



Member Organizations

American Institute of Architects Seattle
American Institute of Architects Washington Council
A&R Solar
Balderston Associates, LLC
Built Green
Climate Solutions
Ecotope
Emerald Cities Seattle
Housing Development Consortium of Seattle-King County
ILFI South Sound Collaborative
International Living Future Institute
New Buildings Institute
Nicholson Kovalchick (NK) Architects
Northwest EcoBuilding Guild
Northwest Energy Efficiency Council
Northwest Renewables
NW Energy Coalition
O'Brien360
Optimum Building Consultants, LLC
Passive House Institute of the United States
Passive House Northwest
PAE Engineers
Seattle 2030 District
South Seattle Climate Action Network
Solar Washington
Sustainable Connections
Washington Environmental Council
2050 Institute
350 Seattle
350 Spokane
475 High Performance Building Supply
www.shiftzero.org

To: Washington State Building Code Council
From: Shift Zero, Roadmap to a Zero Net Energy Building Code Task Force
Date: September 27, 2019
Re: Shift Zero Comments Supporting 2018 WSEC-Res Proposed Amendments

Dear Chair Orth and the Washington State Building Code Council:

Shift Zero is an alliance of over 30 green building, energy efficiency, and climate action organizations and businesses that have come together to support policies and programs that advance a zero net-carbon built environment for all communities in Washington State. Our members are experienced in designing and constructing high-efficiency buildings, researching technologies, and evaluating codes, policies, and programs. With that expertise, we advocate for buildings to first be as efficient as possible, then to provide on-site renewable energy as practical, and finally, to have any remaining energy needs met by off-site renewables.

Shift Zero would like to confirm our support for the proposed amendments to the 2018 Washington State Energy Code - Residential. We also strongly urge the Council to adjust the R406 option table credits to align with the recommended credit values submitted by the Department of Commerce on September 27, 2019. The final carbon emission credit values should reflect the due diligence reconciliation of the individual R406 proposals which were revised throughout the Energy Code TAG process, and then integrated into the CR-102. The increase in credit values will reduce the number of options needed to meet the total number of credits required for each home, thereby significantly reducing the costs and overall impact of the new code on builders and homeowners.

Shift Zero is committed to ensuring high-performing, affordable homes for all Washingtonians. The least first costs and life cycle costs for the proposed 2018 WSEC-Res are in line with the implied roadmap steps required to reach the 2031 goals. The least first costs packages of options for meeting the R406 credits will deliver homes for an estimated incremental cost above the 2015 code of less than \$2.00 per square foot for nearly all prototype scenarios. When the adjusted credits are used, the incremental costs reduce to less than \$1.00 per square foot for more than half of these. In most cases the packages of least cost options for the scenarios consist of space and water heating upgrades up to the next level of efficiency from the base case, as well as standard measures such as ducts inside, high efficiency appliances, and somewhat tighter and better insulated shells. Nearly all of the code changes are to the option table, meaning that relatively few new mandatory measures are required. Builders can choose between various options and the

credits required are not high enough to require advanced enclosures or very high efficiency heat pumps. This gives us time to work collectively between now and the next code cycle to prepare the market for potentially more complex designs in subsequent codes.

Homes built to the proposed 2018 residential code will be significantly more affordable over the life of the homes. For example, the net present value of the scenarios with adjusted credits range from \$805 to nearly \$7,000. We need to capture this value for homeowners and tenants in Washington State. As an example of the magnitude of these life cycle cost savings in aggregate, if the average net present value for a home is even as small as \$2,000, and 25,000 units are built per year, the total population of new homes in that year will deliver approximately \$50,000,000 in value over the life of those homes. This is money can be spent in other areas of people's lives and the Washington State economy rather than paying for wasted energy. The CR-102 proposed rulemaking, with recommended credit value adjustments, is a rationale policy decision for the 2018 code cycle and will maintaining progress toward a 70% energy reduction by 2031.

In addition to our support for the proposed residential code changes, Shift Zero would also like to highlight the significant market transformation and capacity building infrastructure in Washington State and the Northwest. A vast network of agencies and organizations such as the Northwest Energy Efficiency Alliance (NEEA), the State Building Code Council, the Department of Commerce, Washington State University Energy Extension, county and municipal governments, code officials, manufacturers/distributors, housing alliances, advocacy organizations, home builders, architects, mechanical contractors, utilities, green building certification organizations, etc. are stakeholders and partners in delivering successful energy code outcomes. The code alone cannot ensure successful outcomes. We also need and have a good foundation for:

- Enforcement and compliance training
- Above code utility programs and certifications to provide design resources and verification support
- Extensive research on heat pumps, advanced envelopes, and other technologies
- Upstream coordination with manufacturers

This infrastructure and network are well positioned to support the rollout of the 2018 WSEC-Res in 2020, but we can work together to significantly increase the scale of support and coordination. Shift Zero sees passage of the 2018 energy code as the springboard for this collaboration. Some important areas for this work may include advocating for increased funding to support the transition for builders, reducing costs for advanced envelope and heat pump technologies, and ensuring the real estate and lending markets adapt to broadly incorporate the value of energy efficiency improvements into appraisals and loan eligibility. Ensuring the market recognizes and internalizes the value of the cycle-by-cycle efficiency upgrades in the energy code, will help offset incremental costs for the 2018 and future codes.

Shift Zero appreciates this opportunity to provide testimony in support of the 2018 WSEC-Res and to confirm our commitment to developing the common ground and collaboration necessary to meet the 2031 efficiency targets for new homes in Washington State.

Sincerely,

Poppy Storm
Chair of Shift Zero's Code Roadmap Taskforce