

# Oregon Conservation and Respect Report 2016

Protecting and enhancing the environment is a core principle for Pacific Power. While providing safe, reliable electric service to our customers, we strive to be good stewards by conserving natural resources, developing innovative solutions, growing renewable resources, reducing emissions, protecting habitats and more.



*Let's turn the answers on.*



# Energy Efficiency

Saving energy conserves natural resources, reduces emissions and keeps electricity costs low. Pacific Power teams up with Energy Trust of Oregon to encourage customers to be wattsmart®. Together with our Oregon customers in 2015, we **saved more than 213,000 megawatt-hours of electricity**, creating benefits equivalent to:

- Powering nearly 19,000 homes for a year.
- The electricity generated by 42 utility-scale wind turbines.

Our energy efficiency programs are projected to meet 87 percent of our projected load growth companywide for the next decade. Some of our wattsmart energy-saving programs in Oregon include:

- Programs for homeowners – customers can get cash back on smart thermostats, energy-efficient appliances, heating equipment and other home energy improvement projects.

- EPS™ – brought to you by Energy Trust, EPS is an energy performance scoring tool helping homeowners of newly constructed or existing homes see a home's estimated energy consumption, energy costs and carbon footprint.

- Appliance recycling – customers can receive a cash incentive for recycling their inefficient, older refrigerators, freezers or clothes washers.



- Programs for businesses – with technical services and cash incentives, commercial, multifamily, industrial and agricultural customers can increase energy efficiency.
- Energy benchmarking – in 2015, Pacific Power introduced Resource Advisor to help customers better manage commercial building performance.



# Reducing Vehicle Emissions

We are proactively partnering with automobile manufacturers and others to plan, develop and drive requirements for electric vehicles and their interface with the power grid. We maintain a pulse on alternative fuel technologies and provide information on our website about purchasing and charging electric vehicles.

Automatic Vehicle Locator equipment has been installed in 2,196 company vehicles to help us use less gasoline and promote a healthier environment. Company vehicles **drove 2.35 billion fewer miles in 2015** and the fuel economy rose 13.6 percent. The avoidance of 6,171 tons of

greenhouse gases was equivalent to taking 1,200 passenger vehicles off the road for a year.

The company also placed four new 37-foot, plug-in hybrid electric bucket trucks into service companywide to help linemen do their jobs more quietly and with fewer emissions.

Through the company's idle-free policy, smarter vehicle routing, and emphasis on improving fuel economy, **more than 600,000 gallons of fuel were saved in 2015.**



# Renewable Resources

Wind, hydro and geothermal resources currently make up more than 19 percent of the company's owned generating capacity. We support prudent and cost-effective renewable resources through power purchase agreements, ownership, leasing and by continuing to offer programs that help customers install their own renewable resource systems. We own 13 wind projects and purchase additional wind and solar resources. The American Wind Energy Association named our company the **second largest rate-regulated utility owner of wind resources in the nation.**

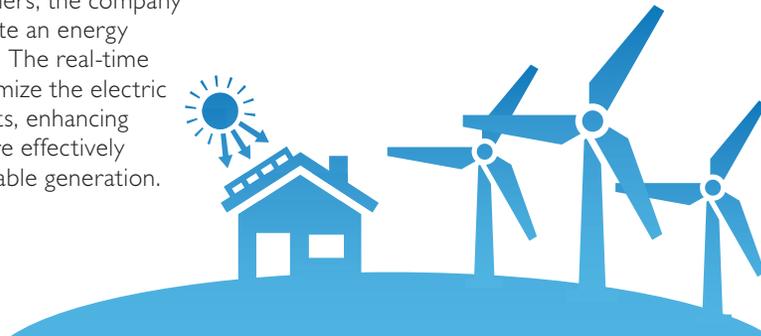
Our most recent Integrated Resource Plan includes power purchase agreements for more than 1,100 megawatts of new wind and solar projects expected to be completed by the end of 2017.

In 2015, we committed to the American Business Act on Climate Pledge. This pledge demonstrates the company's ongoing efforts to transition towards a lower-carbon future.

Recently, we worked together with utility, advocacy and community groups on the Clean Electricity and Coal Transition Plan, transitioning Oregon away from coal towards more clean, renewable energy in an affordable way. Approved by lawmakers, the plan phases out coal from state rates by 2030 and increases the state's renewable portfolio standard to 50 percent by 2040.

To benefit customers, the company partnered to create an energy imbalance market. The real-time market helps optimize the electric grid, lowering costs, enhancing reliability and more effectively integrating renewable generation.

Blue Sky<sup>SM</sup> is a voluntary program customers can participate in to support the development of renewable energy resources in the Western U.S., including community-based projects. Blue Sky renewable energy is separate from, and in addition to, what Pacific Power buys or generates to serve customers. **More than 106,600 customers are enrolled** in Blue Sky in the six states our company serves, including more than **54,000 customers in Oregon.** During the last 16 years, Oregon customers supported renewable energy equal to planting more than 44.6 million trees. Participants also have helped fund 77 new community-based renewable energy projects.



# Recycling



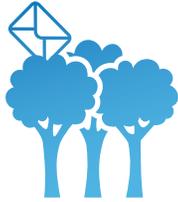
Pacific Power recycles as much as possible and properly disposes of all other wastes. Proceeds from recycling are either donated to nonprofit organizations or reinvested into the company to reduce operating costs.

In 2015, Pacific Power **recycled more than 58,300 gallons of used mineral, transmission and motor oils.** In Oregon, the company donated \$3,830 from the sale of 15,320 gallons of used oil to HEAT Oregon, a nonprofit organization that helps low-income Oregonians with emergency energy assistance during the winter months.

We also shredded and recycled paper documents with the environmental equivalent of saving 2,386 trees, 281 barrels of oil and 982 gallons of water.

**More than 427 tons of metal was recycled in 2015.** In addition, 9 tons of glass and 19 tons of compostable material was collected from employee lunch rooms. The company also has established systems for recycling used toner, batteries, carpet, cardboard and plastics.

# Paperless Billing and Reusable Envelopes



The only thing better than recycling paper is saving paper. With **31 percent** of our customers choosing paperless billing at the end of 2015, we are saving more than **267,000 pounds of paper** envelopes and bills each year. In addition, the company provides a two-in-one, reusable envelope for customers who still prefer a paper bill. Each year, the reusable envelope is expected to **conserve 3,216 trees, 3.7 million gallons of water and electricity equivalent to the annual use of 62 homes**, all of which were required to manufacture the paper for the payment envelopes used previously.

# Wildlife and Habitat Protection

Protecting wildlife habitat is central to our goal of protecting the environment. We focus on preserving forests, grasslands and wetlands; reducing hydroelectric facilities' impact on fish and wildlife; and implementing avian protection plans.

Over the coming decade, endangered sucker fish in the Klamath Basin will benefit from our continued partnership with The Nature Conservancy to restore wetlands and improve habitats. Our ongoing partnership with the National Fish and Wildlife Foundation is also implementing meaningful habitat restoration projects that continue to benefit salmon in the Klamath River Basin. Our fish passage project on the North Umpqua River in Oregon provides fish access to **historic spawning grounds unused for more than 60 years**.

In Washington, our efforts on the Lewis River are allowing migrating fish access to approximately 100 miles of habitat that was previously unavailable. In this area, we manage more than **13,000 acres of wildlife habitat**.

In 2015, we conducted avian-protection training for field employees and installed protective equipment on **10,900 power poles and in 70 substations** companywide. We reframe poles and install covers on conductors to prevent birds from making electrical contact. In areas where bird collisions are a risk, lines are marked to make them more visible. We also install platforms to provide nesting sites away from energized lines. These efforts benefit birds and other wildlife and improve service reliability.

# Trees

To maintain a safe corridor around power lines, our crews worked on more than **679,200 trees** companywide along 16,450 miles of transmission and distribution lines in 2015. Trees are the most common cause of power outages when branches fall on lines during high winds and storms.

Since 2002, the company has been recognized with the Tree Line USA award from the National Arbor Day Foundation for our tree-friendly practices. We also offer tree certificates for Arbor Day planting projects in partnership with communities.



# Air Quality

As we work to provide safe, reliable and reasonably priced electric service for customers, we are continuously developing and implementing strategies to improve our emissions performance.



Since 2005, we have invested in pollution control technology and retired coal plants that have reduced emissions by:

- 60 percent for sulfur dioxide
- 43 percent for nitrogen oxides
- 65 percent for mercury

Further, through investments in energy efficiency, renewable resources, and other air quality initiatives we have **lowered our carbon emissions rate<sup>1</sup> from 1.81 to 1.607 pounds of CO<sub>2</sub> per kilowatt-hour.**

<sup>1</sup> This is the emissions rate for electricity that is delivered to customers. Data is from 2005 to 2014.

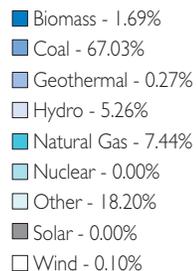
# Generation Sources

Electricity can be generated from many sources. In 2015, we had a company-owned net generating capacity of 10,894 megawatts and purchased additional power from other suppliers as needed. The resource mix used to meet our customers' energy needs, including purchases, has changed in recent years, as shown in the charts below.

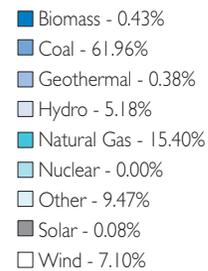
We plan to continue to transition our energy resource mix from baseload thermal to renewables and flexible resources by using state-of-the-art technology and coordination across our large geography, and through our partnership in the energy imbalance market. Our most recent Integrated Resource Plan assumes that approximately 2,800 megawatts of existing coal capacity will either be retired or converted to burn natural gas by 2034.

## ENERGY RESOURCE MIX

2005\*



2015\*



\*This information is based on Federal Energy Regulatory Commission Form 1 data. The Pacific Power "energy resource mix" is based on energy production and not resource capability, capacity or delivered energy. All or some of the renewable energy attributes associated with wind, solar, biomass, geothermal and qualifying hydro facilities in Pacific Power's energy resource mix may be: (a) used in future years to comply with renewable portfolio standards or other regulatory requirements, (b) sold to third parties in the form of renewable energy credits and/or other environmental commodities or (c) excluded from energy purchased. Pacific Power's energy resource mix includes owned resources and purchases from third parties.



**Here are three simple things customers can do:**

- Be wattsmart – save energy and money
- Sign up for Blue Sky<sup>SM</sup> renewable energy
- Choose paperless billing



**wattsmart**

As we strive to transform the future of electricity in the West, through innovation, flexibility and strategic partnerships, we'll continue to look for ways to operate efficiently and responsibly. To learn more about our commitment, visit [pacificpower.net/respect](http://pacificpower.net/respect).

 **PACIFIC POWER**

*Let's turn the answers on.*

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Carbon emissions rate of 1.607 pounds of CO<sub>2</sub> per kwh from 2014. All other figures reported from 2015, unless otherwise noted.