Roadmap to Resilient, Ultra-Low Energy Buildings in the Pacific Northwest

Promoting energy efficiency and integrated renewable energy across sectors for the economic health of the region

The Ramona Building--a low-income apartment complex in Portland, Oregon--met the Architecture 2030 Challenge.

The Northwest:

A Net-Zero Leader

The Pacific NorthWest Economic Region (PNWER), a statutory non-profit public/private partnership composed of Alaska, Idaho, Montana, Oregon, and Washington in the U.S. and Alberta, British Columbia, Saskatchewan, and the Yukon and Northwest Territories in Canada. PNWER works to increase the economic well being of our region while maintaining the natural environment.

Roadmap Features

The "Roadmap to Resilient, Ultra-Low Energy Buildings in the Pacific Northwest" is designed to improve resilient and energy efficient residential, commercial, public sector and industrial buildings across the region. The Roadmap is guided by three strategies:

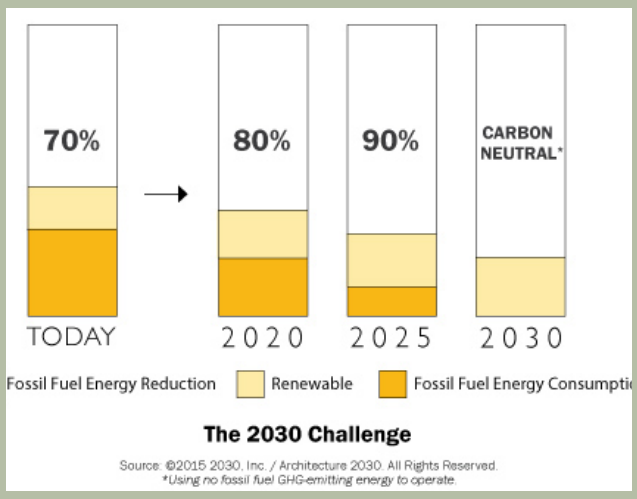
1. Facilitate the achievement of Net-Zero or ultra-low emissions and energy use for new buildings by 2030 and encourage reduction of energy use and emissions of existing buildings.
2. Focus on collaborative measures with all levels of government and the private sector.
3. Develop policies and tools appropriate for each jurisdiction.

To address this mission, the Roadmap will include:

- Market-driven solutions
- Policy best practices: education, leadership, program and regulatory options
- Proposed targets, timeline, and milestones
- Estimated costs and benefits including job creation
- Roles and responsibilities of team members
- Risk identification and management
- Measurement, evaluation and reporting

Why Net-Zero?

Benefits for the economy, society and the environment



Increases resilience

Endures extreme weather events and natural hazards through seismic and functional upgrades. Reduces dependency on aging infrastructure.

Promotes job creation

Spurs new jobs in trades, manufacturing, professional services, information technology and financing sectors.

Increases affordability and value of buildings

Reduces energy costs for consumers. Improves comfort, health, and aesthetics.

Contributors

British Columbia Ministry of Energy and Mines
Construction Center of Excellence
Energy Trust of Oregon
Insulating Concrete Forms Manufacturers Association
FortisBC
RDH Building Science

Map of Case Studies

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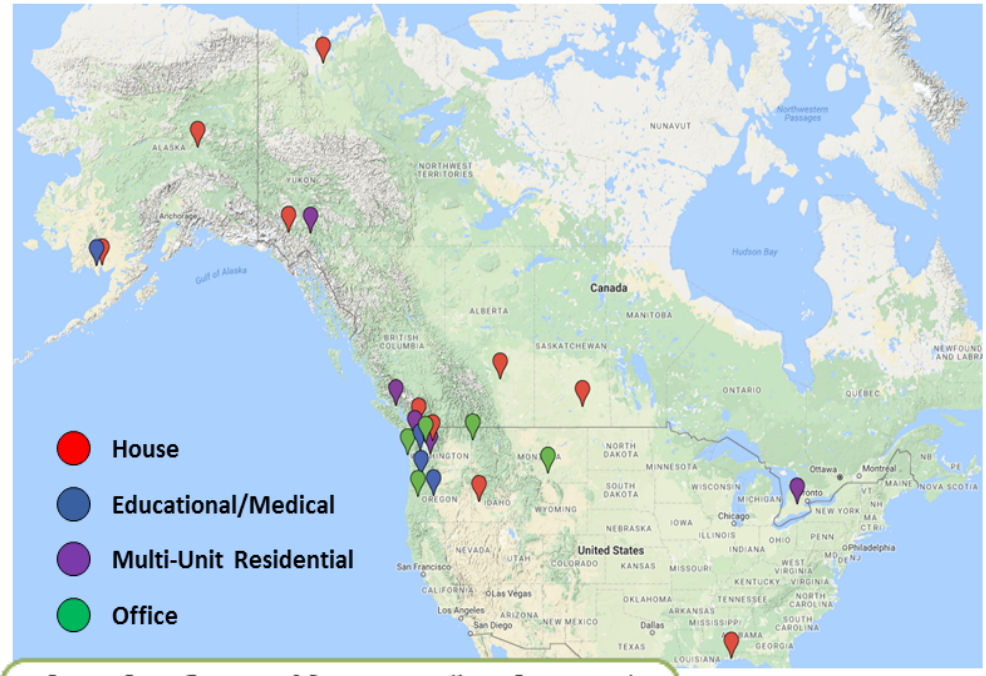

Ultra-low energy buildings help us understand how to achieve energy efficiency in the built environment

The 23 case studies of new and retrofit buildings have demonstrated measured average energy savings of:

Houses – 64 %
Educational/Medical – 76 %
Multi-Unit Residential – 50 %
Offices – 84 %

Average greenhouse gas emission reductions across all buildings is 70%

RDH BUILDING SCIENCE

Stage One: Prepare 20+ case studies of new and existing "archetype" buildings across multiple sectors. Selected buildings have achieved high performance on energy efficiency, greenhouse gas emissions reductions, and climate change adaptation. Release report at 2016 Economic Leadership Forum.

Extrapolate the benefits of the case studies to the entire Pacific Northwest region, assuming alignments with appropriate targets for all new construction and a large proportion of existing buildings after the year 2030.

Summarize policy and market measures that could support achievement of those targets and benefits.

Prepare a "White Paper" including technology and high–level policy options for meeting the targets by 2030. Paper based on best practices and forecasted environmental and economic benefits.

Present results at PNWER Annual Summit in Spokane, Washington in July 2018.

Stage Two: Consult "Net Zero Energy Networks" of key stakeholders and influencers in each jurisdiction on specific White Paper results and next steps.

Stage Three: Undertake broader stakeholder consultations in each jurisdiction with the goal of Roadmap adoption and development of new policy and market initiatives.

PNWER Net-Zero Network

PNWER is establishing a network of key influencers, chaired by a legislative and a private sector lead in each jurisdiction, to help identify and develop the best strategies appropriate for their jurisdictions. The network members will provide input on the Roadmap, procure technical information, share their expertise and coordinate outreach efforts.

Key influencers come from a variety of backgrounds and may include:

- State/provincial/territorial governments
- Construction industry associations
- Professional associations
- Net-Zero developers/builders/contractors
- Energy efficiency agencies
- Financial sector
- Technology providers
- Building operators
- Academic institutions
- Public utilities
- Public interest organizations

Legislative Support

As a respected non-partisan regional organization, PNWER has been able to garner support for creating the largest unified region of Net-Zero buildings. The PNWER executive committee endorsed the Roadmap, with support from voting members, including:

Sen. Arnie Roblan,PNWER President, Oregon
Colin Smith, Private Sector Co-chair, APEGBC
Rep. Deb Boone, Oregon
Rep. Chuck Winder, Idaho
Larry Doke, MLA, Saskatchewan
Robyn Luff, MLA, Alberta
Rep. Gael Tarleton, Washington
Sen. John Coghill, Alaska
Sen. Maralyn Chase, Washington
Rep. Mike Cuffe, Montana
Hon. Stacey Hassard, Yukon

Retrofitted Belmont Apartment Building in Vancouver, B.C.

Contributors

Creating this Roadmap requires the investment of contributors interested in developing a guide for policymakers and private sector investment for the coming decade. Sponsors provide valuable perspectives to the Energy and Environment Working Group.

Benefits:

- Increase visibility among energy efficiency professionals, advocacy organizations, and businesses.
- Logo placement on the PNWER website and all Roadmap documents including the White Paper.
- Receive key information on energy efficiency sector including current and future state of the market.
- Recognition as PNWER Supporters of the 29th Annual Summit in Saskatoon, Saskatchewan in July 2019. Reach an audience of 600 regional legislators and business leaders. Benefits include digital and print recognition, complimentary registration, and an exhibitor booth.

For more information:
www.pnwer.org/energy-and-environment

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