



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

May 2018

Log No. 19-WSEC-R33
TAG Revision 5/31/19

Code being amended: Commercial Provisions Residential Provisions

Code Section # R404

Brief Description:

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

Add new text as Follows:

R404.2 (IRC N1104.2) Electric readiness (Mandatory) Systems using gas or propane water heaters or; ~~dryers, or conventional cooking equipment~~ to serve individual dwelling units shall comply with the requirements of Sections R404.2.1 and R404.2.2. All water heating systems shall comply with Section R404.2.3.

R404.2.1 (IRC N1104.2.1) Receptacle. A dedicated 125-volt, 20-amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, shall be provided within 3 feet from each gas or propane water heater, or dryer; ~~and conventional cooking equipment~~, accessible with no obstructions.

R404.2.2 (IRC N1104.2.2) Electrification-ready circuits. Both ends of the unused conductors shall be labeled with the word "SPARE" and be electrically isolated. A single pole circuit breaker space shall be reserved in the electrical panel adjacent to each circuit breaker for the branch circuit and labeled with the words "FUTURE 240V USE."

R404.2.3 (IRC N1104.2.3) Water heater space. An indoor space that is at least 3 feet by 3 feet by 7 feet high shall be available within 3 feet of the water heater or including the space occupied by the current water heater.

Exception: The water heater space requirement does not need to be met where a heat pump water heater is installed.

Purpose of code change:

This proposal enhances customer choice by making it easy for homeowners to choose either electric or gas appliances and water heating equipment. By ensuring that a home built with gas or propane can easily accommodate future electric appliances and equipment, this proposal protects homeowners from future costs, should natural gas become less affordable or even unavailable over the life of the building.

As the electric grid becomes cleaner, and high-efficiency electric heat pump technology increasingly offers utility bill and pollution reduction benefits over gas, more customers may choose electric space and water heating. Federal, state, and local environmental and public health policies may also encourage, or even require the transition in some areas over the life of the building. Electric-ready requirements will protect customers from potential high retrofit costs.

Your amendment must meet one of the following criteria. Select at least one:

- | | |
|--|---|
| <input type="checkbox"/> Addresses a critical life/safety need. | <input type="checkbox"/> Consistency with state or federal regulations. |
| <input type="checkbox"/> The amendment clarifies the intent or application of the code. | <input type="checkbox"/> Addresses a unique character of the state. |
| <input checked="" type="checkbox"/> Addresses a specific state policy or statute.
(Note that energy conservation is a state policy) | <input type="checkbox"/> Corrects errors and omissions. |

Check the building types that would be impacted by your code change:

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Single family/duplex/townhome | <input type="checkbox"/> Multi-family 4 + stories | <input type="checkbox"/> Institutional |
| <input checked="" type="checkbox"/> Multi-family 1 – 3 stories | <input type="checkbox"/> Commercial / Retail | <input type="checkbox"/> Industrial |

Your name	Poppy Storm	Email address	poppy.storm@2050-institute.org
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Economic Impact Data Sheet

Briefly summarize your proposal’s primary economic impacts and benefits to building owners, tenants and businesses.

The cost of meeting these electric-ready requirements when the house is being built, walls are open, and the trades are already on-site, is marginal. In comparison, the cost of retrofitting a building for these requirements can be orders of magnitude higher and act as a barrier for the homeowner to choose electric appliances. Not making new buildings electric-ready would leave homeowners exposed to potentially high retrofit costs in the future and will greatly inhibit customer choice.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$.08/square foot (For residential projects, also provide \$170/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

The cost estimate for including a dedicated 125-volt, 20-amp electrical receptacle connected to the electrical panel was sourced from similar estimates for dedicated circuits in a California Air Resources Board (CARB) report. The report included a detailed technical and fiscal impact analysis along with suggested code changes for electric vehicle charging infrastructure in multifamily homes. The report estimated (using standard construction cost estimating details from R. S. Means and input from electricians) a total cost of \$280. The estimate included a circuit breaker that would not be required by this code. Therefore, we have reduced the cost to \$170 for the requirements of this code change proposal.

ELECTRIC VEHICLE (EV) CHARGING INFRASTRUCTURE: MULTIFAMILY BUILDING STANDARDS.

Report. April 2018. Accessed April 2019. <https://arb.ca.gov/cc/greenbuildings/pdf/tcac2018.pdf>.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

0 KWH/ square foot (or) 0 KBTU/ square foot

(For residential projects, also provide 0 KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

This proposal is intended to deliver electric ready homes and provide for higher performing homes in the future. Therefore, there are no immediate savings.

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

No significant additional code enforcement time is estimated.

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.