**Add new definitions as follows:**

**BIOMASS WASTE.** Organic non-fossil material of biological origin that is a byproduct or a discarded product. Biomass waste includes municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural crop byproducts, straw, and ~~other biomass solids, liquids, and biogases~~ wood waste and wood residuals harvested at the *building* *site*. ~~but excludes wood and wood-derived fuels (including black liquor), biofuel feedstock, biodiesel, and fuel ethanol~~.

**RENEWABLE ENERGY RESOURCES.** Energy derived from solar radiation, wind, waves, tides, ~~landfill gas, biogas,~~ ~~biomass~~ *biomass waste* or extracted from hot fluid or steam heated within the earth.

**DELIVERED RENEWABLE FUEL (IECC).** Fuels delivered to the *building site* whose total greenhouse gas emissions are no greater than the following when calculated in accordance with California Air Resources Board’s Low Carbon Fuel Standard :

1. 25.3 gCO2e/MJ for renewable natural gas.
2. 27.1 gCO2e/MJ for renewable fuel oil, renewable diesel, and biodiesel.
3. 24.6 gCO2e/MJ for renewable propane.



**ON-SITE RENEWABLE ENERGY.** Energy from *renewable energy resources* harvested at the building project site.

**Revise section C405.15 as follows:**

**C405.15 Renewable energy systems** *Buildings* in Climate Zones 0-7 shall comply with

C405.15.1 through C405.15.4

**C405.15.1 On-site renewable energy systems** *Buildings* shall install equipment for on-site renewable electricity generation with a direct current (DC) nameplate power rating of not less than 0.75 W/ft2 (8.1 W/m2) multiplied by the sum of the gross conditioned floor area of all floors not to exceed the combined gross conditioned floor area of the three largest floors.

**Exceptions:** The following buildings or building sites shall comply with Section C405.15.2:

1. A building site located where an unshaded flat plate collector oriented toward the equator and tilted at an angle from horizontal equal to the latitude receives an annual daily average incident solar radiation less than 1.1 kBtu/ft2 - day (3.5 kWh/m2 - day).

2. A *building* 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. Any building 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.

4. A *building* with gross conditioned floor area less than 5,000 square feet (465 m2).

**C405.15.2 Off-site renewable energy and delivered renewable fuels.** *Buildings* that qualify for one or more of the exceptions to Section 405.15.1 and do not meet the requirements of Section 405.15.1 either in part or in full, with an on-site renewable energy system, shall comply with this section. *Buildings* shall procure off-site renewable electrical energy in accordance with C405.15.2.1 and C405.15.2.2, or shall procure *delivered renewable fuels* with a contract in accordance with C405.15.2.2, that shall not be less than the total off-site renewable ~~electrical~~ energy determined in accordance with Equation 4-14.

TREoff = Total off-site renewable ~~electrical~~ energy ~~in kilowatt-hours (kWh)~~ to

be procured in accordance with Table C405.15.2 **(Equation 4-14)**

RENoff = Annual off-site renewable ~~electrical~~ energy from Table C405.15.2~~, in units of kilowatt-hours per watt of array capacity~~

FLRA = the sum of the gross conditioned floor area of all floors not to exceed the combined floor area of the three largest floors

IREon = Annual on-site renewable ~~electrical~~ energy generation of a new on-site renewable energy system, to be installed as part of the building project, whose rated capacity is less than the rated capacity required in Section C405.15.1

**TABLE C405.15.2**

**Annual Off-site Renewable Energy Requirement**

Climate Zone Annual Off-site Renewable ~~Electrical~~ Energy (kWh/W)

1A, 2B, 3B, 3C, 4B, and 5B 1.75 kWh/W

0A, 0B, 1B, 2A, 3A, and 6B 1.55 kWh/W

4A, 4C, 5A, 5C, 6A, and 7 1.35 kWh/W

**C405.15.2.1 Off-site procurement** The building owner as defined in the *International*

*Building Code* shall procure and be credited for the total amount of off-site renewable

electrical energy, not less than required in accordance with Equation 4-14, with one or

more of the following:

1. A *physical renewable energy power purchase agreement*

2. A *financial renewable energy power purchase agreement*

3. A *community renewable energy facility*

4. Off-site renewable energy system owned by the building property owner

**C405.15.2.2 Off-site contract** The *renewable energy* shall be delivered or credited to

the building site under an energy contract with a duration of not less than 10 years. The

contract shall be structured to survive a partial or full transfer of ownership of the building property. The total required off-site renewable ~~electrical~~ energy shall be procured in equal installments over the duration of the off-site contract.

**C405.15.3 Renewable energy certificate documentation.** The property owner or owner's authorized agent shall demonstrate that where RECs or EACs are associated with on-site and off-site renewable energy production required by Sections C405.15.1 and C405.15.2 all of the following criteria for RECs and EACs shall be met:

1. Are retained and retired by or on behalf of the property owner or tenant for a period of not less than 15 years or the duration of the contract in C405.15.2.2 whichever is less;

2. Are created within a 12-month period of the use of the REC; and

3. Are from a generating asset constructed no more than 5 years before the issuance of the certificate of occupancy.

**C405.15.4 Renewable energy certificate purchase.** A *building* that qualifies for one or

more of the exceptions to Section C405.15.1 and where it can be demonstrated to the *code official* that the requirements of Section C405.15.2 cannot be met, the building owner shall contract for renewable electricity products complying with the Green-e Energy National Standard for Renewable Electricity products equivalent to five times the amount of total offsite renewable energy calculated in accordance with Equation 4-14.

**SECTION C406  
ADDITIONAL EFFICIENCY, RENEWABLE, AND LOAD MANAGEMENT REQUIREMENTS**

**C406.3.1 R01 Renewable Energy.** Projects installing *on-site renewable energy* systems with a capacity of at least 0.1 watts per gross square foot (1.08W/m2) of building area or securing offsite renewable energy shall achieve energy credits for this measure calculated as follows:

ECR= C406.3.1 R01 energy credits achieved for this project (Equation 4-28)

Rt= Actual total rating of *on-site renewable energy* systems (W)

PGFA = Project gross floor area, ft2

EC0.1= C406.3.1 R01 base credits from Tables C406.3(1) through C406.3(9)

ROFF= Actual total equivalent rating of off-site renewable energy contracts (W), calculated as follows:

ROFF= TRE/(REN X 20)

where:

TRE = Total off-site renewable electrical energy in kilowatt-hours (kWh) that is procured in accordance with Sections C405.13.2.1 through C405.13.4

REN = Annual off-site renewable electrical energy from Table C405.13.2, in units of kilowatthours per watt of array capacity Rex= Rating (W) of renewable energy resources capacity excluded from credit calculated as follows:

Rex= RRr+ RRx+ RRc where: RRr= Rating of *on-site renewable energy* systems required by Section C405.13.1, without exception (W).

RRx= Rating of renewable energy resources used to meet any exceptions of this code (W).

RRc= Rating of renewable energy resources used to achieve other energy credits in Section C406 (W).

Where renewable requirements, exceptions, or credits are expressed in annual kWh or Btu rather than Watts of output capacity, they shall be converted as3413 Btu = 1 kWh and converted to W equivalent capacity as follows:

RRw= Actual total equivalent rating of renewable energy capacity (W), calculated as follows:

RRw= TREx/ ( REN × PGFA )

where:

TREx= Total renewable energy in kilowatt-hours (kWh) that is excluded from R01 energy credits

**SECTION C502  
ADDITIONS**

**Revise as follows:**

**C502.3.7 Renewable energy systems**.

Additions shall comply with Section C405.~~13~~**15** for the addition alone.