
Informing the Conversation

Effort Overview

Objective: *Investigate how investments are being evaluated, determine if there was additional data or information that would be helpful, and explore the impact of new grid modernization technologies on the regulatory process*

Phased research study with two components

- Analysis of public records: Reviewed more than 100 AMI applications
- Convene stakeholders: Spoke with over 125 individuals
  from over 50 entities representing commissions, utilities, customer advocates and third parties

Aim of effort

- Provide insights and perspectives on how AMI applications are being developed and evaluated
- NOT seeking to offer an opinion on state actions or to advocate for or against any position

Two Resulting Reports

1. Main Report

- Captures the collective insights and perspectives of participants
- Includes helpful resources and questions

2. Compendium

- Reference materials of 600 filings from over 230 proceedings
- Includes filing document details and entity review notes

AMI In Review
Informing the Conversation

Contents at a Glance

Main Report Sections

- How are Utilities Approaching the Strategic Plan for AMI?
- What Analysis Factors into an AMI Justification?
- How are Benefits Discussed and Presented?
- How Expectations around Collaboration and Transparency are Changing?
- What is the Interaction between AMI and the Customer?
- Moving Forward

Additional Elements

- Helpful Resources
- Elements to Consider When Developing a Proposal
- Questions for Regulators or Advocates When Reviewing an AMI Investment

Compendium Includes

- Reference materials of 600 filings from over 230 proceedings
- Includes filing document details and entity review notes

AMI In Review
Informing the Conversation

Findings and Observations

- No standard regulatory template
- No consistent evaluation criteria
- Quantified benefits dominated by operational benefits
- Increased review scrutiny due to inconsistent implementation results
- Value is being left on the table
- Lack of a sufficient record hampers approval and increases frustration
- AMI is a big project that needs a multidisciplinary team with executive support
- CBA is a decision tool and is not necessarily a means in and of itself
- Pre-application stakeholder processes can be valuable but depends on approach
- AMI Investments funded through ARRA have had mixed results in informing regulatory proceedings

What Costs and Benefits Were Included	Count
AMI Benefits Only	39
AMI Costs Only	49
Net Benefits	27
Cost, Benefits, and Net Benefits Provided	25

*Of the 80 AMI applications that received a detailed review, when provided, quantified AMI-specific costs and benefits were recorded. Two applications provided net benefits without specific, categorized amounts.

Four major elements that commissions and parties are looking for

The vision

- A well-articulated vision and transparency about future investments can help alleviate concerns
- Raises questions for utilities about the right balance and how much to include

Customers at the forefront

- Make a direct connection to the customer – don't rely on the commission to infer or hear it during exploratory questions

Sufficient detail to support the record

- A proposal needs to stand on its own merits even if the commission is favorable to the technology

> **"A full grid modernization proposal – the big picture – can be scary."**
>
> – *Utility*

Commitments and accepting risk

- Perspective differs between the various parties
- Well-defined metrics and additional reporting can give commissions and advocates confidence and level-set expectations
- Underscored by the analysis – settlement agreements typically included provisions that bound the utility to specific commitments regarding timelines and AMI functionality

"What impact will AMI have on the customer experience?"

- AMI is an early indicator of how the review process is changing
- Customer-centric view of value that is not limited to what utility can provide
- Role of the commission is changing too requiring more knowledge of the technical details
- Commissions must have a record with sufficient detail on which it can issue a decision
- Collaboration is becoming an essential component
- Benefits are being replaced with capabilities

"A bad proposal for a good technology is still a bad proposal."

-Commission

Thank you!

Download the report and compendium:
https://smartgrid.gov/voices_of_experience.html

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Tanya Burns, tburns@ararablueenergy.com

Cameron Brooks, cbrooks@e9insight.com

That was…

Chris Villarreal

PLUGGED IN STRATEGIES

Q & A

Thank you!

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