

# Public Power Primer: Dealing With Changes Coming to Our Industry Through IRP

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# American Public Power Association— the Basics

- We are the national service organization (trade association) for the U.S.'s 2,000 electric utilities owned by units of state/local government
- Public power serves 49 million people in 49 states and 5 territories
- We are located in Crystal City (Arlington), VA (we moved to Crystal City before it was cool!); located in DC area due to proximity to federal government

# The American Public Power Association: Our Purpose and Vision

- **Purpose**

- Partner with members to promote public power, helping community-owned utilities deliver superior services through joint advocacy, education, and collaboration.

- **Vision**

- Shape the future of public power to drive a new era of community-owned electric service.

# APPA Leadership and Staff

- Board sets APPA policy direction; composed of Board members from all regions of the US and its territories
- 2019-2020 Chair will be Decosta Jenkins, CEO of Nashville Electric Service; Jim Ferrell, Jackson Energy Authority (TN), and Roger Gale, Columbus Light and Water (MS), are also on the Board
- APPA has 68 staffers doing everything from lobbying to education to coordinating mutual aid after storms; heading straight from here to our National Conference in Austin, TX, where we will have 1300 attendees

# PUBLIC POWER =



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**LOCAL** CONTROL

**LOW** RATES

**HIGH** RELIABILITY

**AVERAGE HOME ELECTRICITY PRICES IN THE U.S.**



**Community  
owned utility**



**Privately  
owned utility**

**#PublicPower  
=  
Affordable  
Power**

AVERAGE OUTAGE TIME FOR ELECTRICITY CUSTOMERS\*



**55**  
minutes

PUBLIC POWER UTILITIES



**133**  
minutes

PRIVATE UTILITIES



**163**  
minutes

ELECTRIC COOPERATIVES

\* WITH NO MAJOR EVENTS

# #PublicPower gives back

Public  
power utilities  
pay  
**33%**  
more...

...back  
to the community  
than private utilities  
— through taxes,  
fees, and special  
services





# WeAreCommunityPowered.org

## #CommunityPowered



# Change—The New Normal

- Across the country, we see rapid changes in the electric utility industry:
  - New technologies
  - New competitors
  - New ways of living
  - New customer choices and expectations
- **“Business as usual” will not be enough in this new environment; we need to anticipate what customer needs/wants will be and move first to supply them**
  - *“I skate to where the puck is going to be, not to where it has been.” Wayne Gretzky*

# Electric Utility Industry Outlook—

- Lack of clarity in federal energy policies—some states/cities stepping into the breach with their own climate goals
- More use of distributed generation (DG) and distributed energy resources (DERs) at the distribution level
- Expanded use of new distribution technologies: storage, Electric Vehicles (EVs), smart meters/grid
- Increasing industry complexity—new players (can be partners or competitors)
- Flat (or even declining) load growth in most regions due to increased energy efficiency (EE) and demand response (DR)—but EV & electrification push could offset?

# Electricity Utility Industry Outlook (cont'd)

- Customer expectations are increasing; lower tolerance for outages
- Need for new investment to make grid smarter, more reliable
- Cyber/physical security concerns must be addressed or we will face the consequences
- Workforce turnover is an issue as baby boomers age out
- Low level of knowledge by the public and many policy makers of how we do what we do—can lead to unrealistic expectations

# What Commercial and Industrial Customers Will Increasingly Want

- Industrial and commercial customers increasingly want green/sustainable energy to meet their corporate goals
- Following the lead of large commercial customers such as Apple, Google, Facebook, Walmart, Starbucks
- More of them are installing solar or natural gas generation/storage at their facilities to ensure reliability
- Also implementing energy efficiency measures at their facilities to reduce overall usage
- Public power utilities need to be partners with our customers in these efforts

# What Residential Customers Will Increasingly Want

- Increasingly, retail customers will want to:
  - Use technology to control electric usage, reduce bills
  - Tell Siri or Alexa to pay their electric bill
  - Invest in their own onsite power and storage facilities, so they never experience an outage
  - Sell any excess power they might produce
- What makes economic sense for individual retail customers might not add up to a sustainable distribution system for all in the community, unless someone manages this to maximize the benefits to all customers

# The Challenge for Public Power Utilities

- Public power utilities have to up our game — we need anticipate and manage these changes, provide new retail-level services, and partner as needed with third parties with the necessary products and skills to do this—leveraging technology to make it possible
- Will require new investments and new service offerings, but will in long run reduce costs and increase customer satisfaction if done right

# You Must Decide How to Engage

Public power utilities must decide when/how to invest in new technologies and revise rates, services and operations to:

- Offer retail customers options such as green power, DG, DR (including storage), and EE
- Modernize utility operations; add new loads (EV charging, for example)
- Make sure interests of **all** customers are protected when doing this
- Different public power utilities will likely move at different rates—must reflect the values of our communities



# Job One: Figure Out Where the Utility Needs To Go...

- What is important to the public power utility's customers and the community?
  - Affordability of electric service?
  - Reliability of electric service?
  - Environmental sustainability/carbon reduction?
- When needs are competing, how can they be reconciled?
- There is no free lunch; tradeoffs may have to be made...

# Integrated Resource Planning (IRP): A Way to Plot a Future Course

- Public power utilities have the “obligation to serve” all of the customers in their communities; they take care of all “in front of the meter” functions needed to provide electric service—generation, transmission and distribution
- To help guide their decision-making on how best to provide that service, they do “IRP”—periodic planning processes with community input to determine community needs, future electric demands, costs, optimal resource portfolios
- Often retain outside expert consultants to make sure process is rigorous and results are meaningful

# Common Features of Public Power IRPs

- Must balance reliability of service, costs, and environmental sustainability; different communities place different emphasis on these three items; often use customer advisory panels, public meetings to get input
- Undertaken periodically (e.g., every five years), possibly with interim updates
- Look out into the future, e.g., then to twenty years, although with recognition that the further out you go, the more uncertainty there is
- Run a variety of “scenarios” (outlook for the area, different policy goals) and “portfolios” (different resource options)

# Examples of Scenarios

- Salt River Project(SRP), Phoenix AZ
  - Breakthrough (high tech, CO2 limits), Roller Coaster (swings in economy and politics), Desert Contraction (drought, high temps)
- Los Angeles Department of Water and Power(LADWP)
  - Reducing GHG a key theme; how much from electric power v. from electrification of transport?

# Examples of Portfolio Variables

- SRP: Use of coal, level of energy efficiency, reliance on natural gas, level of renewables/batteries, continuation of nuclear, hydro
- LADWP: Level of renewable portfolio standard (RPS), how much local solar, storage, energy efficiency, “dependable capacity”
- Colorado Springs Utilities: looked at retiring existing coal plants, adding small modular nuclear reactors, new coal with carbon capture and storage

# IRP Outcomes

- Provide policy guidance to utility staff on the values and priorities of the community
- Guidelines on how to proceed with resource decisions
  - What kinds of generation and what mix?
  - What investments should be made to support them?
  - How much to develop and depend on demand-side resources (energy efficiency, demand response, customer-owned generation, etc.) as opposed to supply side resources?

# Some Random Observations Based on IRP Reviews Done for this Meeting

- Communities differ widely on how much emphasis they place on greenhouse gas (GHG) reductions—where it is paramount, must then consider how much of the reduction comes from the electric power sector v. other sectors (transport, housing, etc.)
- Higher costs due to reducing GHG can be offset by new loads (EVs, electric heating), but if electric rates rise too far, too fast, it will dampen interest in electrification—must strike a balance

# A Few More Observations

- Portfolio diversity (diversity of types of generation and of supply side and demand side resources) has value
- Energy efficiency measures may make sense for customer relations even if they are not lowest cost option
- Pilot projects for new programs (EV charging, smart thermostats) can provide useful data for the next IRP
- While new small modular reactors (SMRs) are mentioned in some IRPs, did not see any utilities studying option for nuclear power from new “traditional” nuclear units that they are not already committed to purchasing



# If You Don't Know Where You Are Going, Any Road Will Take You There....

- But that is not a smart way to go for an electric utility with a service obligation to its customers, especially one owned by those customers!
- First, understand the community's values, preferences and priorities
- Then construct an IRP that honors them while balancing
  - Reliability
  - Affordability
  - Environmental responsibility

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**PUBLIC**  
**POWER**<sup>TM</sup>  
**ASSOCIATION**

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