

Fletch's Notes on the 2021 APPA Conference in Orlando

Jason Fults and I attended the 2021 American Public Power Assn convention in Orlando June 20-June 23. During this time, I found eight topics that appeared to be of significance to the work of the UAB:

1. Strategic Planning
2. Renewables
3. Storage
4. Financials
5. Cyber Security
6. Board Effectiveness
7. Emergency Response
8. Environmental Degradation

General Info

- The average cost of residential power from public power is 11.5¢/kWh, while the average cost from an Investor-Owned Utility (IOU) is 13.2¢/kWh.
- Municipal-owned utilities account for about 15.6 pct of market share in the USA. There are 2000 municipal utilities serving 49 million customers.
- Turbines spinning at 3,600 RPM generate power at 60 Hz.
- Coal-fired generation today accounts for 28% of all electric power. Fracking for natural gas has expanded gas availability by a factor of 10.
- The average home is wired for 4-6 kW
- $MW = 1.732 \times \text{voltage} \times \text{amps}$
- There are still some transformers in use that have PCBs
- Tesla sells 4-5 kW batteries for home use for about \$1500/kW.
- Typically, the General Manager of a municipal utility is paid less than the City Manager.
- Historically, municipal utility managers were concerned with (1) reliability; (2) financial health; and (3) customer service. Today these concerns have expanded to include: (4) environmental issues and CO₂; (5) renewable; (6) competition; and (7) strategic planning. Competition comes from hedge funds, that are making a play to gobble up munis.

- On average, munis transfer back to the local government a return of 5.6% as PILOT, Payments in Lieu of Taxes. (GFT in Gainesville is far higher)
- Nationwide, participation in civic organizations is declining.

1. Strategic Planning

A good public power board must focus on strategic planning and not get bogged down in administrivia. Focus on the **ends**, not the **means**. *Mission vs Vision*: *Mission* provides the *inspiration*; *vision* provides the *dream*. Boards must stay out of the weeds. I shook hands with the woman who is the president of TEA.

COMMENT – Several speakers stressed that for a board to be effective, it needs to stay focused on strategic planning. The UAB has given considerable attention to the GRU IRP and this is what the speakers stress should be done

2. Renewables

The APPA staff member who spoke on Federal legislation said that the goal of the Biden Administration to have 100 percent renewable by 2035 is “unobtainable”, She mentioned that there are a number of bills moving through Congress that would provide grants and tax credits and loan guarantees to utilities for implementation of renewable, but these are far from enactment at this point. This includes the CLEAN Act. There is a bill to provide 12 billion for electric vehicles (EVs) and the GREEN Act to provide \$7000 per EV, up to 200,000 cars..And a bill to provide for construction of high-speed internet broadband networks which GRU.com might be eligible for if it is enacted.

- In 2018, residential solar cost about \$1848/kW, about \$9000 per single-family home, plus battery back-up at \$1239 x 5 = \$6900 per home.
- Solar today represents 9.6% of all power sources, expanding from 20 GW in 2010 to 24.5 GW today.
- Wind represents 10%

A spokesman for the company National Renewables spoke. This company provides consulting on implementation of renewable technologies: solar/wind/battery. He said that biomass today accounts for 3 GW.

COMMENT: The average coal-fired plant lasts 50 years; after that time maintenance costs are too high to be economical. Five of GRU’s generating stations are more than 40 years old. UAB could ask GRU for a list of bond dates of defeasance, indicating when existing bonds will be retired and new bonding capability could be used for renewable generation.

3. Storage

MORE LATER

4. Financials

Reserve margins figure prominently in the ratings of bond agencies. Typically, reserve margins vary from 3 to 6 months.

5. Cyber Security

Following the Colonial Pipeline ransomware event, and SolarWind and Oldsmar Water Utility in Florida, cyber security emerged as a predominant theme at the conference. There were several vendors at the conference that can come to a utility and conduct an audit to determine how well prepared the utility is to defend against and respond to a cyber security breach. Russia shut down half of the Ukraine IT network. A cyber security plan details responsibilities to: identify the threat, respond to the threat, recover from the threat. Sensors that detect a threat are sold, and utilities periodically conduct drills that simulate response to a threat. Some utilities set up a “honeypot” to lure intruders and get caught like fly-paper.

COMMENT: Is GRU’s cyber security plan strong enough? Does GRU hire ethical hacker firms to try to break in to detect weaknesses? UAB could ask GRU to provide a briefing on cyber security preparedness and seek to determine if additional steps need to be taken.

6. Board Effectiveness

Boards need by-laws. Boards need diversity: ethnic diversity, sexual diversity, income diversity, racial diversity. A Mentor should be assigned to assist each new member of the Board. A good board will conduct a self-assessment and have an off-site planning retreat day periodically.

7. Emergency Response

- Reserve margins vary among utilities, but on average they vary from 5 – 10%, even 12%.
- Reliability Indexes = SAFI, SAIDI, CAIDI
- Experience finds that customers tolerate 3 outages a year of 10 hours or greater.

In 2020 we had the Texas Polar Vortex, fires in California, tornadoes, hurricanes, a pandemic, etc. etc. etc. The munis in Texas had to suddenly shed 20,000 MW in January. The Austin muni did, and kept hospitals supplied with electric power the entire time.

COMMENT: During the Polar Vortex in Texas when natural gas was unavailable, we know that GRU stayed up nicely by relying on coal, liquid fuels and purchased power. But what happens in the event of an emergency such as a tornado, hurricane, terrorism or a fire if DH1 or DH2 is taken down? Does GRU need to focus even more attention on responding to emergencies? UAB

could ask GRU to provide a detailed emergency response plan to determine if more needs to be done.

8. Environmental Concerns

Last day o

Decarbonization

Global warming

No mention of sequestration