

## FACT SHEET

# Modernizing Oregon's Grid with All-Electric Buildings

Oregon must modernize its electric grid to maintain reliable and affordable power. Efficient, all-electric buildings can be a valuable tool in optimizing this evolution. There's no need to wait: today's grid can already serve thousands of new electric systems as utilities continue long-term planning efforts.

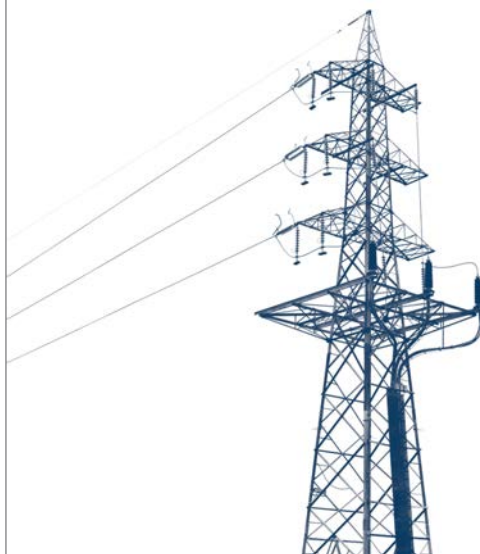
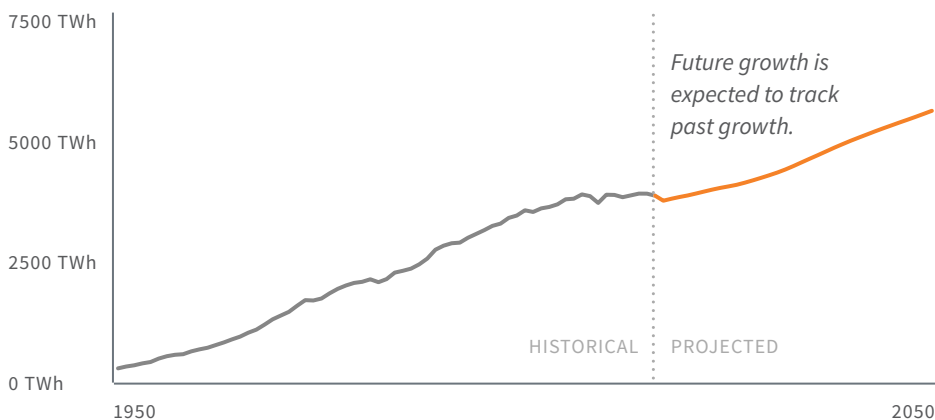
## Building the grid of the future starts today

Updating and expanding Oregon's grid is essential to improving reliability and powering electrified buildings and vehicles as part of our clean energy transition. Managing this growth will require coordinated investments in grid

infrastructure, distributed energy resources like solar and battery systems, and building technologies that give grid operators more flexibility. Utilities need to inform this process by creating infrastructure plans that reflect a climate-aligned trajectory.

Grid-interactive technology could offset **20% of projected electric demand** by 2030, helping manage grid growth.<sup>2</sup>

## U.S. electricity consumption will continue to rise with the growing adoption of all-electric vehicles and buildings<sup>1</sup>



## We are ready for accelerated heat pump adoption

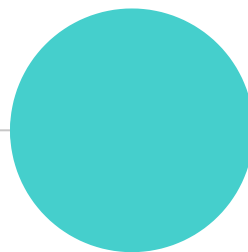
Oregon policymakers and regulators should advance building electrification efforts to both catalyze and inform long-term grid planning. Today's grid distribution system can already serve 5-6 times more heat pumps than are currently in operation.<sup>3</sup> Utility operators are well-prepared to meet this growing demand as long-term plans are developed.

## Today's grid can support substantially more heat pumps<sup>3</sup>



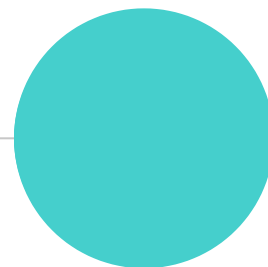
**15%**

of buildings **currently** use heat pumps<sup>4</sup>



**80%**

could electrify with **standard** heat pumps



**91%**

could electrify using **high-performance** heat pumps

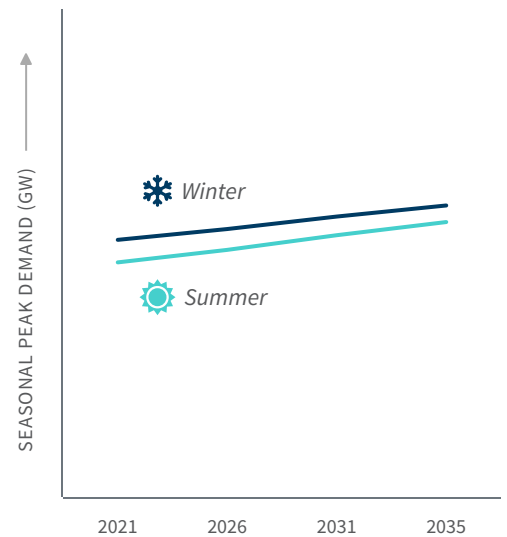
## Electrification will change how our grid operates

Oregon's infrastructure is designed to meet the maximum load (a.k.a. "peak demand") that buildings require throughout the year. Oregon is one of the few states in the country that currently peaks in winter months, in part because most homes in the state already use electricity for heating. Ensuring homeowners use efficient heat pumps can **reduce these winter peaks**.

Oregon will also see an increased summer peak as the climate warms and air conditioning use grows. Promoting heat pumps and other efficient electric systems can allow utilities to export more electricity to neighboring states when they need it most, **helping reduce prices for local consumers**.



States like Oregon will see a more seasonally balanced grid<sup>5</sup>



## All-electric buildings can help modernize the grid

Oregon's transition to a clean power grid will rely on several innovations in all-electric buildings to improve reliability while increasingly running on renewable energy. Together, the technologies described below can balance energy use throughout the day to reduce carbon emissions and electricity bills. They can also help prevent blackouts and allow for the continuation of essential services when the power does go out.



### Efficient equipment

Heat pumps and other modern, energy efficient building systems reduce overall electricity consumption year-round.



### Grid interactive technology

Smart appliances and energy management systems let buildings shift power use during the day based on real-time grid conditions.



### Distributed energy resources

Solar, battery storage, and electric vehicles can act as grid assets and maintain building operations when the power goes out.



### Microgrids

These networks cost-effectively balance operations across multiple buildings and support community-scale resilience.

## Take action

Policymakers can help guide strategic investment in the grid in several ways:

- ▶ **Adopt high-performance building codes** that incentivize or require solar, battery systems, energy efficiency, and other technologies to support grid flexibility and increase resilience.
- ▶ **Direct utilities to establish integrated distribution plans** that account for climate-aligned electrification of all sectors and leverage available federal funding.

- ▶ **Direct utilities to adopt ratemaking processes, tariffs, and incentives** to encourage the adoption of building energy management systems, on-site energy generation, and energy storage.
- ▶ **Improve state oversight** over transmission spending to prioritize regional and interregional projects that support grid decarbonization efforts.

## Learn more

*What States Can Do to Modernize the Grid*, Climate XChange, 2023: [bit.ly/44nqXSH](https://bit.ly/44nqXSH)

*Modernizing the Electric Grid: State Role and Policy Options*, National Conference of State Legislatures, 2021: [bit.ly/3pq0a9G](https://bit.ly/3pq0a9G)

*Cut Costs, Reduce Carbon, and Improve Health with Demand Flexibility*, RMI, 2020: [bit.ly/3r6cLzv](https://bit.ly/3r6cLzv)

### NOTES

1. National Renewable Energy Laboratory, 2018, [bit.ly/3XuUdVJ](https://bit.ly/3XuUdVJ)
2. The Brattle Group, 2019, [bit.ly/3XqD5QT](https://bit.ly/3XqD5QT)
3. Waite and Modi, 2019, [bit.ly/3JAF12h](https://bit.ly/3JAF12h)
4. Baseline data for residential buildings; graphic assumes equivalent commercial heat pump penetration. US Energy Information Administration, 2020, [bit.ly/44A8GT6](https://bit.ly/44A8GT6)
5. Northwest Power and Conservation Council, 2019, [bit.ly/3PBU1SG](https://bit.ly/3PBU1SG)