



Proposed revision to
206/Hart to correlate with
120/Tenold

STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

Code being amended: Commercial Provisions Residential Provisions

Code Section # C406

Brief Description: This proposal is crafted to incorporate the increased acceptability of on and offsite renewables for C406 compliance. This proposal has additionally been modified to line up with Reid Hart's proposed changes to 406 which seem to be the direction of the group.

Measure Title	Applicable Section	Group R-1	Group R-2	Group B	Group E	Group M	All Other
1. Dwelling unit HVAC control	C406.2.1	NA	7	NA	NA	NA	NA
2. Improved HVAC TSPR ^a	C406.2.2.1	NA	8	11	17	22	NA
3. Improve cooling and fan efficiency	C406.2.2.2	2	1	2	2	3	2
4. Improve heating efficiency	C406.2.2.3	2	3	3	10	16	7
5. DOAS & fan control^b	C406.2.2.4	138	NA	NA	NA	NA	NA
65. High performance DOAS	C406.2.2.54	17746	19346	27	51	13	9213 /(A) 51^b
76. 10% reduced lighting power	C406.2.3.1	7	4	18	16	20	15
87. 20% reduced lighting power ^a	C406.2.3.2	13	8	36	32	40	29
98. Lamp Efficacy Improvement	C406.2.3.3	5	6	NA	NA	NA	NA
409. Residential lighting control	C406.2.4.1	NA	8	NA	NA	NA	NA
4410. Enhanced lighting control	C406.2.4.2	1	1	6	6	11	6
1211. Onsite Renewable energy	C406.2.5	7	12	13	13	10	11
123. Shower drain heat recovery	C406.2.6.1	9	30	NA	3	NA	NA
4413. Service water heat recovery	C406.2.6.2	35	111	13	14	(Grocery) 41 ^d	NA
4514. Heat Pump water heating	C406.2.6.3	81	261	17	33	(Grocery) 95 ^d	(A-2) 95 ^e
4615. Heat trace system	C406.2.7.1	6	13	4	1	NA	26 6

1716. Point of use water heater	C406.2.7.2	NA	NA	56	19	15	5	NA	NA
1817. Auto thermostatic balancing valves	C406.2.7.3	2	3	1	1	1	1	2	2
1918. Service Hot Water Distribution Right Sizing	C406.2.8	13	42	NA	NA	NA	NA	NA	NA
2019. Enhanced envelope performance ^c	C406.2.9	24	20	13	5	19	14	19	14
2120. Reduced air infiltration ^c	C406.2.10	29	24	6	3	9	11	9	11
2221. Enhanced commercial kitchen equipment	C406.2.11	NA	NA	NA	NA	NA	NA	NA	(A-2) 31 ^e
2322. Enhanced residential kitchen equipment	C406.2.12	12	19	NA	NA	NA	NA	NA	NA
2423. Efficient elevator equipment	C406.2.13	3	5	5	5	4	4	4	4

- Projects using this option may not use Items 3 or 4 2.
- ~~This option is not available to buildings subject to the prescriptive requirements of Section C403.3.5~~For C406.2.2.4 occupancy Group A achieves 51 credits while other occupancy groups achieve 13 credits.
- Buildings or building areas that are exempt from thermal envelope requirements in accordance with Sections C402.1.1 and C402.1.2 do not qualify for this ~~package measure~~.
- Service water heat recovery and heat pump water heating are available in Group M only for supermarkets. Large mixed retail with full grocery and butcher sections shall achieve half the credits.
- Heat pump water heating and kitchen equipment efficiency are available in other only for Group A-2.

C406.2.5 On-site Renewable energy. Projects installing *on-site renewable energy systems* with a capacity of at least 0.1 watts per gross square foot (1.08 W/m²) of building area, *or qualifying off-site renewable energy systems in addition to the on-site renewable energy capacity required by Section C412*, without exception, shall achieve energy credits for this measure. Renewable energy systems installed *on-site* as part of this requirement shall not be used to satisfy other requirements of this code. Credits shall be prorated from the table value as follows:

$$AEC_{RRa} = AEC_{0.1} \times \frac{RR_t - RR_r}{0.1 \times PGFA}$$

Where:

AEC_{RRa} = C406.2.5 achieved energy credits for this project

RR_t = actual total rating of on-site renewable energy systems (W) *as per C406.2.5.1*

RR_r = rating of *on-site renewable energy systems required by Section C412 (W), without exception*

PGFA = Project gross floor area, ft²

$AEC_{0.1}$ = C406.2.5 base credits from Table C406.2

Informative note:

Onsite renewable energy may include thermal service water heating or pool water heating in which case ratings in Btu/h can be converted to W where $W = \text{Btu/h} / 3.413$.

C406.2.5.1 Qualifying types of renewable energy systems.

1. Systems shall be connected to the Western Interconnection.
2. Self-generation (an off-site renewable energy system owned by the building project owner); the system shall comply with Section C406.3.2.2.
3. Community renewable energy facility; the system shall comply with Section C406.2.5.2.
4. Purchase contract; the system shall comply with Section C406.2.5.2.
5. Each source of renewable energy delivered to or credited to the building project shall be multiplied by the factors in Table C406.2.5.1.

Table C406.2.5.1: Multipliers for Renewable Energy Procurement Methods

Location	Renewable Energy Source	Renewable Energy Factor		
		In the state of Washington	Western Interconnect	In the states of Oregon or Idaho
On-Site	On-site renewable energy system	1	NA	NA
Off-Site	Directly owned off-site renewable energy system that begins operation after submission of the initial permit application	0.95	0.75	0.85
Off-Site	Community renewable energy facility that begins operation after submission of the initial permit application	0.95	0.75	0.85
Off-Site	Directly owned off-site renewable energy system that begins operation before submission of the initial permit application	0.75	0.55	0.65
Off-Site	Community renewable energy facility that begins operation before submission of the initial permit application	0.75	0.55	0.65
Off-Site	Renewable Power Purchase Agreement (PPA)	0.75	0.55	0.65

C406.2.5.2 Documentation requirements for off-site renewable energy systems. Off-site renewable energy delivered or credited to the building project to comply with C406.2.5 shall be subject to a legally

binding contract to procure qualifying off-site renewable energy. Qualifying off-site renewable energy shall meet the following requirements:

1. Documentation of off-site renewable energy procurement shall be submitted to the *code official*.
2. The purchase contract shall have a duration of not less than 15 years. The contract shall be structured to survive a partial or full transfer of ownership of the building property.
3. Records on renewable power purchased by the building owner from the off-site renewable energy generator that specifically assign the RECs to the building owner shall be retained or retired by the building owner on behalf of the entity demonstrating financial or operational control over the building seeking compliance to this standard and made available for inspection by the *code official* upon request.
4. Where multiple buildings in a building project are allocated energy procured by a contract subject to this section, the owner shall allocate for not less than 15 years the energy procured by the contract to the buildings in the building project. A plan on operation shall be developed which shall indicate how renewable energy produced from on-site or off-site systems that is not allocated before issuance of the certificate of occupancy will be allocated to new or existing buildings included in the building project.

C406.2.5.3 Renewable Energy Certificate Tracking. For multitenant buildings where RECs are transferred to tenants, the plan for operation shall include procedures for tracking the quantity and vintage of RECs that are required to be retained and retired. The plan shall include provisions to transfer the RECs to building tenants, or to retire RECs on their behalf in proportion to the gross conditioned and semiheated floor area leased or rented. The plan shall include provisions to use a REC tracking system that meets the requirements of Section V.B of the Green-e Framework for Renewable Energy Certification. The plan shall describe how the building owner will procure alternative qualifying renewable energy in the case that the renewable energy producer ceases.

Purpose of code change:

Adding offsite renewables allows projects to receive credit for the energy produced from their portion of a solar array, this code change proposal allows for participation in an offsite renewables project to be brought into the code for projects where installing on-site renewables is not feasible for C406 compliance.

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 type="checkbox"/> Single family/duplex/townhome | <input checked="" 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 type="checkbox"/> Industrial |

Your name Gavin Tenold

Other contact name Jon Lang

Your organization WASEIA

Email address gavin@northwestrenewables.com

Phone number 509.867.3011

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 360-407-9278.

Economic Impact Data Sheet

Economic Impact Data Sheet

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

This proposal will allow for larger, less costly power purchases by building Owners, tenants and businesses. Community Solar can be delivered in economy of scale that can't be achieved except for large on-site solar arrays (which are optional investments and not required by code). Additionally, this proposal will allow for compliance using solar where solar was not originally viable on the proposed project's rooftop.

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](#)**)

Pricing varies: \$2.00- \$3.40 per DC Watt.

Show calculations here, and list sources for costs/savings, or attach backup data pages: **Cost Information was collected from Washington Solar Energy Industries Association member projects.**

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

Code officials will need to collect evidence of purchase of community solar, and review for compliance. Estimated at 0.25 hrs at time of permit, and .1 hrs at verification (CFO).

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