



STATE OF WASHINGTON
STATE BUILDING CODE COUNCIL

Washington State Energy Code Development
Standard Energy Code Proposal Form

Jan 2025

Log No. 24-GP1-277 Vers. 3

Received 5/1/25

Code being amended: ☒ Commercial Provisions ☐ Residential Provisions

Code Section # _C404.2.1_____

Brief Description: Clarifies some SWH system type exceptions and adds more exceptions

Proposed code change text:

C404.2.1 Service water heating system type. Service hot water shall be provided by an electric air-source heat pump water heating (HPWH) system, or a ground-source heat pump water heating (GSHP) system, meeting the requirements of this section. Supplemental service water heating equipment is permitted to use electric resistance or fossil fuel in compliance with Section C404.2.1.4.

Exceptions:

1. 24 kW plus 0.1 watts per square foot of building area of electric resistance service or fossil fuel water heating capacity is allowed per building. Where a building includes multiple tenants, the 24 kW allowance is permitted to be prorated according to the percentage of the total conditioned floor area occupied by each tenant, with a minimum of 6 kW permitted for each separately leased tenant space.
2. Solar thermal, wastewater heat recovery, other *approved* waste heat recovery, ((ground source heat pumps)), water-source heat pump systems utilizing waste heat, and combinations thereof, are permitted to offset all or any portion of the required HPWH capacity where such systems comply with this code and the *Uniform Plumbing Code*, and are not claimed in Section C406.2.5, C407, or C411.
3. Systems that comply with the Northwest Energy Efficiency Alliance (NEEA) Commercial Electric Advanced Water Heating Specification (<http://www.neea.org>).
4. Service hot water systems served by a district energy system that serves multiple buildings and that was in service before the effective date of this code, including more energy-efficient upgrades to such existing systems, are permitted to serve as the primary heating energy source.
5. Commercial dishwashers, commercial food service equipment, and other *approved* process equipment are permitted to utilize electric or fossil fuel booster heaters for supply water temperatures 120°F (49°C) or higher.
6. Systems connected to a *low-carbon district energy exchange system* or a *low-carbon district heating and cooling or heating only system*.
- ~~7. Essential facilities. Groups I-2 and I-3 occupancies that by regulation are required to have in place redundant emergency backup systems are permitted to use electric resistance or fossil fuel combustion equipment for those emergency backup systems.~~

- 8-7. Point of use instantaneous ~~electric~~ water heaters, serving fixtures no more than 8 feet of developed pipe length from the water heater, are permitted and do not contribute to the building combined water heating capacity calculation.
- 9-8. For other than Group R and Group I occupancies, unitary electric air-source heat pump water heaters are permitted to extract heat from the conditioned space where the primary source of space heating is electric heat pump or where heat recovery of waste heat is available, and where they are sized to meet all calculated service water heating demand using the heat pump compressor, and not supplementary heat. For the purposes of this exception, “heat recovery of waste heat” is permitted to utilize heat from commercial cooking appliances, freezers, refrigerators, electronic equipment, machine rooms, and other internal heat sources with sufficient magnitude and consistency to provide the majority of the heat energy required by operation of the heat pump water heater.
- 10-9. Standby service water heating equipment provided ~~in addition to the primary~~ as a redundant backup heating system, and controlled such that it will only be used when the primary heating equipment is not available, is permitted to be electric resistance ~~or fossil fuel~~.

Purpose of code change: Clarify exceptions and provide additional energy-efficient exceptions to allow greater flexibility

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 checked="" type="checkbox"/> The amendment clarifies the intent or application of the code. | <input type="checkbox"/> Addresses a unique character of the state. |
| <input 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 type="checkbox"/> Single family/duplex/townhome | <input type="checkbox"/> Multi-family 4 + stories | <input checked="" type="checkbox"/> Institutional |
| <input type="checkbox"/> Multi-family 1 – 3 stories | <input checked="" type="checkbox"/> Commercial / Retail | <input checked="" type="checkbox"/> Industrial |

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Your organization Seattle Department of Construction and Inspections

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Economic Impact Data Sheet

Is there an economic impact: ☒ Yes ☐ No

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants, and businesses. If you answered "No" above, explain your reasoning.

Modest construction cost reductions for certain buildings.

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](#)**)

Slight *decrease* in construction cost due to additional options available for builders

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

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

No change in kWh: The additional options do not increase or decrease energy use

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

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

Reduction in enforcement time, due to clarification of certain situations.

Small Business Impact. Describe economic impacts to small businesses:

None

Housing Affordability. Describe economic impacts on housing affordability:

None

Other. Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed:

Instructions: Send this form as an email attachment, along with any other documentation available, to: sbcc@des.wa.gov. For further information, call the State Building Code Council at 360-407-9255.

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