



Fact Sheet

February 2015

Fueling the energy efficiency powerhouse

BPA and its partners make energy efficiency the region's second-largest power resource.

You can't see it, hear it or smell it, but you can count it. And one kilowatt at a time, the Bonneville Power Administration and publicly-owned electric utilities have helped build the second-biggest generator in the Northwest. Added up over the last 34 years, BPA and its public power customers have saved more than 1,499 average megawatts through energy efficiency. And if that low-cost, carbon-free power were a generator, it would be second only to Grand Coulee Dam — the largest power plant in the United States.

By building the Northwest's second-largest power resource (behind only hydropower), BPA and its public power partners avoided building other, more expensive resources, such as coal and natural gas plants that pollute the air. Through energy efficiency, Northwest residents enjoy the same comforts and conveniences but with lower electric bills, cleaner air and a smaller energy footprint.

Efficiency first

Why would the region's largest power marketer want to save energy? BPA's mission is to provide reliable power at low rates. Energy efficiency is the most cost-effective way to meet our customers' power demands. Plus, it complements our clean power portfolio, which includes marketing carbon-free power from 31 federal dams on



BPA partners with Northwest publicly-owned electric utilities to develop programs and incentives that encourage more efficient energy use in homes, businesses, industrial facilities and by Northwest farmers, growers and irrigators.

the Columbia and Snake rivers, and Columbia Generating Station, the region's only nuclear power plant. Efficiency allows us to stretch the value of the hydropower system, allowing more people and businesses to benefit from this clean, cost-efficient resource.



BPA started building the EE powerhouse in the late 1970s as the Northwest neared a turning point: The federal hydropower system alone wouldn't be able to meet the Northwest's future energy needs much longer. Having just suffered through a foreign oil crisis, Congress passed a law in 1978 (repealed in 1987) to prohibit building new gas-fired plants. The obvious option was to build new coal or nuclear plants to meet the growing power demands. But the Northwest, accustomed to hydropower, chose an untried path.

Enter the Pacific Northwest Electric Power Planning and Conservation Act of 1980. It called on the region to do more with its existing power sources, and it put energy efficiency in the same category as generating resources, a radical idea at the time. The Act required BPA to perform consistent with the Northwest Power and Conservation Council, an organization that sets energy efficiency targets for the region, and to make cost-effective energy efficiency its first choice resource for meeting the region's growing power needs. Two weeks after the Act passed, BPA increased its spending on energy efficiency and hired 181 employees to embark on the mission. With no guidebook to follow, the agency cast a wide net for new ideas, paving the way for the innovative, effective programs in place today.

Acquiring savings

Meeting the Council's target is a regional effort. As a wholesale power marketer, BPA does not work directly with individual energy consumers. Instead, it works with its utility customers to develop programs and incentives that encourage more efficient energy use in homes, businesses, industrial facilities and by Northwest farmers, growers and irrigators.

When BPA's utility customers purchase power from BPA they also invest in energy efficiency. A portion of the power rate goes to support BPA's regional energy efficiency program. The primary component of BPA's EE program is the suite of efficiency measures it offers to utilities. Customers can choose from a huge list of different measures that they can implement and report to BPA for reimbursement. These measures cover every sector of the economy and range from simple residential light bulbs to massive industrial motors. This variety allows BPA's customers to pick the programs that best serve their retail power customers.



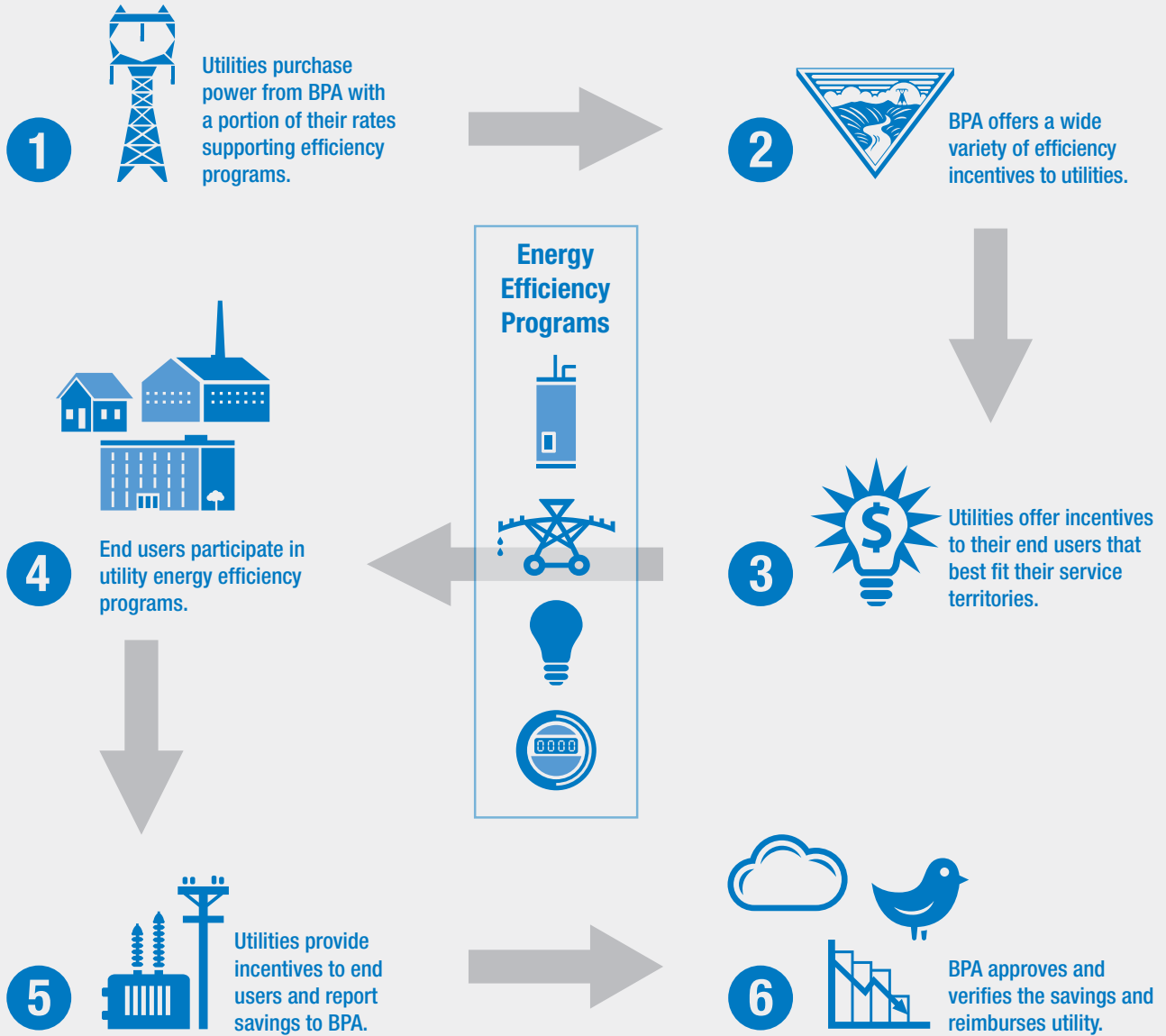
BPA and the Northwest Energy Efficiency Alliance co-host an annual conference where staff from electric utilities throughout the Northwest, as well as implementers, consultants, researchers, vendors and industry partners, share their energy efficiency experiences and learn about the latest energy-saving innovations and programs. (Photo by Jim Maddry/NEEA)

In addition to offering a menu of measures to its customers, BPA develops regional programs that offer turn-key services that are tailored to the specific market opportunities and provide customer utilities with flexibility. These regional turn-key programs offer economies of scale that couldn't be achieved by individual utilities, provide specialized staff and resources to utilities, and deliver a standardized programmatic approach across the region.

Before implementation, each BPA program must meet rigorous standards to ensure it will provide a cost-effective, reliable resource. Afterward, BPA tracks and verifies the amount of energy savings that its customer utilities gain. This measurement and evaluation ensures that the region can count on the savings we report.

Beyond guiding the delivery of energy efficiency opportunities and programs, BPA plays a number of other key roles in fostering efficiency in the Northwest. From developing marketing materials that utilities can use to promote their programs; to overseeing the reporting and verification of energy savings for the Northwest Power and Conservation Council; participating in the Council's processes for developing regional power plans; and coordinating with the Regional Technical Forum on developing and maintaining methods to estimate savings, costs, and lifetimes of energy efficiency measures.

How BPA and its customers acquire energy efficiency.



ENERGY EFFICIENCY FACTOIDS

1,499+

Number of aMWs BPA and its power customers have saved through energy efficiency since 1980.

#2

Energy efficiency is the region's second-largest power resource (behind only hydropower).



The carbon-dioxide benefit of energy efficiency in the region since 1982 is equivalent to taking nearly one million cars off the road.

Technology pipeline

Technologies on the shelf won't be enough to meet the Northwest's long-term energy efficiency targets. That's why BPA funds the research and development of new technologies. Through the Emerging Technologies for Energy Efficiency program, known as E3T, BPA works with experts across the region to research new technologies that have the greatest potential value for BPA and Northwest electric utilities.

BPA conducts research and demonstration projects to understand the readiness, availability, potential savings and other criteria of new technologies. The E3T initiative, like all of BPA's energy-efficiency efforts, draws from a broad network of partners who provide research and other program support. These collaborations are supported by two online resources BPA helped develop: www.E3TNW.org, a database of information about new technologies; and Conduit, a web-based resource that facilitates information-sharing and coordination among EE professionals in the Northwest.

BPA's Office of Technology Innovation also plays an important role in the future of energy efficiency. Through the National Energy Efficiency Technology Roadmap,



BPA's Emerging Technologies team monitored new high-efficiency variable capacity heat pumps at homes in central Oregon to learn more about their performance in the Northwest climate.

BPA engages a diverse group of experts across North America to determine what to study, test and pursue next. For example, since 2009, BPA has managed a variety of demand-response pilots in the residential, commercial, industrial and irrigation sectors and is now scaling up its pilots to tap the potential of this budding technology. And via Technology Innovation's annual research portfolio, BPA continues to search for ways to save more energy, reduce costs and operate the power system more efficiently and reliably.

For more information about BPA's energy efficiency programs, go to www.bpa.gov/ee.

VALUE OF ENERGY EFFICIENCY

Cleaner air

The Northwest has the lowest intensity of greenhouse gas emissions in the country, according to the Council. More than 3,600 tons of carbon-dioxide emissions are avoided for each average megawatt of energy efficiency savings. The carbon-dioxide benefit since 1982 is equivalent to taking nearly one million cars off the road.

Lower bills

Energy efficiency saves the region's energy consumers nearly \$3.5 billion in avoided electricity costs each year. When you consider the costs of a power project over its lifetime, EE comes in at about \$17 to \$18 per megawatt-hour, roughly five times less than the cost of a new natural gas plant. Even during difficult economic times as the growth in power demand slows, EE remains a wise investment, given its affordability and the region's long-term outlook for load growth.



Homeowner John Hesch, a customer of Mason County PUD No. 3 in Shelton, Wash., is seeing substantial savings on his heating bill, and says using his ductless heat pump is "as easy as falling off a log."

Stronger economy

Energy efficiency saves money for the people, businesses and industries of the Northwest, allowing them to invest more in the region's economy. And more directly, implementing energy efficiency projects requires skilled labor. BPA and public power's investment in energy efficiency supports jobs in every Northwest community.