

## Proposed Amendment to 187/C411.1

From Kevin Charap/Markus Virta:

- Proposed Modification 1: Only permit buildings lacking sufficient roof space to utilize proposed exceptions 4 and 5 (allowing transfer to affordable housing or to a state agency), by making them sub-categories c and d of exception 2
- Proposed Modification 2: Increase payment amount for the option to pay to a state agency from a flat \$2.50/W to a table of values based on size of the array.
- Proposed Modification 3: Adjust roof slope to 8:12.

Proposed code change text:

**C411.1 On-site renewable energy systems.** Each new *building or addition* shall be provided with on-site renewable electricity generation systems with a direct current (DC) nameplate power rating of not less than **0.75** watts per square foot (8.1 W/m<sup>2</sup>) multiplied by the sum of the gross *conditioned floor area* of all floors.

**Exceptions:** ~~((The following *buildings, additions or building sites* shall comply with Section C411.2:~~

- ~~1. Any building or addition where more than 50 percent of the roof area is shaded from direct beam sunlight by natural objects or by structures that are not part of the building for more than 2500 annual hours between 8:00 a.m. and 4:00 p.m.~~
- ~~1.2. A building or addition where more than 80 percent of the roof area is covered by any combination of permanent obstructions such as, but not limited to, mechanical equipment, vegetated space, access pathways or occupied roof terrace.~~
- ~~3. Buildings or additions which can document they do not have adequate roof area to install the required on-site solar and that comply with Section C411.1.1 may install a lesser amount of on-site renewables but not zero.))~~
1. A building or addition with gross conditioned floor area less than 5,000 square feet (465 m<sup>2</sup>).
2. Where a building's net roof area is not large enough to accommodate the entire on-site renewable energy generation system required by this section, the portion of that system that cannot be accommodated within the net roof area is permitted to be provided by one of the following options:
  - a. Additional efficiency credits in accordance with Section C411.1.1.
  - b. Off-site renewable energy in accordance with Section C411.2.1, including the requirements of Sections C411.2 and C411.2.2.
  - c. Transfer to an *affordable housing* project. Where an *affordable housing* project is available to accept the renewable energy system and where *approved by the code official*, all or part of the required on-site renewable energy generation system is permitted to be replaced by construction of a system that is 50 percent of the required system size when located on an existing *affordable housing* project within the state of Washington, or 75 percent of the required system size when located on a new construction *affordable housing* project within the state

of Washington. Documentation demonstrating that the renewable energy generation system has been installed on the *affordable housing* project site, the system is fully operational, and ownership has been transferred to the owner of the *affordable housing* project, must be submitted prior to issuance of the certificate of occupancy.

- d. Transfer to a Washington State agency program. Where approved by the *code official*, all or part of the required renewable energy generation system is permitted to be replaced by a contribution of ~~\$2.50 for each required watt of installed capacity~~, in the amount required by Table C411.1 to the solar energy fund for affordable housing of the Washington State Housing Finance Commission to provide solar energy installations for affordable housing projects. ([energy@wshfc.org](mailto:energy@wshfc.org).) Documentation demonstrating that the contribution has been received by the state agency must be submitted to the *code official* prior to issuance of the certificate of occupancy.

<b>Table C411.1</b> <b>Contribution amount required</b>	
Renewable energy system capacity required by Section C411.1	Contribution to State Agency
<del>&lt; 10 kW</del>	<del>\$6.00 / W</del>
10 kW – < 50 kW	\$4.00 / W
50 kW – < 200 kW	\$3.25 / W
> 200 kW	\$2.50 / W

For the purposes of this exception, the net roof area excludes the following:

- a. Areas shaded by existing natural or built objects in accordance with Exception 1 of Section C411.3.
  - b. Areas occupied by mechanical equipment, including adjacent equipment service areas required by the manufacturer or by applicable code.
  - c. Areas required by applicable codes to remain clear for egress, fire department access, or equipment access.
  - d. ~~Areas with slopes greater than 28:12.~~
  - e. Planted or vegetated areas.
  - f. Skylights.
  - g. Occupied roof decks.
3. Reduced Building Performance Factor. For projects utilizing the Section C407 Total Building Performance compliance path the on-site renewable energy generation system is not required where the building performance factor (BPF) is not less than 3 percent lower than the maximum BPF permitted cumulatively by all other sections of this code.
- 3.1. Where the BPF is not less than 1 percent lower than the BPF required cumulatively by other sections of this code, the size of the on-site renewable energy generation system required by this section is permitted to be reduced by 1/3.

- 3.2. Where the BPF is not less than 2 percent lower than the BPF required cumulatively by other sections of this code, the size of the on-site renewable energy generation system required by this section is permitted to be reduced by 2/3.

**Example:** To use this exception, a building with a required BPF of 50 would be required to provide a BPF of  $(50 \times 0.97 =) 48.5$  instead.

- ~~4. Transfer to an *affordable housing* project. Where an affordable housing project is available to accept the renewable energy system and where *approved* by the code official, all or part of the required on-site renewable energy generation system is permitted to be replaced by construction of a system that is 50 percent of the required system size when located on an existing *affordable housing* project within the state of Washington, or 75 percent of the required system size when located on a new construction *affordable housing* project within the state of Washington. Documentation demonstrating that the renewable energy generation system has been installed on the *affordable housing* project site, the system is fully operational, and ownership has been transferred to the owner of the *affordable housing* project, must be submitted prior to issuance of the certificate of occupancy.~~
- ~~5. Transfer to a Washington State agency program. Where approved by the code official, all or part of the required renewable energy generation system is permitted to be replaced by a contribution of \$2.50 for each required watt of installed capacity, to the solar energy fund for affordable housing of the Washington State Housing Finance Commission to provide solar energy installations for affordable housing projects. ([energy@wshfc.org](mailto:energy@wshfc.org).) Documentation demonstrating that the contribution has been received by the state agency must be submitted to the code official prior to issuance of the certificate of occupancy.~~
- Reduced Building Performance Factor. For projects utilizing the Section C407 Total Building Performance compliance path the on-site renewable energy generation system is not required where the building performance factor (BPF) is not less than 3 percent lower than the maximum BPF permitted cumulatively by all other sections of this code.

4. *Affordable housing.* The on-site renewable energy generation system is not required for *affordable housing* projects.

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**C411.1.1 Additional efficiency credits.** Buildings which qualify for ~~((one of the exceptions))~~ Exception 1 in Section C411.1 to omit installation of on-site renewable energy ~~((must))~~ are permitted to achieve ~~((an))~~ additional ~~((18))~~ efficiency package credits from Table C406.2(1) equal to five times the number of credits provided for compliance with the renewable energy measure detailed in Section C406.2.5, in lieu of installing the on-site renewable energy required by Section C411.1. The additional ~~((18))~~ credits ~~((can))~~ are permitted to be reduced based on a prorated fraction of renewable capacity that is installed on-site.

On-site renewable energy installations of lower than required capacity can be counted proportionally toward achievement of required or additional efficiency credits in Section C411.1.1 based on the capacity of renewable energy installed compared to the requirements of Section C411.1.

**AFFORDABLE HOUSING.** Affordable housing for the purposes of this code shall include buildings which; a) receive or have received public funding or an allocation of federal low-income housing tax credits; and b) are subject to a regulatory agreement, covenant, or other legal instrument

recorded on the property title, and enforceable by the local jurisdiction, Washington State Housing Finance Commission, State of Washington, U.S. Department of Housing and Urban Development, or other similar entity as *approved* by the *code official* that either:

1) Restricts at least 40 percent of the units to occupancy by households earning no greater than 60 percent of median income, and controls the rents that may be charged, for a minimum period of 40 years; or

2) Restricts initial and subsequent sales of at least 40 percent of the residential units to households with incomes no greater than 80 percent of median income, for a minimum period of 50 years. The sale price for sales subsequent to the initial sale shall be calculated to allow modest growth in homeowner equity while maintaining long-term affordability for future buyers.