



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

Jan 2022

Log No. _187 v3_____

Code being amended: ☒ Commercial Provisions ☐ Residential Provisions

Code Section # _ C411.1 Renewable energy clarifications and corrections _____

Brief Description:

- Clarifications and additional options in lieu of renewable energy installation.
- Correction of C406 substitution option.
- New definition for “affordable housing.”
- **Revisions highlighted in yellow, per TAG comments and industry requests:**
- One revision makes the “transfer to affordable housing” and “transfer to a state agency” options apply only to that portion of the renewables that don’t fit in the available net roof area, to align with the current state code requirements.
- One increases the dollars per watt for contributions to a state agency, on a sliding scale based on size of array.
- One clarifies the PPA language
- The final change modifies the REIF definition to clarify that the new WA Green Bank is an acceptable sponsor of this type of fund.

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/m²) 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 m²).*
2. *Affordable housing. The on-site renewable energy generation system is not required for affordable housing projects.*

3. 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. 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.
 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.
 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.

- d. 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.
- e. 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 as shown in Table C411.1(5) 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.) 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.

Table C411.1(5)	
Size of Contribution to State Agency	
Size of solar array	Contribution to state agency
Less than 10 kW	\$5.00/W
10 kW to less than 40 kW	\$4.00/W
40 kW to 100 kW	\$3.25/W
Greater than 100 kW	\$2.50/W

For the purposes of this Exception 3, 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 2:12.
- e. Planted or vegetated areas.
- f. Skylights.
- g. Occupied roof decks.

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.

C411.2.1 Qualifying types of off-site renewable energy systems. The following are considered qualifying off-site renewable energy systems:

1. Self-generation (an off-site renewable energy system owned by the building project owner) systems complying with Section C411.2.2.
2. Community renewable energy facility systems complying with Section C411.2.2.
3. (~~Purchase~~) Renewable power purchase agreement (PPA) or Renewable Energy Investment Fund (REIF) contracts complying with Section C411.2.2 and, where applicable, Section C411.2.3.
4. Each source of renewable energy delivered to or credited to the building project shall be connected to the Western Interconnection and energy or capacity multiplied by the factors in Table C411.2.1.

Add new definition and revise existing definition as shown:

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.

RENEWABLE ENERGY INVESTMENT FUND (REIF). A fund established by a jurisdiction or a nonprofit Green Bank recognized by the State of Washington to accept payment from building project owners to construct or acquire interests in qualifying renewable energy systems, together with their associated RECs, on the building project owners' behalf.

Purpose of code change:

- Provides alternatives to installation of on-site renewable energy.
- Supports renewables for affordable housing.
- Clarifies and coordinates existing requirements

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



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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

Your name Duane Jonlin

Other contact name

Your organization Seattle Department of
Construction and Inspections

Email address duane.jonlin@seattle.gov

Phone number 206-233-2781

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.

Provides option to substitute required renewable energy with additional efficiency credits or, for projects utilizing energy modeling, reduced building performance factor. These options may reduce construction costs for some projects.

Eliminates renewable energy requirement for affordable housing, and makes affordable housing projects eligible to receive gifts of renewable energy systems from other projects.

Provide your best estimate of the **construction cost** (or cost savings) of your code change proposal?

[\\$Click here to enter text.](#)/square foot (For residential projects, also provide [\\$Click here to enter text.](#)/ dwelling unit)

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

Construction cost savings will vary for every project, depending on the options chosen.

For affordable housing, construction cost will be *reduced* by approximately ($\$3.00/W \times 0.75 W = \$2.25/\text{square foot}$)

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

[Click here to enter text.](#)KWH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

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

Energy use should be roughly the same for buildings in which alternative compliance options are selected.

For affordable housing, lost savings will be ($1.2 \text{ kW}/W/y \times 0.75 W/sf = 0.9 \text{ kW}/yr \times \$0.11/kW = \$0.10/sf/yr$).

Where a solar array is gifted to affordable housing from another project, the net energy use reduction for the affordable housing will be substantial, while energy use for the source project will increase by an equivalent amount.

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

Some additional time for the code official to track and verify compliance with an alternate path.

Small Business Impact. Describe economic impacts to small businesses:

(None)

Housing Affordability. Describe economic impacts on housing affordability:

Substantial decrease in construction cost for affordable housing, potential decrease for all other housing.

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:

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