MORE THAN SMART

Pacific Coast Inter-Staff Collaboration Summit

May 24-25, 2017
Portland, Oregon

Meeting Summary

Overview

On May 24-25, 2017 over 35 staff members from the California, Nevada, Oregon and Washington Utility Commissions met in Portland, Oregon. As detailed in the appended program, the Summit was convened by staff to discuss how they could collaboratively support the *"Western Public Utility Commissions' Joint Action Framework on Climate Change," (Framework)* an inter-state memorandum of understanding pledging cooperation to reduce greenhouse gas pollution, improve electricity reliability, and obtain cost benefits for ratepayers. The following report recaps the event and identifies target outcomes and next steps.

Full materials for the Summit are posted at http://morethansmart.org/engage/pcs/.

Day 1:

Welcome and Introductions, including:

- Julie Peacock (OPUC): reinforced the commitment of each state to the MOU and emphasized the importance of staff connecting across state lines.
- Ruchi Sudhir (Office of Governor, Oregon): provided an overview of Oregon priorities and endorsement of the Summit.
- Ben Kujala (NWPC): provided an overview of the Northwest Power Conservation Council (NPCC), its organizational structure, history, funding, and mission; introduced the Northwest Power Plan, which provides, guidance to the Bonnevile Power Authority, regional forecasts of demand and natural gas prices, and a full consideration of environmental impacts, including a social cost of carbon factor.

Brief Overview of OR/WA/CA Joint Action Framework on Climate Change:

- Brad Cebulko (UTC):
  - Introduced the Framework for a regional cooperation to address global warming.
  - Explained the Framework was initiated by Commissioner Dave Danner (UTC), building on an MOU from 10 years ago.
  - Explained the Principles of the Framework are the same as those underpinning the 2006 version. The Action Items of the Framework have been updated.
  - Expressed the shared Intent of the Commissions to continue meeting to implement the Action Items. Gave the example of distribution planning, a big part of UTC Integrated Resource Planning process and a desire to connect CA and WA staffs. Same for PURPA.
- Percy Lucban (NV): expressed same interest as UTC in distribution planning.

Orientation to each state:

Presentations from each state introducing their respective PUC, regulated utilities, priorities & state DER markets.

- Elaine Prause (OPUC) and Jason Salmi-Klotz explained:
  - Most of OPUC's activity is on the energy side, regulating Portland General Electric and PacifiCorp Utilities.
  - IOUs are heavily reliant on fossil fuels whereas POUs typically get the hydro.
  - Overview of resource mix: 22% coal; 6% hydro; 11% wind; remainder is mostly natural gas, including Combined Heat and Power:
    - Utilities offer voluntary renewable energy programs, providing Renewable Energy Credits for customers who want more; participation is high. In addition, large industrial customers are demanding greater shares from renewables;
    - Recent legislation (SB 1547) codified prohibition on coal generation by 2030 and extended the RPS to 50% by 2040, including changes to banking rules; utilities planning to build early to take advantage of PTC;
    - A community solar program will be rolled out this year;
    - QF activity under PURPA has skyrocketed; 800-900 MW of new solar.
  - GHG goals (aspirational, non-binding): 10% below 1990 levels by 2020; 75% by 2050;
    - Oregon is not on track to reach these goals;
    - transportation sector is the largest contributor — looking for ways to connect to California's low carbon fuel standard;
    - climate work spilling into our main ratemaking proceedings.
  - Public purpose charge funds the Energy Trust of Oregon, plus programs supporting Low Income customers and Distributed Generation.
  - Some utilities are participating in CAISO's Energy Imbalance Market; negative pricing events are increasing, raising new questions about the merits of Regionalization.
  - Oregon is thinking anew about its distribution system as a resource; so far DG penetration is < 1%; EE and gas efficiency are about 1%/year.
  - PGE has AMI; Pacificorp, still a couple years away; Some SCADA at substations.
  - SB 2193: storage mandate, allowing utilities to procure up to 1% (~16 MW); requiring storage proposals by January for 5 MWh/utility; included a system evaluation through the grid (All is in OPUC docket UM 1751).
  - The Integrated Resource Planning (IRP) brings all this together.
- Ed Randolph (CPUC):
  - CA has much to learn from other commissions and staff-staff communications are ideal; Energy Division staff is 167 people.
  - The growth of solar, resulting duck curve and negative pricing are a prominent narrative in CA.
  - State is 70% IOU by load; 30% POU.

    - Generation mix = 27% Renewables in 2017; RPS is 50% by 2030; Coal = 6% (LADWP); 24% natural gas.
    - Integrated Resource Planning is a huge focus for California; the effort aims to push back on technology specific mandates toward a technology neutral market for GHG emission reductions and reliability.
    - Utilities are largely divested from supply, but own transmission and distribution and provide the lion's share of retail service (though the share is rapidly departing for CCAs + solar); transmission system operated by California Independent System Operator who runs wholesale markets for energy and ancillary services.
    - Utilities have enough capacity for everything for at least 5 years (140% of needed capacity), except a few SoCal pockets, and are already beyond their RPS targets.
- Deborah Reynolds (UTC):
    - 16 people in energy division; 160 total Commission staff.
    - BPAs mix informs everything; state = 60% hydro, but IOUs are only 28%; 45% of revenue, but only 35% of sales are regulated by UTC; in short, role of surrounding MUNIs/Coops creates unique challenges:
        - The POUs offer less expensive service, a spread which grows when UTC takes on new costs by regulatory order; as a result, the state relies more heavily on hard to reach legislation.
    - Supply mix is 15% renewables when hydro is excluded.
    - IOUs are delivering 1.3% load through EE.
    - Emerging issues:
        - Allow utilities a return on investment in EV supply; draft policy statement out, using a "portfolio approach" to provide broad public benefit (e.g., low income customers); statement is non-binding, but we get some mileage;
        - Consumer protection considering technology changes;
        - IOU business model — would like to have discussions on this.
- Percy Lucban (PUCN):
    - 6-7 energy staff; 90 total; Commissioners are appointed; Chair (Paul Thompson) recently left the Commission.
    - Resource mix: 70-73% natural gas; 14-27% renewables (mostly solar); 7-10% coal, rapidly declining; 3-6% hydro.
    - NV Energy has deployed 1.25 million smart meters.
    - Hot topics:
        - November ballot measure passed to deregulate retail service; implementation is a big focus;
        - Rooftop solar: NEM legislation passed to the benefit of customers (95% of retail rate for first tranche, then ramping down for additional tranches)
        - Electric Vehicle infrastructure: effort to electrify highways;
        - Storage: Nevada watching closely what CA is doing;
        - Volt-var optimization: Las Vegas pilot underway; 5 substations, roughly 40 feeders; focus is conservation;

Overview of Major Trends Driving Industry Change:

- Lorenzo Kristov (CAISO):
  - Begin with objectives: just because it can be done, doesn't mean it should be. Reliable, safe, affordable + reduce GHG emissions, integrate renewables, and be resilient.
  - Themes:
    - Industry is increasingly bottoms up: before FERC led top down "open access" change; now customers meeting their own needs and the grid is becoming the residual supply, not primary;
    - Resilience is local: Microgrids don't seem cost-effective, but what if we anticipate a much more volatile political and climatic future?;
      - Individual > utility > regulator — this traditional chain misses communities, which lie in between and where impacts may be acute and opportunity for progress plenty.
    - Outcomes, not applications: climate change and industry shifts demand we keep an eye on the ends, not the means:
      - In transforming transportation, have we succeeded if we increase miles driven by EVs?;
      - In distributed generation, NEM contributes to the duck curve — how do we address the ducklings below the substation?
  - Thoughtful approaches to integrating DER can connect the themes. By rethinking the design of the grid (grid architecture) such opportunities can be realized.
- Mike Florio (MTS):
  - California has a basket of climate and technology policies. The DER Action Plan adopted last year tries to make sense of them in context, providing a blueprint for the path forward.
  - The duck curve experience has raised our sensitivity to time of use and production. The IOUs are currently implementing default Time Of Use rates for all residential customers – a huge lift for California.
  - The Distribution Resource Plan is another huge challenge; the theme there is location, location, location. Where you locate a DER makes a huge difference in how the grid operates.
  - In California, DERs have been the dessert for decades. Now they are becoming the main course. Do we prioritize "customers lead or system need?" How to harmonize? Whereas in the past supply followed load, the future may be the opposite: load follows supply.
  - Complexity eased by new capabilities in communications and computing, but algorithms still need work.

Introduction to the US DOE DSPx Project

- Joe Paladino (DOE):
  - Before DER, there was AMI and EE. DOE still has abundant data resources on those topics available to support states.

- Challenge: what is the appropriate investment strategy for enabling DER integration and utilization? Implications for planning, operations, and market design.
- DOE DSPx materials are available at http://doe-dspx.org/.
- Presentation slides provide a detailed overview at http://morethansmart.org/engage/pcs/.

Distribution Resource Plan Proceeding Examples from California

- Gabe Petlin and Simon Baker (CPUC):
  - Overview of California's Distribution Resource Planning (DRP) and Integrated Distributed Energy Resource Proceedings.
  - CPUC DRP materials are available online at http://www.cpuc.ca.gov/General.aspx?id=5071. More Than Smart's associated working group materials on the development of an Integration Capacity Analysis and Locational Net Benefit Analysis is available at http://drpwg.org/sample-page/drp/.
  - Presentation slides provide a detailed overview at http://morethansmart.org/engage/pcs/.

Technology in Focus Panel I: Electric Vehicle

This panel focused on challenges and opportunities of electric vehicle deployment, including reducing carbon emissions, managed grid impacts, customer benefits and associated regulatory questions. The panel was moderated by Lauren McCloy (UTC) and included Anne Smart (Chargepoint), Brian Prusnek (Sempra), and Jeff Allen (Forth).

- The moderator and panelists discussed the following topics:
  - Ongoing activities related to EVs in all four states: utility pilots and legislation on the utility's role in infrastructure.
  - Creative approaches to marketing and outreach.
  - Rate design effecting adoption and charging behavior.
- Themes emerging from the discussion:
  - Tension between encouraging maximum EV adoptions vs. encouraging grid-friendly charging behavior: what should the regulator's priority be?
  - What is the best role for utilities to play and how they may vary by market.
  - An emphasis on heavy-duty may allow more emissions reductions, more quickly.
  - Can variable rates and demand charges be organized to support EV adoption while encouraging grid-friendly charging and equitable cost recovery?

Technology in Focus Panel II: Energy Storage

This panel focused on aggregating DER services and defining their value both with and without specific DER market. The panel was moderated by Rebecca O'Neil (PNNL) and included Kiran Kumaraswamy (AES Storage), Manal Yamout (Advanced Microgrid Solutions), Walker Wright (Green Charge Networks), and Brian Spak (Portland General Electric).

- The moderator and panelists discussed the following topics.

  - The benefits of storage and ongoing applications throughout the world.
  - The need for storage technologies to have the opportunity to compete to meet the capacity needs of utilities.
  - The concept of Multi-use Applications, whereby the storage is eligible to serve the needs of the customer, distribution operator, and wholesale operator.
  - The challenge of educating buyers and regulators about the capabilities of storage and the implied impact on transaction costs.

- Themes which emerged include:
  - The recent dominance of lithium ion batteries relative to other forms of storage. Will it continue?
  - How can permitting processes for storage be standardized to reduce delays and soft costs?
  - Behind the meter applications are more valuable to customers with demand charges. What are the relative tradeoffs? Is this value proposition leading to greater behind the meter applications relative to grid side?

Day 2:

Staff Input to Recap of Day 1

- Jason Salmi-Klotz (OPUC) + Ed Randolph (CPUC): how can the states determine which topics are practical and beneficial for collaboration?
- Percy Lucban (NPUC): Nevada would like more opportunities to expand on the topics, especially DOE's DSPx resource and California's DRP proceeding.
- Brad Cebulko (UTC): Still not clear how EV infrastructure planning is occurring; could be very inefficient — neither Commissions nor utilities are city planners. What's our role?
  - Paul Douglas (CPUC), Deborah Reynolds (UTC): Agree
- Deborah: Discussion about demand charges piqued my interest: bad for EVs, good for storage. Collaboration on rate design may be ripe for collaboration:
  - Max St. Brown (OPUC) and Simon Baker (CPUC): Agree. Topic possibly broader than just EV adoption.
- Gabe Petlin (CPUC): Joint commission research on consumer behavior in EV adoption and charging.
- ***Takeaway: Explore collaboration on EV adoption, rate design, and infrastructure planning***

  Jason Eisdorfer (OPUC)
  - This is a long time coming; needs to be ongoing.
  - Should be noted there are big differences between states (e.g., EV pilots).
  - Need to analyze what all three states can do together efficiently.
- Lauren McCloy (UTC): opportunity to collaborate on consumer protection issues (e.g., third party solar) and data privacy (e.g., opt in v. opt out data access).

Staff Roundtable Sessions

Staff discussed three topics in small groups. The topics included: reducing carbon emissions, integrated resource planning, and energy efficiency. In the "Outcomes" Section below, this report highlights the prioritized outcomes of those sessions. In addition, a full list of topics discussed is appended.

Breakout Section Outcomes:

- Reducing Carbon Emissions:
    1. What is the future role of fuel-switching/electrification? *Complete level-setting to understand different approaches between states and collaborate on*. considering effective metrics to maximize public benefit through electrification.
    2. *Explore collaboration on EV adoption, rate design, and infrastructure planning*.
- Integrated Resource Planning:
    3. How are assumptions made by each state about the other states creating mutual market risk? How could sharing assumptions create mutual opportunity? For example, in ensuring long term resource adequacy, California assumes the availability of imports from the Northwest. Are those assumptions correct? *Explore approaches take by each state to planning and exchange information to minimize market risk and maximize mutual opportunity*.
    4. *Explore the development of a shared Distributed Energy Resource modeling methodology based on the California supply curves.*
- Energy Efficiency:
    5. How can energy efficiency serve as a non-wires alternative? *Recognizing grid planning practices differ between the states, explore guidelines through which Commissions could encourage energy efficiency's consideration in planning*.
    6. *Develop a shared approach to market transformation, including the exchange of data related to energy efficiency measure maturity*.

Overarching questions:

- how will staff work together toward these outcomes?
- how to mix near- and long-term phasing of outcomes?

Stakeholder engagement successes/challenges by state

- Brad Cebulko (UTC): Lots of new stakeholders in our processes; citizen groups with legitimate concerns but who are not familiar with out jurisdiction, process, and culture. What are best practices in supporting their needs?
- Jason Eisdorfer (OPUC): Same challenge in Oregon, including new vendors who are not accustomed to practicing before the Commission.
- Nick Chaset (CPUC): Similar challenges in California. Desire to identify what constitutes success for new participants. What actual outcomes are desired?

- Percy Lucban (NPUC): Similar challenges.
- Brainstorm revealed the following solutions used by different Commissions.
    - OPUC: Info session on IRP for new participants;
    - CPUC: "Public Advisor," a CPUC staff member, introduces new participants to the Commission's decision-making process; sometimes assigns a specific representative to high-profile proceedings; provides user-friendly info guide; public participation hearings; intervenor compensation.
    - CPUC: With regards to vendors seeking engagement with utilities, the More Than Smart model of stakeholder engagement has been successful.
    - UTC: we have advisory groups on IRP and EE program planning and implementation; working well; challenge is staffing them.

Next Steps

- Staff leads will share the outcome of the Summit with their respective Commissioners, consult their respective staffs, and guide priority topics for future collaboration.
- Consider what outreach this collaboration warrants beyond participants, such that the benefits of inter-state collaboration are more widely valued.

Appendix I

Complete Potential "Next Steps" Emerging from Breakout Sessions

Priority "Next Steps" are represented in the body of this report as outcomes of the Summit. Potential issues which did not receive priority status are memorialized here.

Carbon Emission Reductions

- Identify regulatory tools we can share as "best practices"
- Explore long term resource flexibility coordination, including contracting with resources.
- Explore performance based regulations and utility incentives
- *Explore collaboration on EV adoption, rate design, and infrastructure planning*.
- Future role of natural gas utilities and impacts of electrification
- Standardize values of emissions intensity of unspecified power
- California shares its marginal abatement curve
- Evaluating cross-sectional trade-offs for GHG reduction opportunities and options, including developing metrics and and decision-making framework
- Research trends in customer adoption of EVs
- Coordinate on port and long haul electrification coordination

Integrated Resource Planning

- Explore the development of a shared Distributed Energy Resource modeling methodology based on the California supply curves.
- Assess climate change impacts on load and supply, including seasonality.
- Establish a common data set related to regional power supply.
- Explore approaches take by each state to planning and exchange information to minimize market risk and maximize mutual opportunity.

Energy Efficiency

- Discuss application of cost-effectivness testing in evaluating EE measures and programs
- Create a video introducing the value of energy efficiency
- Compare methods for aligning risk of non-performance and methods for incorporating risk into performance based contracting
- Develop a shared approach to market transformation, including the exchange of data related to energy efficiency measure maturity.
  Create a platform for sharing evaluation studies and results
- Explore a pool of funds to support emerging technologies on a competitive basis
- Explore guidelines through which Commissions could encourage energy efficiency's consideration in planning.
- Explore guidelines for EE to serve as a non-wires alternative
- Explore regulations allowing access to customer energy usage data to the benefit of energy efficiency market development, balancing privacy concerns.