WHEN YOUR COMMUNITY WANTS RENEWABLES

MAKING CHANGES, MEETING DEMAND

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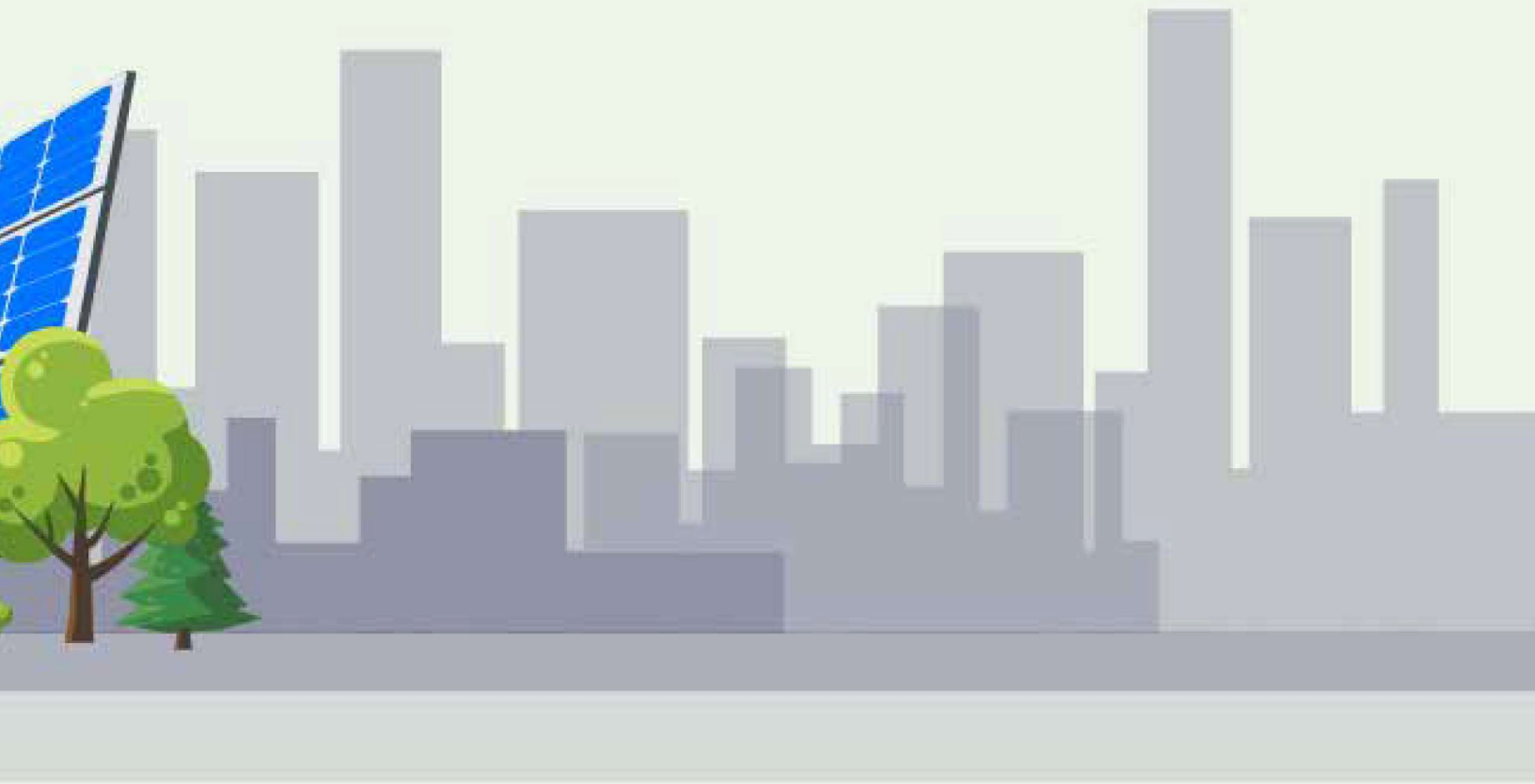


A key pillar of the public power model is to be responsive to what customers want. The energy sources public power utilities use are diverse and reflect a careful balance of what community members need and which sources are available to the community.

A growing number of U.S. communities, including several served by public power utilities, have adopted a commitment to either 100 percent renewable electricity or 100 percent carbon-neutral electricity, according to the Sierra Club's Ready for 100 report. When a community adopts such a goal, the local electric utility takes center stage in helping the community understand what it means and what it takes to make the shift.

From finding affordable ways to acquire power from renewable sources, to purchasing offsets and ensuring the proposed plan aligns with community expectations, public power utilities are working to figure out how pursuing or committing to increased renewable power can be viable for the communities they serve.

Agreeing on What 'Green' Means

Terms such as "renewable energy," "clean energy" and "carbon-free" are terms of art that mean different things to different people, commented Steven Poncelet, public information and strategic affairs director at Truckee Donner Public Utility District in California. He noted that California's pursuit of a cleaner energy mix excludes electricity generated by large hydroelectric facilities and nuclear power, as the state does not include either source on its list of renewables.

The debate over what is renewable has caused California's Palo Alto Utilities to use a different term to describe its environmentally benign electricity supply: "100 percent carbon-neutral." The utility further explains on its website that when it is unable to receive power directly from renewable generation facilities, the utility purchases electricity from non-carbon-emitting sources or buys renewable energy certificates to match the total electricity demand.

Environmental organizations have been split over whether nuclear power should be part of the effort to combat climate change. Even though it is a carbon-neutral and non-emitting source, communities have differing points of view on nuclear power.

The Orlando Utilities Commission in Florida includes its small stake in the St. Lucie Nuclear Power Plant in plans to achieve a goal of having 20 percent of retail electricity come from renewable resources and energy efficiency by 2020, a goal the utility expects to exceed. In August 2017, the city set a target to become 100 percent renewable by 2050. The plant is scheduled to be retired before then, and Linda Ferrone, OUC's vice president of strategy, sustainability and emerging technology, said that the small amount of generation the city currently uses from the plant will likely not factor into the 2050 goal.

The Piedmont Municipal Power Agency, which sells wholesale power to 10 public power

utilities in South Carolina, continues to offer members reliable baseload power through its stake in the Catawba Nuclear Power Station. PMPA's nuclear capacity, combined with member utilities' allocations from the Southeastern Power Administration, make PMPA's energy 90 percent carbon free.

Getting Community Input

"The customer-utility relationship is changing," noted Joe Bernosky, utilities director for Loveland (Colorado) Water and Power. "Increasingly, people want to know their water and power come from clean resources. Utilities need to pay attention to that."

Stakeholder engagement is an essential first step for any public power utility considering a move to 100 percent renewable electricity.

The Platte River Power Authority, a joint action agency owned by and serving the northern Colorado cities of Fort Collins, Longmont, Loveland, and Estes Park, last year investigated the feasibility of adopting a zero net carbon, or ZNC, electricity portfolio. Jason Frisbie, chief executive at Platte River, said, "We conducted an unprecedented outreach and communications program to discuss the zero net carbon model with the communities, which included town hall meetings, formal presentations, a special website, news media coverage, and social media engagement."

More than 100 participants attended the December 2017 town hall meeting where Platte River unveiled the results of its research. Platte River organized several such town halls for the four communities it serves, including the city of Longmont, which in 2017 set a goal of achieving a 100 percent renewable, clean energy supply by 2030.

Working with consultants at Pace Global, Platte River found that it was feasible to have a ZNC portfolio, and it could be done by 2030.

However, Platte River also found that achieving that goal could push up projected production costs by 20 percent, and would also mean retiring one of the highest-performing coal plants in the country.

The agency and its members are moving toward that goal, though they have not yet committed to a ZNC future. With its members' support, Platte River took a big step in January when it signed a power purchase agreement with a 150-megawatt windfarm to be built in southern Wyoming. The project is scheduled to be operating by the end of 2020.

"As a community-owned utility, our customers also are our owners, which makes their wants and needs crucial in setting our priorities," noted Tom Roiniotis, general manager of Longmont Power & Communications. "Sustainability has also become important for both the city as an organization and our community as a whole. Some of our residents have let us know that they want to see more wind and solar electricity, and less coal."

"Our community surveys have long showed a high support for renewable electricity," commented Ryland French, a resource efficiency administrator with City of Aspen Utilities in Colorado. "Where we live, the quality of life is supported by the environment. Our community wants clean air, clean water and clean forests. We believe in local action and global results."

"Strong local sentiment needs to be considered and respected," said Poncelet. Nuclear power, in the form of a small modular reactor, had been proposed to be part of the Truckee Donner PUD's future electric mix until early April, when its board of directors decided not to proceed with the project in the face of local opposition.

Using the IRP Process to Gather Input

Public power utilities often use the integrated resource planning (IRP) process, which includes stakeholder outreach, as a vehicle to assess the community's views on energy and whether the community is willing to pursue a 100 percent renewable energy goal. Sometimes the mayor or city council leads the charge, and sometimes it is an outside group. But in all cases, decisions are rooted in the views of stakeholders.

Georgetown, Texas, a public power community, used the IRP process to ensure the public had a chance to learn about the city's electricity options and to build community buy-in to the process.

Burlington Electric Department in Vermont also used an IRP process, overseen by its Board of Electric Light Commissioners, a citizen oversight board that sets policy, to guide its journey. Significant stakeholder engagement took place around the IRP, which is updated every three years.

"Our bottom line is customer satisfaction, and over the last four decades our customers have told us they want electricity that is reliable, affordable and, increasingly, sustainable," commented Neale Lunderville, general manager for Burlington Electric Department. "When customers speak, we listen."

"We have a number of seniors who live on a fixed income. All three factors — reliability, affordability and sustainability — need to be balanced," said Jacki Marsh, mayor of Loveland. Marsh commended Platte River on its public outreach efforts and commented on how she expects the communication to continue through the city's IRP process in 2018.

In Palo Alto, California, a local advocacy group, Carbon-Free Palo Alto, was the driving force behind convincing the city council to adopt a carbon-free power goal in 2013, recalled Ed Shikada, general manager of Palo Alto

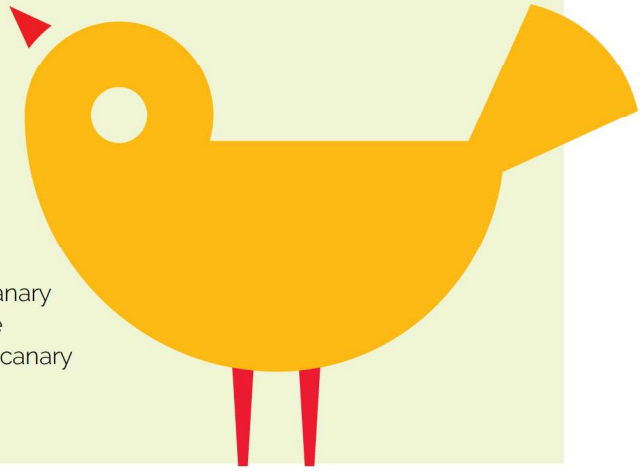
Raising Awareness with a Different Kind of Tweet

Sometimes, an eye-catching visual can be an easy way to start a sustainability conversation with the community.

As a former mining town, Aspen, Colorado, has long used a bright yellow canary as the public face of the city's commitment to reduce greenhouse gas emissions as part of a broader climate action plan, said David Hornbacher, director of City of Aspen Utilities.

The city put canary images on city vehicles, in city literature and in city advertising. Staffers wearing a bright yellow, 6-foot-tall canary suit became prominent fixtures at the Saturday farmer's market and other community events.

"Basically, if you lived in Aspen, you likely knew of the existence of the canary and its meaning," Hornbacher said. "Likewise, as a visitor, you would see the canary traveling throughout the town on the buses and other vehicles. The canary was a very present member in the community for a long time."



Utilities and assistant city manager. However, Shikada said the community's support for sustainability was an essential element of the city's pursuit of 100 percent carbon-neutral electricity.

"It's important to balance advocacy efforts with the anticipated reaction by customers," he said. "In our case, the advocacy efforts of a local group mirrored our customers' desires. But if customers don't support something, that would be hard for a publicly owned utility to ignore. You can't lose track of your community. A public power utility has to care about what its customers care about."

"We were directed to procure carbon-free resources in our IRP, and last year we achieved our goal of being 100 percent carbon-free," said Shikada.

When Affordable is Renewable

Last year's surge in 100 percent renewable commitments came as renewable electricity costs continued falling.

Historically, electricity produced by wind farms and solar facilities has been more expensive than electricity generated by fossil-fueled or nuclear plants. However, investment firm Lazard's annual study on the levelized cost of electricity showed wind and solar energy cost less, on average, than natural-gas-fired power in 2017.

Cost-competitive renewable generation removes a long-standing stumbling block to 100 percent renewable electricity pledges.

Strong communities rely on affordable and reliable — and, increasingly, sustainable (or renewable) — electricity. "We need to balance rates, reliability, and renewables to achieve our aspirational goals," said Ferrone at OUC. "Our goal is to build an energy system that's as sustainable, reliable, and affordable as possible."

Poncelet, of Truckee Donner PUD, agreed: "We think of our challenge as a three-legged stool — rates, reliability, and renewables."

Declining renewable electricity costs mean that, increasingly, the lowest-priced electricity also is the cleanest.

When the City of Georgetown, Texas, issued requests for proposals for power supply in 2012 and 2014, it envisioned a portfolio in which renewables were about 30 percent of the mix. When the bids were opened, the most competitively priced options were wind and solar.

"The two contracts for wind and solar power were not the result of a goal by the city to move

to 100 percent renewable electricity," said Keith Hutchinson, communications manager for Georgetown Utility Systems, which serves about 25,000 customers. "They were the result of getting good offers from wind and solar providers."

"We have environmentally minded residents who have been very supportive of our move to 100 percent renewable electricity," he continued. "But that goal was not really on anyone's radar" when the city began its RFP process. "We were looking for cost-competitive and stably priced power."

"Renewable electricity does not have to cost more than nonrenewable electricity," said Burlington's Lunderville. "But you do need to be sure of your economics. Cost of electricity is a critical component of our customers' budgets."

"In addition to customer, economic, and environmental benefits of 100 percent renewable electricity," he continued, "there's also a risk-management benefit: We are completely insulated from volatility in fossil fuels. That helps us with price stability."

Burlington's shift to sourcing 100 percent renewables, which the city first accomplished in 2014, has not caused electric prices to skyrocket. Quite the contrary: The city features the third-lowest average residential electric prices in Vermont, and its all-in electric prices have not gone up since 2009.

Burlington isn't the only utility to see a cost benefit. "Our first wind-power contract, signed in 2002, was at a premium price, but our second wind contract, signed in 2015, was much less expensive," said City of Aspen's Hornbacher. "Wind prices are amazingly competitive in the market."

"Being [at] 100 percent renewable electricity is the nexus of environmental stewardship and financial stewardship," he continued. "Our residential electric prices are among the lowest 20 percent of Colorado's 55 electric utilities, which demonstrates that a 100 percent renewable electricity portfolio can be achievable and affordable."

When Community Values Outweigh Costs

Although renewable electricity's costs continue to decline, it's not always cheaper than nonrenewable electricity. In California, for example, high renewable portfolio standards have contributed to above-market prices for renewable electricity.

To guide its utility's carbon-free power procurement practices, the Palo Alto, California, city council capped the premium it would pay for carbon-neutral electricity at 65 cents per kilowatt-hour over the cost of non-carbon-neutral power, said Shikada. For most residential customers, that would work out to a maximum charge of about $4 extra per month.

In practice, the utility has been able to procure carbon-neutral electricity at a premium of about 10 cents per kWh, or about $1 per month for residential customers. The public power utility serves about 29,000 customers, and electric demand peaked last summer at about 169 MW.