



## Northwest Power and Conservation Council Meeting Notes August 13 & 14, 2019 Portland, Oregon

Planning was the theme of August’s Council Meeting in Portland. From stretching to meet ambitious decarbonization goals to Portland General Electric’s demand response strategies, it’s clear that the region’s utilities and planners are working overtime to meet future energy load with a reduced reliance on carbon-emitting resources.

Chair Jennifer Anders led the meeting with all Council Members in attendance. The next Council Meeting will be September 17 and 18 in Corvallis, Oregon.

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### The Agenda

#### **Study explores brave new world of decarbonization**

To achieve deep decarbonization goals by 2050, a significant transformation on multiple fronts will be required in terms of electricity generation, building and transportation electrification, biomass and carbon capture, according to Eileen Quigley, Clean Energy Transition Institute; and Gabe Kwok, Evolved Energy Research.

The researchers presented their study to the Council, [Meeting the Challenge of Our Time: Pathways to a Clean Energy Future for the Northwest](#), which was framed as the first economywide decarbonization study encompassing Washington, Oregon, Idaho and Montana. Other studies have examined the electricity sector, one state or one utility district. None have included constraining

biomass, the use of natural gas in transportation, the impact of limited electrification, and improving grid integration between the Northwest and California.

Quigley said that an 86% reduction in energy-related CO2 emissions below 1990 levels by 2050 is needed to achieve the Northwest’s deep decarbonization target. Their study looked at eight different pathway scenarios, from an optimal “central case” strategy to “business as usual.” The study deploys five decarbonization strategies: energy efficiency, electricity decarbonization, fuel decarbonization, electrification and carbon capture.

The bottom line is that deep decarbonization is achievable, but it depends how radically the energy system will transform. Instead of singular strategies, there are multiple strategies in various stages of evolution. The Clean Energy Transition Institute is convening a variety of stakeholder

### Key Findings

- **Electricity generation approaches 100% clean** without a specific mandate
- **Aggressive vehicle electrification and a highly efficient built environment** powered by clean electricity are **essential**
- **Biomass primarily allocated to jet and diesel fuel**, even after partial electrification of freight
- **Thermal generation important for reliability** in periods of low hydro and renewable output (low capacity factor)
- **New technologies and flexible electric loads combined with storage likely to play key role** producing pipeline fuels & balancing the grid
- **Significant cost savings** if the Northwest and California grids are better integrated



meetings to discuss deep decarbonization. They may also look at additional modeling with assumption changes around hydroelectricity, nuclear availability, coal plant retirements, natural gas pricing and carbon intensity.

Council Member Richard Devlin expressed dismay that the study shows what is possible, but not necessarily how to get there, especially in terms electrifying transportation. Quigley countered that she didn’t mean to convey it was easy — the model shows it’s plausible and it seems necessary. She said the challenge is how to bridge that divide, figure out what we can do in the next 10 years and get on a better trajectory.

## Council urged to embrace end-use planning

Our approach to energy planning, with its focus on incrementalism and least-cost resources, is likely to be too slow and reactive in dealing with a sea of technological and policy changes, said Melissa Powers, Jeffrey Bain Faculty Scholar and Professor of Law, Lewis & Clark Law School.

Powers said energy planning is still dominated by the central power station model and it needs to move to where energy consumers are also energy producers, taking assets offline and putting new ones online. Citing examples of climate change, she said we are in a scenario where we need to decarbonize. We know what the end goal must be and we should plan to get there, she told Council Members.

Powers cited numerous technological innovations and policy changes and pointed to states, cities and counties that have already adopted 100% clean energy targets. Then, there are examples of policy whiplash, she said, such as the federal government announcing changes in the Environmental Species Act and repealing Clean Power Plan. “Policy debates will persist, no matter who is President,” she continued. “I don’t envy anyone trying to plan for energy when policy is in such swings.”

Member Devlin remarked that different parties have different policies. On a lot of issues, people have partial authority, which complicates end-goal planning. Legislative reform may be needed to ensure there is a cohesive group steering these agencies in the right direction, he said. Absent that authority, the various agencies could come together and collaborate on an end-goal planning solution. Adding, outside of nonprofits I don’t see planning agencies doing this.

“People won’t want to pay three or four times more for energy without reliability,” Member Yost said. “I don’t think decarbonization is at odds with reliability, but it will cost more.”

Jim Yost, Idaho Council Member  
NW Power & Conservation Council

Member Jim Yost said the Council already has an end-use objective prescribed in the *Northwest Power Act* which was created because people wanted to be more measured in keeping lights on and keeping fish and wildlife protected. The push for decarbonization and doing away with fossil fuels is political and takes away options for utilities, Yost continued. When people see what it will cost them ... it’s going to be painful. “People won’t want to pay three or four times more for energy without reliability. I don’t think decarbonization is at odds with reliability, but it will cost more,” Member Yost said.

## PGE to ramp up programs to entice demand response participation

Portland General Electric's (PGE) 2019 Integrated Resource Plan (IRP) is forward looking with core themes revolving around decarbonization, acquiring and integrating renewable resources, and demand response. It seeks to engage customers around new technology and programs.

With a capacity need early in the 2020's, PGE looks to acquire around 500 nameplate megawatts of wind and solar by the end of 2023. To help balance this, they are eyeing around 141 MW of winter, and 211 MW of summer, demand response by 2025. While adding in a healthy dose of energy efficiency, energy storage options, and growing their demand side generation fleet.



Focusing on demand response, the conundrum for PGE is how to get customers to engage in the programs. Across the nation, most demand response comes from industrial and large commercial customers. Out of PGE's 860,000 customers, only 12 percent are businesses.

Jason Salmi Klotz, PGE's regulatory and policy strategy, grid architecture, integration and system operations manager, said PGE's target is 66% customer participation in the utility's distributed flexibility programs. When we market, Klotz said,

“we talk to the customer in terms of opportunities and options — opportunities to lower bills and manage their energy costs.”

PGE's offerings include a peak-time rebate program being used by a demand response test group of 14,000 residential customers. PGE pays them \$1 per kWh to reduce usage. If they don't participate, they stay on their normal rate. There is also a multifamily water heater program that uses the appliances for intra-hour demand response. They hope to expand it to a residential water heater program.

PGE's 2019 timetable also looks to expand its smart thermostat programs, and it has 21 MW in their commercial/industrial Energy Partner program. They plan to roll out 500 residential battery units this year — some customer-owned. In addition, it has a clean fuels program for electric vehicles with a demand response component.

## Douglas County PUD to forge ahead with hydrogen fuel production

Following a green light from the Washington Legislature, Douglas County PUD is planning to use excess power from its Wells Dam to make commercial hydrogen gas and use it to fuel large vehicles and industrial processes. Douglas County PUD is headquartered in Wenatchee, Washington, and serves Douglas and Okanogan counties.

Douglas County PUD sponsored state Senate Bill 5588, which allows Washington PUDs to produce, distribute and sell renewable hydrogen, as long as they use renewable electricity such as hydropower to do it. “We pulled the trigger because the timing is right for clean fuels,” said Gary Ivory, general manager of Douglas County PUD.

Ivory explained the process to Council Members. A proton exchange membrane electrolyzer sends an electric current through water and splits it into hydrogen and oxygen. The hydrogen captures electrons, so it is used as an energy carrier. Electrolyzers are nonmechanical and can be ramped up and down in milliseconds. It’s clean and renewable, he said, and the only waste is water.

He said Douglas will probably start with a 2–4 MW electrolyzer and will ramp up over time. Plus, Ivory explained that equipment prices are coming down and they hope to have an operation running within the next decade.

Hydrogen may not be the solution to all our problems, Ivory said, but for large vehicles, this can play a role.

## 2021 Northwest Power Plan

### Imagining the future to prepare for it – what goes into the thinking

The Power Committee continued its work on the new *2021 Northwest Power Plan*. Member Devlin, Power Committee chair, reported that they revisited the Plan’s scenario list. The proposed scenarios look at broad issues that might impact the *Plan* and vary from the accelerated closure of the remaining coal plants in the region to the impact of more-rapid decarbonization of the region’s power supply. The [seven scenarios](#) being considered are listed on the Council’s website.

In addition, Member Devlin reported that staff continues to provide a series of presentations on different processes that will be used to inform various aspects critical to developing the *Plan*. A review of the timeline and project update for the *Plan* indicates it’s on schedule and on time.

