



Agenda Item VII.C. testimony
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February 21, 2023

Mr. Nathan Kramer
Residential and Manufactured Structures Board
Building Codes Division
Oregon Department of Consumer and Business Services
1535 Edgewater Street, NW
Salem, OR 97304

Submitted Via Email

RE: Comments Supporting the Adoption of the 2021 International Energy Conservation Code in Oregon and Recommending Additional Amendments

Dear Mr. Kramer:

The American Chemistry Council (ACC) is writing in support of incorporating the 2021 International Energy Conservation Code (*IECC*) into the 2023 Oregon Residential Specialty Code (*ORSC*) along with two additional changes that will help Oregon maintain consistency with the *IECC*.

ACC member companies manufacture the raw materials for a myriad of industries, including products that help make buildings and homes more energy efficient. The business of chemistry provides nearly 11,000 direct and related jobs in Oregon. Chemistry plays a significant role in the advancement of building and construction technologies to make homes safer to live in while increasing the energy efficiency of homes and buildings to lower their environmental footprint.

Requiring the most up-to-date energy code for both residential homes and commercial buildings will *help reduce peak energy demand*. According to the U.S. Energy Information Administration, U.S. residential and commercial buildings account for approximately **40% of all energy consumed**.¹ Building energy codes, which govern up to **80% of a building's energy load**,² increase energy efficiency and yield significant savings for the U.S. economy.

In addition to being the lowest cost option for meeting energy demand, energy efficiency can significantly help to reduce building emissions. As Oregon considers ways to address ongoing air quality issues, it is vital that energy codes be part of that discussion. A recent study prepared for the U.S. Department of Energy (DOE) by the Pacific Northwest National Laboratory (PNNL) found that **updating to the 2021 *IECC* would cut greenhouse gas emissions in Oregon by 18,600 tons each year**.³

Residential studies show that **updating Oregon's energy code to the 2021 *IECC* provides significant energy and cost savings, as well as a reduction in greenhouse emissions**. The 2021 *IECC* will provide statewide energy savings of 5.1% across all climate zones compared to the current state energy code. This equates to \$79 of annual utility bill savings for the average Oregon household and an overall lifecycle cost savings of \$3543⁴.

¹ <http://www.eia.gov/forecasts/aeo/>

² <http://buildingsdatabook.eren.doe.gov/default.aspx>

³ https://www.energycodes.gov/sites/default/files/2021-07/OregonResidentialCostEffectiveness_2021_0.pdf

⁴ https://www.energycodes.gov/sites/default/files/2021-07/OregonResidentialCostEffectiveness_2021_0.pdf



Savings resulting from the up-front investment in energy efficient technology benefits the homebuyer monetarily from the moment they move into their home. Homeowners promptly recoup their investment as the realized savings on their energy bills quickly offsets any additional construction costs related to the installation of energy efficient products. According to the U.S. Energy Information Administration:

Across the United States, high utility bills are costing homeowners a significant portion of their monthly incomes. According to the most recent [EIA Residential Energy Consumption Survey](#)⁵, about one in five households reported reducing or forgoing basic necessities like food and medicine to pay an energy bill. Stronger energy codes and more widespread code compliance can help change the tide on this type of energy poverty. Improving compliance with residential energy codes opens up an array of economic and health benefits for homeowners, residents, local governments, and building officials, including:

- Reduced energy costs that yield monthly savings for owners and occupants, helping to boost the local economy and improving housing affordability by reducing utility costs.
- More comfortable and durable homes that better shield people from outdoor temperature extremes.
- Better protected occupant health from improved efficiency and indoor air quality.
- Greater market certainty for the building design and construction industry due to consistent implementation across jurisdictions.
- A level playing field for manufacturers, builders, and other building related industries.

We recognize that Oregon has historically adopted amendments to the *IECC* to meet state efficiency and carbon-reduction goals, and that some of these amendments provide additional savings beyond the *IECC*. Given Oregon's goal of achieving a residential energy code that meets or exceeds the U.S. DOE Zero Energy Ready Homes (*ZERH*) specifications by 2023⁶, the 2023 *ORSC* will likely need to go beyond the 2021 *IECC* in overall energy efficiency. The Inflation Reduction Act also includes an up to \$5,000 tax credit for homes certified to the *ZERH*.⁷ Version 2 of the *ZERH*, which goes into effect January 1, 2024, requires the building envelope of certified homes to meet or exceed the 2021 *IECC*. For these reasons, it is critically important that the 2023 *ORSC* meet or exceed the basic requirements of the 2021 *IECC*. We believe the draft 2023 *ORSC* falls short in a few areas that are key to meeting these requirements. **We recommend that Board adopt two key amendments prior to finalizing the code to help ensure more consistency between the *ORSC* and the *IECC*.**

Mandatory Envelope Leakage Testing

Since the 2012 edition, the *IECC* has required air leakage testing in all new homes. This requirement has been adopted and successfully implemented by most states that have adopted the 2012, 2015, 2018, and now the 2021 *IECC*. Both the *ZERH* and the Energy Star Homes⁸ program require blower door testing as well. Testing for air leakage is a critical, objective indicator of a home's performance, as well as an essential safety measure to maintain healthy indoor air by incorporating proper mechanical ventilation. Providing credit in the code for builders who choose to test homes will not provide the same level of consumer protection as a mandatory test. **We strongly recommend requiring mandatory air leakage testing at ≤ 3 ACH50 for all new homes.**

Insulation Improvements

The 2021 *IECC* incorporates improvements to the prescriptive thermal envelope that will yield benefits to homeowners for decades. Of note, wood frame walls are now required to be insulated to R-20+5 (U-0.045) or equivalent. While Oregon's requirements for insulating walls meet the 2018 *IECC* level of efficiency, **we recommend improving this**

⁵ <https://www.eia.gov/consumption/residential/>

⁶ See Executive Order No. 17-20, *Accelerating Efficiency in Oregon's Built Environment to Reduce Greenhouse Gas Emissions and Address Climate Change* (Nov. 6, 2017) (requiring Oregon to meet or exceed DOE Zero Energy Ready Homes standard by 2023).

⁷ See <https://www.energy.gov/eere/buildings/45l-tax-credits-zero-energy-ready-homes>.

⁸ See https://www.energystar.gov/ia/partners/downloads/ES_Combined_Path_v3.1.pdf.



requirement to R-20+5 (U-0.045) to maintain consistency with the 2021 *IECC* and Version 2 of the DOE ZERH⁹. Wall insulation provides comfort and energy savings benefits to occupants and is most cost-effectively installed during initial construction. We also note that Table N1101.1(1) sets a flat ceiling U-factor requirement that meets or exceeds the 2021 *IECC* requirement; however, the equivalent R-value of R-49 (standard framing) does not appear to be consistent with that U-factor. **We recommend either increasing the R-value to R-60 standard framing or R-49 advanced framing.**

For the reasons outlined above, we urge you to support the adoption of the 2021 *IECC* with the proposed changes. Thank you in advance for considering our views. If you have any questions, please do not hesitate to contact me at 916-448-2581 or via email at tim_shestek@americanchemistry.com. You may also contact ACC's Oregon based representative Matt Markee at 503-378-0412 or via email at matt@markee.org.

⁹ The DOE Zero Energy Ready Homes Program Version 2 includes a minimum envelope backstop that requires compliance with the 2021 *IECC* after a phase-in period. While this version of the program does not go into effect until 1/1/2024, it forms the basis for a \$5,000 tax credit under the Inflation Reduction Act. See <https://www.energy.gov/eere/buildings/45l-tax-credits-zero-energy-ready-homes>.

