

Zero Energy Homes and Buildings Pathway to Reducing Climate Pollution and Saving Money

We applaud the Governor's Executive Order that requires all new homes and buildings to be built to Zero Energy ready standards by 2030 (a.k.a. "net zero"). By putting Oregon's building codes onto a pathway to Zero Energy homes and buildings, our state can make major strides to increase energy efficiency, reduce greenhouse gas emissions, and save money on homeowners' and renters' energy bills.

Energy Saving. Zero Energy means that a home or building generates as much energy onsite as it uses over the course of a year. Under the Executive Order, Zero Energy building codes will require a 60% energy reduction in new buildings annual site consumption by 2030. In plain language, this means new buildings will be constructed from the ground up to maximize energy efficiency. That makes them ready to have the remaining energy use offset by on-site solar and other renewable energy.

Possible. Although this gives Oregon 10 more years to get to a full Zero Energy ready requirement, technical experts at Earth Advantage and New Buildings Institute confirm that these codes are both cost-effective and achievable today. This Zero Energy pathway is an established practice that has proven effective in other states, including Washington and California. It is popular with Oregonians and Oregon's cities also are getting on this path.¹ Portland, Eugene and Milwaukie have already committed to achieving Zero Energy homes and buildings by 2030 in their climate action plans, but have been held back by the statewide building code.

Affordable. Zero Energy buildings also benefit low income renters and building owners. Several affordable housing and low-income development projects have already been built at Zero Energy levels in Oregon.² Two examples are the Iron Horse in Prineville and Orchards at Orenco Station in Hillsboro. They have shown that Zero Energy buildings provide better quality living and cost less money for low income renters due to reduced energy bills. Dozens of homes also have been built to Zero Energy standards in Oregon and that number is growing.

Adopting these Zero Energy codes will help Oregonians make major strides towards achieving our climate goals. They also help prepare us to tackle the energy use of existing buildings by advancing technologies that can be used in both new and older homes and buildings.

¹ In a 2015 poll, by a margin of 77 percent to 24 percent, Oregonians overwhelmingly supported moving toward Zero Energy building codes.

² This means these Zero Energy low income housing developments are 10 years ahead of what the Zero Energy code will require by 2030, using today's technology.

By the numbers: Major climate and economic benefits of Zero Energy ready building codes

- **Significant Greenhouse Gas Reduction Benefits:** Adopting Zero Energy ready codes by 2030 code would achieve huge annual greenhouse gas reductions in Oregon – an estimated 2.4 million metric tons (MMT) per year by 2035, and 5.6 MMT by 2050.³ The latter is the equivalent of taking over 1 million cars off the road for a full year.
- **Huge Cost Savings:** Adopting Zero Energy ready codes would save Oregonians (both owners and renters) over \$1 billion PER YEAR on utility bills by 2050, as compared to the 2017 code.⁴
- **Cost of Ownership is Less from Day One:** Several studies have compared the cost of Zero Energy building to standard building codes and concluded that the added cost of financing a home or building built to Zero Energy ready standards is less per month than the energy savings from day one.⁵ This is true in both the commercial and residential context.
- **Lower Foreclosures:** A recent study found a direct correlation between homes with higher energy efficiency and lower foreclosure rates.⁶
- **Higher Resale Value:** Other studies have found that high efficiency and Zero Energy homes have a higher resale value than their comparable homes built to lower code standards.⁷
- **Benefits to Low Income Renters:** In the case of Iron Horse at Prineville, for example, renters don't pay any utility bills and the monthly cost per unit is substantially less than market rates in the Prineville area.

³ This is based on analysis from Earth Advantage and New Buildings Institute and assumes that 35% of the home and building stock for Oregon by 2050 does not exist today.

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⁵ See, e.g., <https://www.encyvermont.com/Media/Default/docs/white-papers/efficiency-vermont-net-zero-energy-feasibility-study-final-report-white-paper.pdf>. The 2015 study concluded that while the upfront cost of a Zero Energy home (based on cost per sq ft.) was slightly higher for both residential and commercial buildings, that the finance costs of ownership for both units was significantly lower from day 1 for Zero Energy ready (everything but the solar panels) and Zero Energy (with solar) buildings, both residential and commercial. This means that savings on monthly utility bills outweighs the added cost per month of paying off the mortgage/loan.

⁶ See, http://www.imt.org/uploads/resources/files/IMT_UNC_HomeEEMortgageRisksfinal.pdf. The paper was a collaboration between the University of North Carolina and The Institute for Market Transformation.

⁷ See, [https://www.wm.com/documents/pdfs-for-services-section/New%20and%20Remodeled%20Green%20Homes%20SMR%20\(2012\).pdf](https://www.wm.com/documents/pdfs-for-services-section/New%20and%20Remodeled%20Green%20Homes%20SMR%20(2012).pdf). The report found that for most high efficiency homes, buyers are willing to pay a 6% or higher premium for such homes.