

# PGE actions **avoid and reduce carbon emissions**

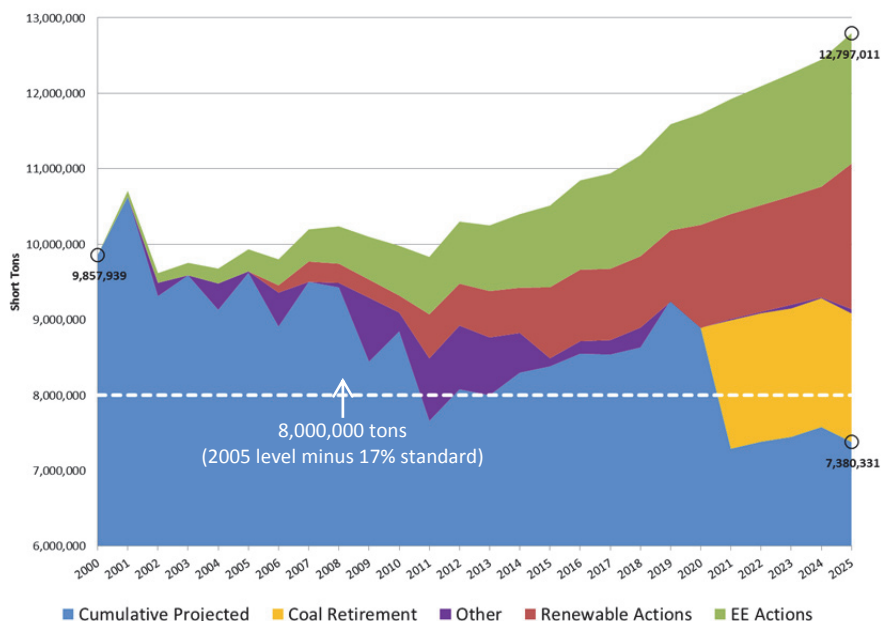
As PGE develops solutions to meet our customers' energy needs, we are protecting the environment and combatting climate change by producing less carbon dioxide.

## **PGE actions already avoid emitting almost 1.6 million tons of carbon each year.**

Our investments during the past 10 years include:

- **Energy efficiency.** PGE works closely with Energy Trust of Oregon to help our customers find ways to use less energy. PGE customers contribute about \$78 million each year to Energy Trust to fund energy-efficiency programs. These investments help make Oregon a leader: Oregon ranks third among all states for energy efficiency, according to the American Council for an Energy Efficient Economy.
- **Renewable energy.** Our investments in renewable energy, including our Biglow Canyon and Tucannon wind farms, are helping us meet Oregon's Renewable Portfolio Standard. PGE was part of the coalition that developed the standard, adopted by the Oregon Legislature in 2007. We also purchase wind power under long-term contracts and run the No. 1 renewable power program in the nation.
- **Plant efficiency upgrades.** Our investments increase electricity production without building new generation. We're also building fish-passage improvements that have allowed us to retain carbon-free hydroelectric power from our facilities on the Deschutes, Clackamas and Willamette rivers.
- **Climate Trust payments.** When we build natural gas plants, we make payments to the Climate Trust which uses the funds to purchase carbon offsets to further reduce our carbon emissions.

### **PGE Carbon Profile**



**New actions will reduce and avoid carbon emissions by an estimated 2.2 million tons per year**

Between now and 2021, PGE will continue to add renewable energy resources to comply with Oregon's Renewable Portfolio Standard.

We will cease coal-fired generation at our Boardman plant in 2020, reducing average annual carbon emissions by about 1.2 million tons.

We will also continue to invest in energy-efficiency efforts and upgrades to make our existing plants as efficient as possible.

**PGE will cease coal-fired generation at our Boardman plant in 2020.**

Ending coal-fired generation at our plant near Boardman, Oregon will reduce the annual average carbon emissions by about 1.2 million tons per year. This action will make Oregon one of the few states in the nation without coal-fired generating facilities.

The Boardman 2020 Plan was a collaborative effort between PGE, state regulators, customers and environmental groups to benefit the environment and customers.

**New technologies hold additional promise.**

PGE is testing and rolling out new technologies that will help reduce the grid's environmental impact and enhance system reliability. Here are a few of PGE's investments in new technology:

- **Smart meters.** PGE has installed smart meters on homes and businesses throughout our service territory. Smart meters can be read remotely over a private, secure wireless network, so meter readers no longer have to visit homes or businesses every month to read the meter. This cuts 1.2 million miles of driving, saves 80,000 gallons of gasoline and reduces CO<sub>2</sub> emissions by 1.5 million pounds every year.
- **Salem Smart Power Center.** PGE's smart grid demonstration project is testing equipment that helps integrate variable renewable power and demand-side resources with battery storage technology.
- **Boardman biomass research project.** PGE is testing the possibility of using renewable biomass to fuel our Boardman Plant when we cease using coal there.

**PGE is working to find the right balance.**

At PGE, we will continue our efforts to reduce and avoid carbon emissions with investments that are good for the environment and for our customers. However, with current technologies and resources, it is not yet possible for utilities like PGE to provide reliable, safe and affordable electric power with an entirely emissions-free generation portfolio.

Improvements in technology will continue to evolve over time, allowing PGE to integrate non-emitting generating resources into our system and to achieve greater energy efficiency. In the meantime, PGE is making important reductions in carbon intensity and piloting new technologies, all while maintaining the reliability, safety and affordability our customers expect.



*Salem Smart Power Center*



*Torrefied biomass*

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PGE is committed to creating a sustainable,  
diverse, affordable **energy future**  
for Oregon.