



Toward Net Zero Emissions from Oregon Buildings

Summary and Recommendations for Policymakers

Overview

Oregon has committed to reducing its greenhouse gas emissions at least 25 percent below 1990 emissions levels by 2035, and at least 80 percent below 1990 emissions levels by 2050. To achieve this, the state will have to substantially cut emissions from its residential and commercial buildings, which currently account for about 35 percent of the state's carbon dioxide emissions. Electric heat pumps – highly-efficient appliances that provide both heating and cooling – will play a critical role in this transition.

In the Toward Net Zero Emissions from Oregon Buildings study – led by Synapse Energy Economics – a team of researchers showed that **a rapid transition to 100% high-efficiency electric heat pumps for heating and cooling in Oregon homes and commercial buildings would generate immediate household utility bill savings and \$1.1 billion in system-wide savings by 2050, all while slashing emissions.**

Grid benefits: The study's findings add to a growing body of evidence that heat pumps can play a key role in adding new cooling to Oregon homes without overloading the electricity grid. Despite the rapid pace of the transition, the report found that total electricity demand from homes and buildings would increase just 13% by 2050.

Climate benefits: The report finds that achieving 100% zero-emission appliance sales in Oregon by 2025 would cut climate pollution from residential homes 56% by 2035 compared to 1990s levels and just shy of 100% by 2050. A 2030 implementation date would cut climate pollution 47% by 2035, while achieving similar 2050 reductions. These reductions in climate pollution come from the transition away from gas heating appliances – which are a major source of carbon emissions and air pollutants.

Economic benefits: The report modeled the impact on energy bills from the transition to highly-efficient electric heat pumps in two Oregon cities; Portland and Bend. In Portland, the report found that households that electrify will save \$161 annually on energy bills compared to homes that burn gas, and in Bend, the report projected \$192 in annual savings. Under a 2025 implementation date for a zero-emissions sales standard for appliances, the report projects that electrification begins reducing total system costs beginning in 2030, and achieves annual cost

savings of roughly \$280 million by 2050. Total system-wide savings for the scenario are expected to reach \$1.1 billion through 2050. Under a 2030 implementation date, the report projects that building electrification begins to save system costs from 2023, and cost savings reach \$290 million in the year 2050.

Overall, the analysis of the two building electrification scenarios found that switching to efficient electric appliances would be effective in meeting Oregon's emissions reductions goals and could bring substantial net benefits for consumers in Oregon. In addition, the payback analysis of electrification measures found that electrification at the time of equipment replacement could be economically beneficial for residential customers under many conditions.

Policy Recommendations

1. **Lock in ambitious emissions-reduction targets in the buildings sector for both new and existing construction.** By requiring new construction, major retrofits, and large commercial buildings to achieve greenhouse gas emissions reductions, the state can ensure widespread adoption of electric heat pumps while maintaining flexibility.
2. **Incentivize widespread, affordable heat pump adoption.** Public dollars that are currently used to subsidize fossil fuel system expansion (e.g., gas line extension allowances) should be pivoted to support a transition to affordable electric heat pump appliances and installation. Programs such as the Emergency Heat Relief Fund should be expanded and financially supported to ensure low-income households are able to adopt life-saving cooling systems as quickly as possible.
3. **Reform existing efficiency programs and public services to remove barriers to customer choice.** Currently, low- and moderate-income homeowners and renters who rely on methane gas appliances face barriers to switching to electric appliances at the point of replacement. This is true for both the Energy Trust of Oregon and Oregon Housing and Community Services efficiency programs. These barriers should be removed so that home and building owners and renters *can choose* to use efficiency funds to swap out gas appliances for more efficient electric appliances.
4. **Support family-wage job creation in building efficiency and electrification.** As we invest in transitioning homes and buildings to run on high efficiency heat pumps, it is critical that we are taking measures to develop Oregon's workforce through strategic investments, while ensuring that public dollars spent on home retrofits and appliance installation are supporting family wages and offering community bargaining agreements.
5. **Direct state agencies including the Oregon Public Utility Commission and Building Codes Division to include climate and public health considerations in their decision making.** Some agency staff feel that there is not the flexibility in their mandate to consider climate risks, public health risks, or other related costs or benefits in their accounting and rulemaking. It is critical that these agencies are directed to consider these factors in decision making to avoid unnecessary and dangerous harms of fossil fuel use and the climate crisis. This will also help drive adoption of electric heat pumps, which emit minimal pollution relative to gas appliances.