

Summary of 2015 Seattle Energy Code Proposal

Seattle Energy Use Reduction Targets

As a national leader in energy conservation, Seattle has set ambitious targets for reducing building energy use. These include:

- City Council Resolution 30280: Maintain Seattle’s energy code 20% better than ASHRAE 90.1
- Seattle Comprehensive Plan: Reduction in overall (new + existing) building energy use:
 - Commercial 5% reduction by 2020, 10% by 2030
 - Residential 8% reduction by 2020, 20% by 2030
- Carbon neutral city by 2050
- Seattle Climate Action Plan: “Take Bold Action”

The first target, to maintain the Seattle Energy Code at a level 20 percent below the current edition of ASHRAE 90.1, may be achieved with the adoption of the 2015 Seattle Energy Code. The 2015 State code appears to exceed ASHRAE’s 2013 efficiency level by several percent, and estimates indicate that Seattle’s 2015 proposed Energy Code will result in buildings that use considerably less energy than the 2015 State code. A more precise estimate of energy savings beyond the national standard would require an analysis by a specialized consultant. It is important to note that legislation and resolutions in Seattle and Washington State mandate energy codes that provide significantly greater energy efficiency than those of nearly all other cities and states across the country.

Code Update Process

Seattle updates construction codes every three years, following the publication of model codes by the International Code Council (ICC) and subsequent amendments by the Washington State Building Code Council (SBCC). The SBCC accepted several of Seattle’s Energy Code concepts into the 2015 State Energy Code. In recognition of this, the proposed 2015 Seattle Energy Code eliminates those original Seattle-specific amendments that are now in the state code as they are no longer needed. The remaining Seattle-specific amendments from the 2012 Seattle Energy Code have been transferred into the proposed 2015 Seattle Energy Code, thus continuing the energy savings already achieved by the 2012 code. In addition, several significant new Seattle amendments were introduced during public meetings in January 2016. These were extensively modified as a result of public comments. More than 50 stakeholders contributed their time and expertise to the review process.

2015 Seattle Energy Code Recommendations – Summary of Significant Proposals

Most amendments made to the commercial portions of the 2015 Seattle Energy Code clarify the code intent or correct errors in the model code language. These amendments are in addition to a number of substantive efficiency improvements already incorporated into the 2015 State code. The following summarize a few of the most significant changes that were each intended to move Seattle’s new and existing buildings closer to the energy use reductions targeted in the Comprehensive Plan and Climate Action Plan.

1. **C402.4 High-Performance Heating.** This provision mandates a choice between very high-quality fenestration or high-performance heating systems. The intention is to take a

significant step towards Seattle's 2050 carbon-neutral goal by installing efficient electric heat pump and variable refrigerant flow heating systems instead of the comparatively inefficient electric resistance and fossil fuel heating that have typically been installed in commercial buildings to date. The effective date of this code change is delayed until January 1, 2018 in order to allow projects already in the pipeline to be completed without major changes.

2. **C402.5 Air leakage testing standard.** Virtually all new buildings in Washington State are required to confirm the integrity of the air barrier in their building envelopes with pressure testing. The air leakage test standard for Seattle has been reduced from 0.40 to 0.30 cfm/sf, a target that the builders and testing consultants at the public meetings felt was now achievable.
3. **Table C405.4.2 Interior lighting power allowance.** The 2015 State code reduces allowable lighting power by 20 percent across the board, in recognition of the increasing efficiency and rapidly declining cost of LED lighting technology. The Seattle code then reduces that target by an additional 10 percent effective January 1, 2018.
4. **C407.2.1 Limits on excessive glazing area.** This provision requires new buildings with glazing areas greater than 45 percent of wall area to meet a progressively more stringent building energy use standard for each additional percent of glazing. This still allows design flexibility, but mandates that highly-glazed buildings be even more efficient than standard buildings in recognition of the fact that the building envelope materials are virtually permanent, and seldom replaced while other building energy systems such as lighting and HVAC are periodically replaced with more efficient systems.
5. **C412 Solar-ready roof.** Washington State has adopted the existing Seattle code requirement for a large portion of non-residential roofs (not including any roof areas used for skylights, decks or plantings) to be prepared for future installation of solar panels, and the electrical service configured to allow convenient installation of future panels and metering. This will speed the development of rooftop solar energy in Seattle by minimizing future installation costs. The 2015 Seattle code extends this requirement to non-residential buildings up to 20 stories in height in lieu of the 5-story maximum in the State code.
6. **C503.4.6 High-performance heating for major building upgrades.** In keeping with the new Seattle requirements for high-performance heating in new construction, those existing buildings undergoing "substantial alterations" as defined in the code and other buildings replacing heating systems (other than replacement of a single furnace or boiler) are also required to provide high-performance heating systems or fenestration. This will gradually improve the energy efficiency of Seattle's building stock as buildings undergo major upgrades.

Public Outreach

Eight public meetings, typically two to three hours long, were held during the winter and spring of 2016 to discuss the new amendments, with each meeting attended by 20 to 40 stakeholders. Building owners and managers, utility representatives, engineers, architects and energy consultants participated. Each of the significant proposals discussed was substantially altered as a result of the comments and critiques offered at these meetings and outside of the meetings via email and phone calls. The meeting announcements, code change proposals and subsequent revisions were posted on the SDCI Energy Code web site, and distributed to 120 individuals on the energy code email list. The meeting dates were as follows:

- January 29
- February 4
- February 12
- February 19
- March 14
- June 9
- June 16
- June 24

The energy code changes were presented to the Construction Codes Advisory Board (CCAB) during regularly scheduled meetings in winter and spring 2016. Those meeting dates were as follows:

- February 18
- March 3
- March 17
- June 2
- July 7

Formal approval for the revised code, including modifications identified during the public and board review processes occurred at the July 7 meeting.

Energy code presentations have been provided for a number of stakeholder organizations during the past year. Numerous members of these organizations then participated in the code development process:

- November 12 – Construction Specifications Institute
- December 3 – Electric League of the Pacific Northwest
- December 4 – AIA Getting to Zero Forum
- December 18 – AIA 2030 Roundtable
- January 13 – ASHRAE Puget Sound Chapter meeting
- March 23 – DOE Energy Codes Conference
- March 30 – Go Green Conference
- April 14 – UW Law School
- May 25 – West Coast Energy Management Congress
- June 17 – AIA 2015 Energy Code Seminar
- July 21 – Seattle City Light staff presentation
- July 21 – International Facility Management Association