



Portland General Electric has filed a new Integrated Resource Plan (IRP) with the Oregon Public Utility Commission (OPUC). The plan describes an energy supply strategy for the next 20 years to provide reliable, responsibly-generated and reasonably-priced electricity that will serve the needs of more than 1.5 million Oregonians. PGE believes the proposed action will help lay the groundwork for Oregon's energy future, reflecting our customers' priorities while making good use of existing resources.

PGE's plan includes a four-year strategy for acquisition of new resources and a 20-year strategy that outlines long-term expectations for our resource needs and portfolio performance. The Integrated Resource Plan includes energy efficiency, new renewable resources, new transmission, improvements to existing energy facilities and new generating projects. PGE's plan would reduce our reliance on power purchases on the open market, increasing system reliability for our customers.

The OPUC requires PGE and other regulated electric utilities to submit IRPs periodically to guide how each utility will meet customer demand in coming years, reflecting new technologies, market conditions, and regulatory requirements. Developing an IRP is a rigorous analytical process, taking into account environmental impacts, fuel supply availability and price volatility, resource diversity, and the ability of different kinds of resources to reliably meet demand.

PGE's plan was developed through extensive research and discussion with customer groups, regulators, and outside experts – all aimed at finding the resource portfolio with the best combination of cost and risk for our customers.

Following guidelines provided by the OPUC, PGE formulated our plan to address gaps between existing energy supplies, baseload and peak demand projections and to meet the state's renewable energy requirements.

PGE believes strongly in the strength of diversity in resources. Every different resource for generating electricity has advantages and disadvantages; if we rely too heavily on any one resource our customers face increased costs, risks and reliability problems. That's true for conventional resources like coal, natural gas and the Northwest's signature hydropower. It is also true for new resources like wind and solar. PGE knows putting all our eggs in one basket is not prudent for our customers – and that's why our plan builds on a mix of these resources to take advantage of the strengths of each while minimizing their disadvantages.

PGE's Integrated Resource Plan includes:

- All energy efficiency measures identified as achievable by the Energy Trust of Oregon – which PGE expects would meet nearly half of PGE's load growth from now thru 2020.
- New renewable resources to meet Oregon's renewable energy standard requirements on or ahead of schedule.

What's an Integrated Resource Plan and how does PGE decide on a proposal?

What measures are outlined in PGE's Integrated Resource Plan?

- Demand-side resources – measures that can reliably deliver short-term reductions in customer demand to help manage loads during peak periods. This could include systems where customers who have the flexibility to do so, can voluntarily sign up to allow the utility to remotely control the cycles of certain major household appliances during peak demand periods.
- New, efficient natural gas-fired generation with state-of-the-art turbines and pollution controls to serve existing load, meet additional load growth and maintain reliability standards. This would include 300 to 500 megawatts of baseload capacity and 100 to 200 megawatts of flexible resources. In addition to helping serve load growth, these resources will help back up renewable resources like wind and solar that aren't always available on demand.
- Short- and mid-term market purchases.
- Installation of major emissions control retrofits on PGE's coal-fired generating plant near Boardman, Oregon, to meet aggressive new environmental standards adopted by the state Environmental Quality Commission last spring. The controls would enable continued operation of the plant with an estimated 80 percent reduction in haze-causing emissions and 90 percent reduction in mercury emissions – aggressive reductions that reflect some of the most stringent standards in the country.
- New transmission capacity to help meet growing energy needs, enable development of more renewable power projects, and enhance reliability of the electrical grid.

Will the plan allow PGE to meet Oregon's renewable energy standard?

Yes. PGE works hard to reflect our customers' values; that's why we were part of the coalition that developed and lobbied the Oregon legislature to enact the state's renewable energy standard. PGE has invested millions in energy efficiency upgrades and environmental improvements at our generating stations – in addition to the billion-dollar investment in Biglow Canyon Wind Farm. The plan calls for adding another 122 average megawatts of new renewables added to PGE's diverse mix of resources by 2015, helping to ensure the utility meets the state's renewable power requirements on or ahead of schedule. An additional 122 average megawatts would produce about the same amount of power as another wind farm the size of Biglow Canyon.

How is PGE incorporating energy efficiency into its IRP?

At PGE, we are committed to reducing the environmental impact of generating electricity by capturing all energy efficiency measures identified as achievable by Energy Trust of Oregon in our IRP. We expect to meet nearly half of PGE's load growth from now through 2020 by pursuing aggressive energy efficiency measures, in addition to implementing new strategies to help manage peak demand periods during the winter and summer. Because PGE prepares a new IRP roughly every two years, if new technologies or new incentives prove effective in encouraging customers to make even greater improvements in energy efficiency over time, those additional savings will also be folded into future resource plans.

Is the region's energy demand growing?

The Pacific Northwest continues to be one of the fastest growing regions in the country. Over the next 20 years, the demand for more electricity to serve Oregon customers will increase more than 45 percent, compared to 30 percent nationally. Added to the fact that a number of PGE's long-term power contracts are set to expire over the next few years, the gap between what PGE has available and what our customers will need is growing.

Why did PGE choose to recommend investing in air emission upgrades at the Boardman plant rather than replacing it with another generation facility?

PGE has one of the most diverse mixes in the country, which helps us provide reliable, reasonably-priced power for our customers. As one of the most dependable and cost-effective generating resources, Boardman is a critical part of the mix. After thorough analysis, conducted during multiple regulatory processes, we believe it is clear that our customers' best interest are served by installing new, cost-effective environmental controls so that we can continue to operate this valuable workhorse for many years to come. Upgrading Boardman is an important part of PGE's long-term, comprehensive strategy to make our energy portfolio more sustainable, environmentally and economically, so it can continue to meet our customers' electricity needs.

What improvements are planned for the Boardman plant?

PGE has developed an aggressive action plan to cut permitted haze-causing emissions from the plant by an estimated 80 percent as our part of a shared, regional and statewide commitment to improve visibility in wilderness areas and national parks such as Mt. Hood and Mt. Rainier. We have also agreed to install controls to cut the plant's emissions of airborne mercury by an estimated 90 percent. These are some of the most stringent and ambitious targets for reduction of mercury and haze-causing emissions in the nation.

This long-term, comprehensive emissions control strategy includes:

- A scrubber to reduce sulfur dioxide (SO₂) emissions
- A fabric filter to reduce SO₂, particulate matter and mercury emissions
- New burners, modified over-fire air ports, and a selective catalytic reduction system on the plant's steam boiler to cut emissions of nitrogen oxides (NO_x)
- A sorbent injection system for mercury control

Will PGE consider purchasing the power it needs to meet growing demand instead of potentially building two new plants?

PGE will conduct a competitive bidding process to meet the need for new resources to supply our customers' demand for electricity. Under this process we'll evaluate all options that deliver long-term supply certainty, including PGE's benchmark proposals to self-build two new gas-fired generating facilities along with other proposed resources from third parties, such as long-term power purchase agreements.

Why do we need new transmission lines?

Although Oregon has seen significant growth in population and industry in the past 25 years, no major transmission projects have been built to reinforce the grid. As a result, the transmission system is nearing capacity.

When there is not adequate transmission capacity, lines become congested and reliability problems can occur. Congested lines are essentially clogged, leaving no room for additional electricity to flow to homes and businesses. This can require

wind power producers and others to cut back on the energy they produce because there is not enough room on the lines to transport the electricity.

Additional transmission in Oregon would:

- Maintain a reliable flow of electricity and ensure the continued reliability of the entire electrical grid, which keeps power flowing to all of Oregon’s homes, farms and businesses;
- Enable more renewable power by providing transmission access to renewable power; and
- Meet Oregon’s energy needs – By growing Oregon’s economy and attracting new jobs, more transmission will be needed to move electricity to the homes and businesses that need it.

Will this plan cost PGE customers’ rates to increase?

Cost is an essential factor in the IRP planning process – as is reliability – so our recommended portfolio is the mix of resources that is expected to offer the best overall performance for our customers, while balancing cost and risk.

Major capital investments have an impact on our prices – whether we’re investing in energy efficiency, renewable power, transmission, or conventional generation – but simply doing nothing is not an option. Our customers and our economy need reliable electricity, and our job is to manage the costs to keep the price of that electricity reasonable.

What are the next steps in the IRP process?

The Oregon Public Utility Commission will review the plan and accept public comments before issuing an order regarding its “acknowledgment” of the plan.

Learn more

More information is available at PortlandGeneral.com.