

**ANSI/ASHRAE/ICC/USGBC/IES Addendum I to  
ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2020**

# **Standard for the Design of High-Performance Green Buildings**

**Except Low-Rise  
Residential Buildings**

*The Complete Technical Content of the International Green Construction Code®*

Approved by the ASHRAE Standards Committee on June 25, 2022; by the ASHRAE Board of Directors on June 29, 2022; by the International Code Council on May 20, 2022; by the U.S. Green Building Council on May 23, 2022; and by the Illuminating Engineering Society on June 10, 2022; and by the American National Standards Institute on July 29, 2022.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (<https://www.ashrae.org/continuous-maintenance>).

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ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Senior Manager of Standards of ASHRAE should be contacted for

- interpretation of the contents of this Standard,
- participation in the next review of the Standard,
- offering constructive criticism for improving the Standard, or
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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

## FOREWORD

*Addendum I clarifies renewable energy terminology and requirements by adding definitions for financial (virtual) renewable energy power purchase agreement (PPA) and physical renewable energy PPA, by revising the definition for renewable energy certificates, and by revising the charging language in Section 7.4.1. Finally, the addendum substitutes “shall” for “may” in Section 7.3.2.*

**Note:** In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

### Addendum I to Standard 189.1-2020

**Modify Section 3.2 as shown.**

**renewable energy power purchase agreement (PPA), financial:** a financial arrangement between a renewable electricity generator and a purchaser wherein the purchaser pays or guarantees a price to the generator for the project’s renewable generation. Also known as a “financial power purchase agreement” and “virtual power purchase agreement.”

**renewable energy power purchase agreement (PPA), physical:** a contract for the purchase of renewable electricity from a specific renewable electricity generator to a purchaser of renewable electricity.

**renewable energy certificate (REC):** a tradable market-based instrument that represents and conveys the environmental attributes of one megawatt-hour of renewable electricity generation and ~~is transacted~~ could be sold separately from the underlying physical electricity generated by associated with the renewable energy source resources; also known as “energy attribute” and “energy attribute certificate.”

**Modify Section 3.3 as shown.**

PPA power purchase agreement

**Modify Section 7.3.2 as shown.**

**7.3.2 On-Site Renewable Energy Systems.** *Building projects* shall contain on-site photovoltaic systems with a rated capacity of not less than 2 W/ft<sup>2</sup> (22 W/m<sup>2</sup>) multiplied by the horizontal projection of the *gross roof area over conditioned spaces and semiheated spaces*. Documentation shall be provided to the *AHJ* that indicates an exclusive chain of custody and ownership of the *RECs* from the *on-site renewable energy system* to the *building owner*. *RECs* supplied from the *on-site renewable energy system* shall be conveyed to and retired on behalf of the entity who has financial or operational control over the building’s electricity consumption. *RECs* shall be tracked per Section 10.9.8. Where the *building owner* cannot provide documentation on the chain of custody or ownership of the *RECs* from the *on-site renewable energy system*, the *building owner* ~~may shall~~ provide documentation to the *AHJ* of an alternate supply contract for an equal or greater quantity of replacement *RECs* from an alternate renewable energy source.

[ . . . ]

**Modify Section 7.4.1.1 as shown. Highlighted text was relocated but is otherwise unchanged.**

**7.4.1.1 Renewable Energy Systems.** The building project shall have a renewable energy system that provides energy to the project that is not less than the renewable energy requirement from Table 7.4.1.1 multiplied by the adjusted renewable energy provided to the project shall be equal to or greater than the gross conditioned and semiheated floor areas of the building project multiplied by the renewable energy requirement from Table 7.4.1.1. ~~The adjusted renewable energy provided to the project shall be equal to or greater than the gross conditioned and semiheated floor areas of the building project multiplied by the renewable energy requirement from Table 7.4.1.1.~~ Where there are ~~For allocations to multiple tenants within a building project,~~ the energy requirements shall be assigned to each tenant based on the total of *gross conditioned and semiheated floor area* of each tenant space.

~~*Building projects* complying with the Alternate Renewables Approach shall comply with the applicable equipment efficiency requirements in Normative Appendix B, the water heating effi-~~

efficiency requirements in Section 7.4.4.1, equipment efficiency requirements in Section 7.4.7.1, and the applicable ENERGY STAR® requirements in Section 7.4.7.3.2. For equipment listed in Section 7.4.7.3.2 that are also contained in Normative Appendix B, the installed equipment shall comply by meeting or exceeding both requirements. The Alternate Renewables Approach shall apply only to building projects where the sum of the gross conditioned and semiheated floor areas of the building project are less than 25,000 ft<sup>2</sup> (2300 m<sup>2</sup>).

Documentation shall be provided to the AHJ that substantiates procurement of renewable energy systems, of *renewable energy contracts*, or of a quantity of RECs required to meet the Exception to 7.4.1.1. RECs shall be tracked in accordance with Section 10.9.8.

The *renewable energy system* shall be made up of one or more of the following system types. Off-site renewable energy systems shall comply with section 7.4.1.3. Qualifying renewable energy systems are as follows:

- a. On-site renewable energy system
- b. Off-site renewable energy system:
  1. Off-site renewable energy system Self-generation (an off-site renewable energy system owned by the building project owner); the system shall comply with Section 7.4.1.3.
  2. Community renewable energy facility; the system shall comply with Section 7.4.1.3.
  3. ~~Purchase contract~~ Financial renewable energy PPA; the system shall comply with Section 7.4.1.3.
  4. Physical renewable energy PPA

Building projects complying with the Alternate Renewables Approach shall comply with the applicable equipment efficiency requirements in Normative Appendix B, the water-heating efficiency requirements in Section 7.4.4.1, equipment efficiency requirements in Section 7.4.7.1, and the applicable ENERGY STAR® requirements in Section 7.4.7.3.2. For equipment listed in Section 7.4.7.3.2 that are also contained in Normative Appendix B, the installed equipment shall comply by meeting or exceeding both requirements. The Alternate Renewables Approach shall apply only to building projects where the sum of the gross conditioned and semiheated floor areas of the building project are less than 25,000 ft<sup>2</sup> (2300 m<sup>2</sup>).

Documentation shall be provided to the AHJ that substantiates procurement of renewable energy systems, of *renewable energy contracts*, or of a quantity of RECs required to meet the Exception to 7.4.1.1. RECs shall be tracked in accordance with Section 10.9.8.

**Exception to 7.4.1.1:** *Building projects* that demonstrate to the AHJ that they cannot comply with Section 7.4.1.1 shall contract for renewable electricity products complying with the Green-e® Energy National Standard for Renewable Electricity Products of not less than 1.2 MWh/ft<sup>2</sup> (12.6 MWh/m<sup>2</sup>) of gross floor area of conditioned spaces and semiheated spaces, or an amount equal to 100% of the modeled annual energy use multiplied by 20 years, whichever is less. A combination of renewable electricity products and renewable energy systems shall be permitted to demonstrate compliance. RECs shall be tracked per Section 10.9.8.

[ ... ]

**Modify Table 7.4.1.2 as shown.**

**Table 7.4.1.2 Multipliers for Renewable Energy Procurement Methods**

Location	Renewable Energy Source	Renewable Energy Factor
On-site	<i>On-site renewable energy system</i>	1.00
Off-site	<del>Directly owned</del> <i>Off-site renewable energy system owned by the building project owner</i>	0.75
	<i>Community renewable energy facility</i>	0.75
	<del>Virtual PPA</del> <i>Financial renewable power purchase agreement</i>	0.75
	<i>Physical renewable power purchase agreement</i>	0.75

**Modify Section 7.4.1.3 as shown.**

**7.4.1.3 Off-Site Renewable Energy Requirements.** Off-site renewable energy delivered or credited to the *building project* to comply with Section 7.4.1.1 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:

- a. Documentation of off-site renewable energy procurement shall be submitted to the *AHJ*.
- b. The ~~purchase energy~~ 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.
- c. ~~RECs associated with the purchase an off-site renewable energy contract to deliver or credit the building project for from an off-site renewable energy procurement system~~ shall
  1. be assigned exclusively to the building *owner* for a period of not less than 15 years and tracked in accordance with Section 10.9.8,
  2. include documentation that the *REC* will be created within a 12-month period of the use of the *REC*, and
  3. include documentation that the *REC* production will be from a generating asset constructed no more than five (5) years before the issuance of the certificate of occupancy.

[ . . . ]

**POLICY STATEMENT DEFINING ASHRAE'S CONCERN  
FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES**

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

### **Standard 189.1 and the International Green Construction Code**

Standard 189.1 serves as the complete technical content of the International Green Construction Code® (IgCC). The IgCC creates a regulatory framework for new and existing buildings, establishing minimum green requirements for buildings and complementing voluntary rating systems. For more information, visit [www.iccsafe.org](http://www.iccsafe.org).

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As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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