

American Public Power Association (APPA) National Conference Summary

Conference in Boston, MA; 28 Jun – 1 Jul 2026 Report by: Robert Gibson, BPU Chair

Overview

This was a large conference, with around 1600 attendees. It had a conventional structure with four plenary sessions, around forty smaller breakout sessions, and a trade show. With typically 7-8 parallel breakout sessions in each of five time periods, one person could capture only a small portion of the information exchanged. Below are the some take-aways interesting to this attendee.

Most slides are available on-line to attendees.

Supply

Fracking and horizontal drilling started in ~2008. Natural gas prices have been declining since.

Natural gas is in oversupply in the US. About 20% of production is exported (as LNG).

Natural gas is very cheap, thus presently favorable for electric production. Electricity prices are thus sensitive to gas prices.

Electricity demand in the US was essentially flat until ~2015. AI then started to have an impact.

Electricity demand is now growing at about 3%/yr., a trend expected to continue for at least the next decade. Data centers are the primary driver. Electrification has not yet had major impact.

Solar may be competitive without Investment Tax Credits when they expire in 2030.

Renewables now comprise ~26% of national electric supply. Gas has grown to 40% due to cheap fracked gas. Coal has fallen to ~15%. Nuclear remains roughly constant at ~17%.

A resurgence of nuclear may be approaching. It is the only technology with bipartisan political support. Large plants appear to be favored politically more than SMRs.

The claim was made in one talk that seismic issues had been solved for advanced geothermal. It was asserted that disposal of the fracking fluid was the cause and that different disposal techniques solve the seismic problem.

Transmission

Interconnection (transmission) agreement permitting times are rapidly increasing. Typical was 22 months in 2008, 55 months in 2024. Roughly 3.3 GW of capacity is presently awaiting interconnection. FERC is trying to shorten permitting time.

Railway rights-of-way may be an untapped resource for siting transmission lines – at least in the eastern part of the country where they are common.

Underground HVDC transmission is technically feasible (HVAC is not). It is considerably more expensive than towered transmission. It would be a natural match for rail R-O-Ws.

Transmission lines have a load rating based on worst case (generally hottest day) conditions. They can usually carry a lot more, perhaps as much as 2X on cold winter days.

Storage

Lithium-Iron-Phosphate (LiFePO₄ or LFP) batteries are increasingly popular for their long life and resistance (immunity?) to thermal runaway. Energy density is slightly lower than other Li types. They are more favorable for utility applications and less for mobile (i.e., EV) where weight is a factor.

Iron-air batteries are promising for long-term (~100 hour) utility-scale storage. Materials are cheap and plentiful. Their round-trip electrical efficiency is relatively low (50-60%). They are heavy and bulky, thus only suitable for utility-scale.

The many other potential storage technologies were reviewed, but none appeared ready for wide implementation.

Residential Demand-side Management

Several New England public power entities are making tentative steps in this direction.

Most entities exploring this do not yet have AMI or TOU, but intend to.

Property owners don't volunteer for demand-side management without incentives (surprise?), but little specificity was offered in how they were structured.

Even with small penetrations, peak shaving of several percent was claimed.

Communicating Rate Increases

Experience and recommendations were very similar to what we already do.

People do understand inflation. Small, annual inflationary increases are generally better understood and tolerated than occasional large jumps.

Miscellaneous

Various data on California mid-day electric utility demand were presented. Some suggested it was approaching zero because of all the distributed PV. Other data did not go that far, but there is clearly a major effect.

One talk asserted that ~60% of solar installations in California have storage (of some form) attached. That seems high and was not confirmed. Some reduction in evening utility demand may be appearing.

All residential rates mentioned were substantially higher than ours, sometimes 2-3X higher.

Electrical demand in New England may peak in winter by mid-2030s with heat pumps and EVs.

Trade Show

The most interesting thing I saw was an on-demand water heater with internal thermal storage in a solid-liquid phase change (similar to what is used in cold packs for coolers or heat pack hand warmers). Energy (electrical or hydronic) can be input over long and off-peak time periods, avoiding the huge peak demands of traditional on-demand systems. It is not a mature product, but an example of a potential technical solution to electrification needs.