



SHARING POWER: A Workshop to Promote Deeper Understanding of the Pacific States' Electrical System

February 5-6, 2017

Portland, Oregon

Northwest Power and Conservation Council, 851 SW 6th Avenue, Suite 1100

WORKSHOP OVERVIEW

On February 5-6, Gridworks hosted a two-day workshop in Portland as part of the [Pacific States Sharing Power Initiative](#). The purpose of the workshop was to promote a greater understanding between Pacific Northwest (PNW) representatives and California representatives of their respective electrical systems. The workshop focused on identifying areas of further investigation where increased collaboration and development of common information could improve reliability, reduce costs, and reduce greenhouse gas (GHG) emissions within both systems.

The participant list, agenda, and slides from this workshop can be found on the Gridworks website. Thank you to the William and Flora Hewlett Foundation and the Energy Foundation for supporting this initiative and the workshop.

DAY 1 – SESSION SUMMARY

Ruchi Sadhir (Office of Oregon Governor Kate Brown) opened the workshop, highlighting Governor Kate Brown's priorities on energy within the context of climate change, infrastructure resilience, and local economic growth. She noted that this marks the 10th year of the Pacific Coast Collaborative, and underscored how important regional cooperation is to achieving goals. Tony Brunello (Gridworks) gave a brief overview of Gridworks' involvement to support collaboration on the JAFCC Work Plan, which includes four categories of collaboration: 1) energy efficiency, 2) rate design for emerging technologies, 3) knowledge sharing and technology development, and 4) resource planning. This Gridworks led-and-organized workshop aims to support the state workplan.

Panel 1, "The Northwest Electric System", provided an overview of the Pacific Northwest system to increase California stakeholders' understanding, with a focus on the hydropower system. Steve Kerns (BPA) presented on the BPA system, highlighting how the resource can be used to both provide flexibility and introduce uncertainty into the system. He then focused on the role of power marketing at BPA, and discussed how capacity markets may evolve to provide additional flexibility. Ben Kujala (Northwest Power & Conservation Council), Laura Trolese (Public Generating Pool) provided comments.

Panel 2, "The California Electric System", provided an overview of the California system to increase Pacific NW stakeholders' understanding. Kevin Barker (California Energy Commission) presented on how demand forecasts are conducted, and highlighted existing areas of coordination among the CEC, CPUC, and CAISO. Ed Randolph (California Public Utilities Commission) presented on California's resource adequacy program and the Integrated Resource Plan's reference plan initial modeling results. Ed



additionally provided detail into the forward-looking challenges the California IOUs are facing, particularly meeting local RA needs and departing load due to the rise in popularity of CCAs. Phil Pettingill (CAISO) presented on CAISO's transmission planning process. He provided additional clarity on how the Maximum Import Capability (MIC) is calculated and provided updates on the Flexible RA Criteria and Must Offer Obligation (FRAC MOO) initiative. Tony Braun (California Municipal Utilities Association) provided comment.

DAY 2 – SESSION SUMMARY

Panel 3, "Transmission in the Northwest", focused on transmission issues and challenges with regards to imports and exports, and scheduling protocols. Michelle Cathcart (BPA) provided an overview of the existing transmission system, current constraints on dynamic transfer capabilities, and changes since the energy imbalance market (EIM) was implemented. Dan Williams (Portland General Electric) presented slides as a commenter, highlighting EIM developments and challenges to reducing planning redundancy across a large number of Balancing Authorities. Ben Kujala (Northwest Power & Conservation Council) provided comments and underscored the need to develop new dynamic markets and shift old operational paradigms. Brian Fritz (PacifiCorp) and Steve Johnson (Washington UTC) also served as official commenters.

Panel 4, "Transmission and Market Operations in California", focused on how California markets handle imports and exports, and how CAISO coordinates with other California balancing authorities. Phil Pettingill (CAISO) presented on existing congestion on the California-Oregon Intertie, and discussed market improvements that could enable additional participation from the Northwest, such as expanded criteria for flexible RA to include imports, market improvements and improved flexibility products to ease ramping and manage uncertainty. Tony Braun (CMUA), Molly Sterkel (CPUC), and Kevin Barker (CEC) provided comment. Kevin Barker additionally highlighted that BPA, CEC, and CAISO are currently engaged in discussion on alternative policy scenarios within the Transmission Planning Process, focused on what happens after Aliso Canyon retires. Participants discussed whether reforms to flexible RA may present timing challenges for Pacific NW resources.

DAY 2- INTERACTIVE SESSION

Workshop stakeholders took initial steps to draft problem statements and discuss opportunities for further collaboration. These initial problem statements and opportunities are summarized from discussion below. Workshop participants were also asked to vote on initial preferences for priority opportunities to address.

Problem Statements

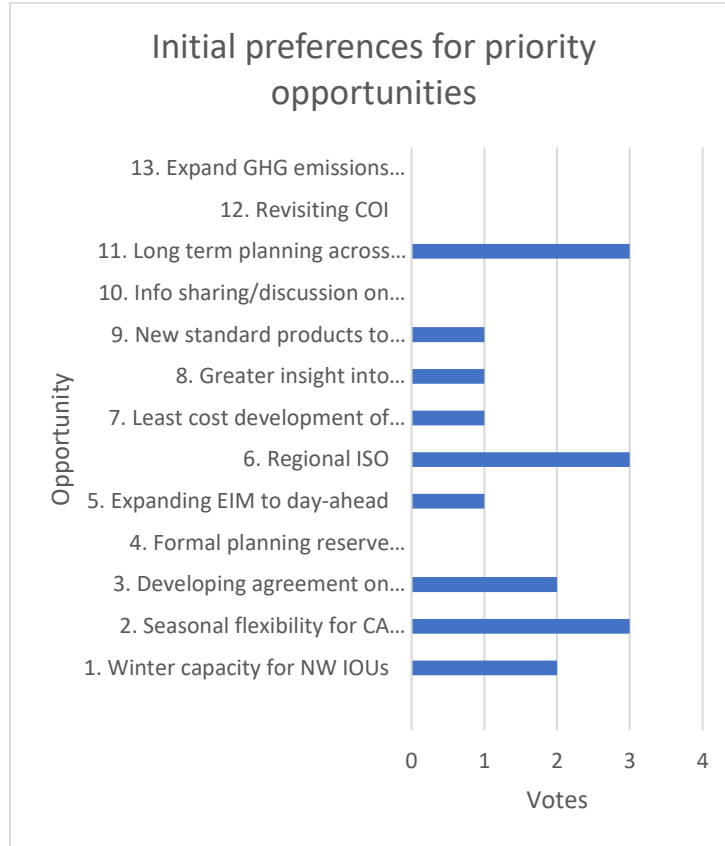
1. Broadly, how can we achieve least cost, least environmental impact/GHG emissions, and maintain a reliable system for all three states with increased sharing?
2. Sharing should include equitable sharing of benefits
3. Sharing should maximize use of existing infrastructure and markets
4. Next steps should be incremental, practical, reasonable given existing restrictions (i.e., fewer regulatory and political hurdles could = more success)

Opportunities

1. Winter capacity for NW IOUs
2. Seasonal flexibility for CA LSEs (i.e., *to achieve the flexibility CA needs, is there a way to benefit from the flexibility inherent in NW hydro? Seasonal flexibility across all regions/directions.*)
3. Developing agreement on common definitions, reduced planning reserves from larger footprint, delineation of reliability ownership and responsibilities
4. Formal planning reserve sharing group (see “Sharing Power” paper)
5. Expanding EIM to day-ahead
6. Regional ISO
7. Least cost development of carbon free resources (i.e., *sharing best practices, models of EE/DR programs, optimal siting for RE development, etc.*)
 - a. RPS alignment/accounting policies
 - b. Understanding optimized hydro (i.e., *replacing thermal vs. providing flexibility for RE integration*)
 - c. Includes #13
8. Greater insight into congestion/intertie (i.e., *we have less understanding of non-IOU portion of COI*)
9. New standard products to better reflect emerging needs of grid to replace 6 x 16
10. Information sharing/discussion about impacts of implementing carbon pricing policy on market interactions and carbon policy alignment
11. Long term planning across 3 states
12. Revisiting COI - if we were to build today, how would you optimize for environmental constraints?
13. Expand GHG emissions tracking for imports/exports (add the GHG tracking functionality that currently functions in EIM and have it work in the DA market so that each hour of import from each intertie has a specified emissions factor that can be optimized during commitment process)

Initial Preferences for Next Steps

Workshop participants were also asked to vote on initial preferences for priority opportunities to address. The voting results are identified below.





Workshop participation list



Last	First	Organization	Email	Title
1. Anthony	Liz	Center for Energy Efficiency and Renewable Technologies	liz@ceert.org	Grid Policy Director
2. Barker	Kevin	California Energy Commission	kevin.barker@energy.ca.gov	Senior Advisor to Chair
3. Braun	Tony	California Municipal Utilities Association	braun@braunlegal.com	Counsel
4. Brunello	Tony	Gridworks	tbrunello@gridworks.org	CEO and Founder
5. Cathcart	Michelle	Bonneville Power Administration	mmcathcart@bpa.gov	Vice President for Transmission System Operations
6. Cebulko	Brad	Washington Utilities and Transportation Commission	bradley.cebulko@utc.wa.gov	Policy Advisor
7. Decker	Megan	Oregon Public Utilities Commission	megan.decker@state.or.us	Commissioner
8. Ehli	Cathy	Bonneville Power Administration	clehli@bpa.gov	Senior Manager for Markets Integration
9. Eisdorfer	Jason	Oregon Public Utilities Commission	jason.eisdorfer@state.or.us	Utility Program Director
10. Florio	Mike	Gridworks	mikeflorio@rocketmail.com	Senior Advisor
11. Fritz	Brian	PacifiCorp	Brian.Fritz@pacificorp.com	Director of Transmission Services
12. Gerlitz	Wendy	Northwest Energy Coalition	wendy@nwenergy.org	Policy Director
13. Hampton	Therese	Northwest Public Generating Pool	thampton@publicgeneratingpool.com	Executive Director
14. Hanhan	Nadine	Oregon Public Utilities Commission	nadine.hanhan@state.or.us	Senior Utility Analyst
15. Hardie	Lisa	Oregon Public Utilities Commission	lisa.hardie@state.or.us	Chair
16. Heutte	Fred	Northwest Energy Coalition	fred@nwenergy.org	Senior Policy Analyst
17. Johnson	Steve	Washington Utilities and Transportation Commission	steven.johnson@utc.wa.gov	Senior Policy Advisor
18. Jones	Phil	Western Grid Group	phil@philjonesconsulting.com	Director



19. Kerns	Steve	Bonneville Power Administration	srkerns@bpa.gov	Manager for Generation Scheduling
20. Koss	Valarie	Pacific Northwest Utilities Conference Committee	valarie@pnucc.org	Deputy Director
21. Kujala	Ben	Northwest Power Council	bkujala@nwcouncil.org	Division Director
22. Mantifel	Russ	Bonneville Power Administration	rxmantifel@bpa.gov	Transmission and Policy
23. Marker	Doug	Bonneville Power Administration	drmarker@bpa.gov	Constituent Account Executive
24. Peacock	Julie	Oregon Public Utilities Commission	julie.peacock@state.or.us	Senior Policy Advisor
25. Pettingill	Phil	California Independent System Operator	ppettingill@caiso.com	Director, Regional Integration
26. Prause	Elaine	Oregon Public Utilities Commission	elaine.prause@state.or.us	Senior Reg. Affairs Advisor
27. Randolph	Ed	California Public Utilities Commission	edward.randolph@cpuc.ca.gov	Director, Energy Div.
28. Sadhir	Ruchi	Office of Oregon Governor Kate Brown	ruchi.sadhir@oregon.gov	Energy Policy Advisor
29. Sterkel	Molly	California Public Utilities Commission	merideth.sterkel@cpuc.ca.gov	Energy Division Program Manager
30. Thakar	Nhidi	California Public Utilities Commission	nhidi.thakar@cpuc.ca.gov	Chief of Strategy and Ext. Affairs, Office of President
31. Tisdale	Matthew	Gridworks	mtisdale@gridworks.org	Executive Director
32. Yourkowski	Cameron	Renewable Northwest	cameron@renewablenw.org	Senior Policy Manager
33. Wang	Laura	Gridworks	lwang@gridworks.org	Project Director
34. Williams	Dan	Portland General Electric	Dan.Williams@pgn.com	CAISO Markets Analyst